Quantitation Results

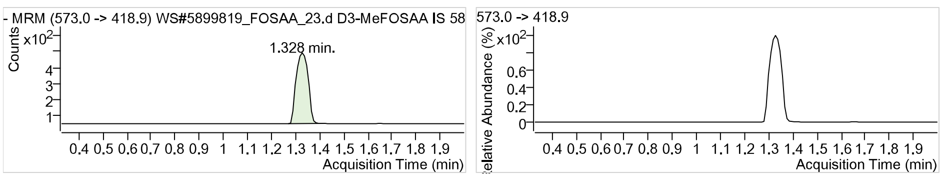
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

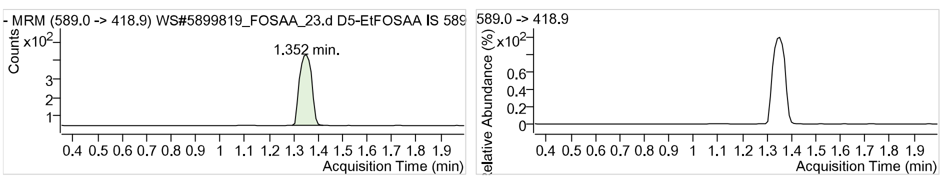
Sample Name	**5899819:IOF253-01**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_23.d	**Operator**	
Sample Type	Sample	**Dilution**	0.0211
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-C8
Acq. Date	2018/12/22 12:17:06 AM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1541	1.33	1 µg/L		
D5-EtFOSAA IS	1324	1.35	1 µg/L		
13C9-PFDA IS	21720	0.95	1 µg/L		

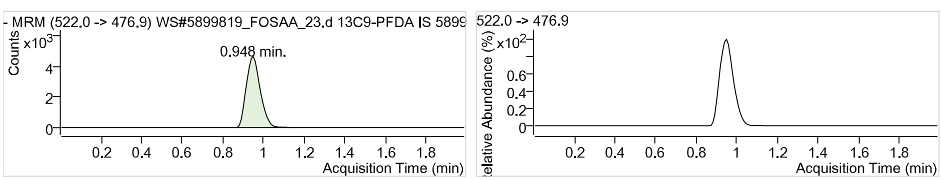
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1549	1.33	-	84.09 µg/L	-
D5-EtFOSAA	1330	1.35	-	80.56 µg/L	-
13C9-PFDA	21720	0.95	-	2.20 µg/L	-



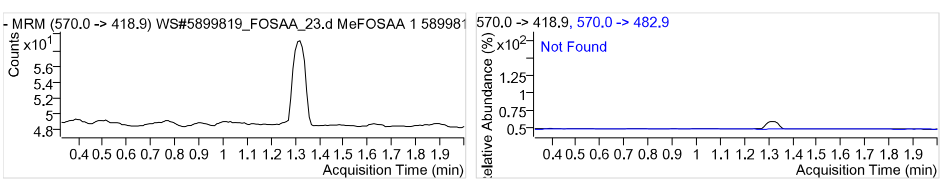
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



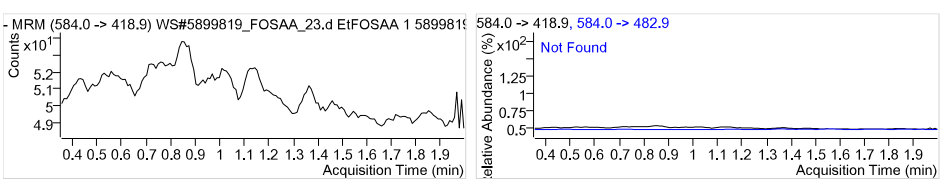
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



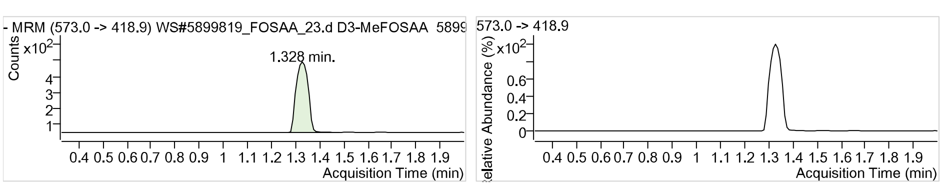
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.948 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



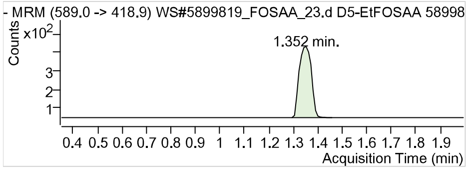
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

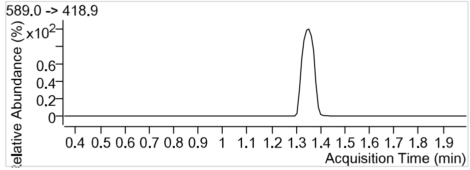


EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

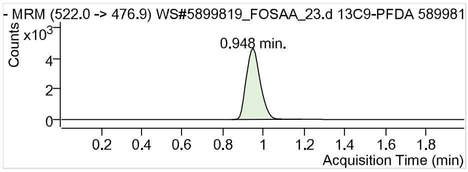


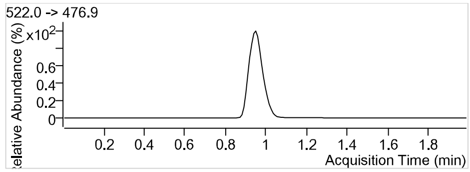
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	84.09 µg/L
Area ratio:	0.07132
Sample type:	Sample





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 80.56 µg/L
Area ratio: 0.06123
Sample type: Sample





13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.948 (0.986)
Calc. conc. 2.20 µg/L
Area ratio: 0
Sample type: Sample

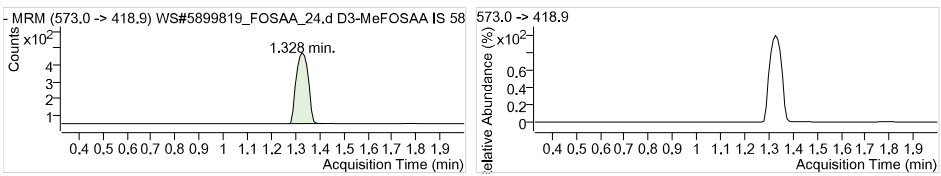
Quantitation Results

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

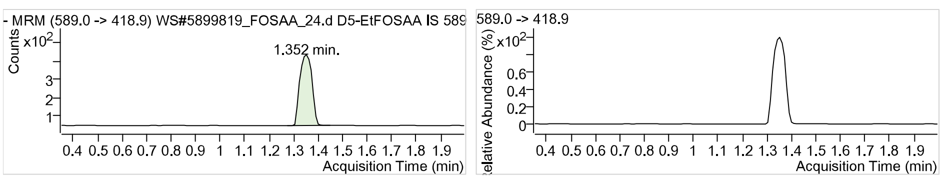
Sample Name	**5899819:IOF255-01**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_24.d	**Operator**	
Sample Type	Sample	**Dilution**	0.0216
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-C9
Acq. Date	2018/12/22 12:19:29 AM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1462	1.33	1 µg/L		
D5-EtFOSAA IS	1339	1.35	1 µg/L		
13C9-PFDA IS	21218	0.95	1 µg/L		

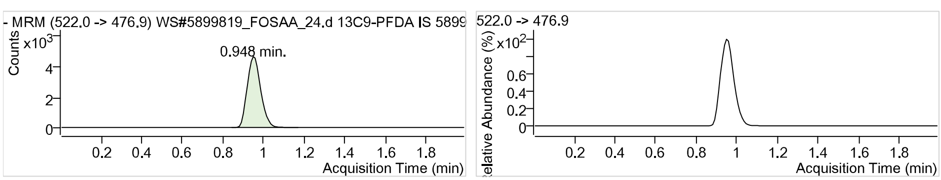
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1462	1.33	-	81.24 µg/L	-
D5-EtFOSAA	1339	1.35	-	83.02 µg/L	-
13C9-PFDA	21210	0.95	-	2.20 µg/L	-



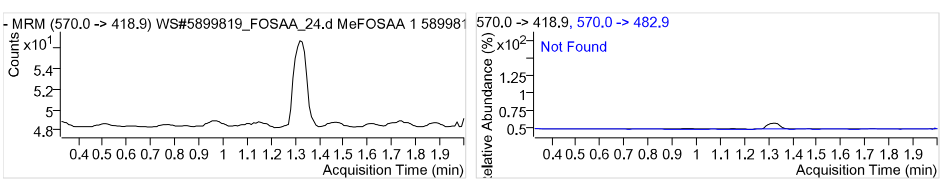
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



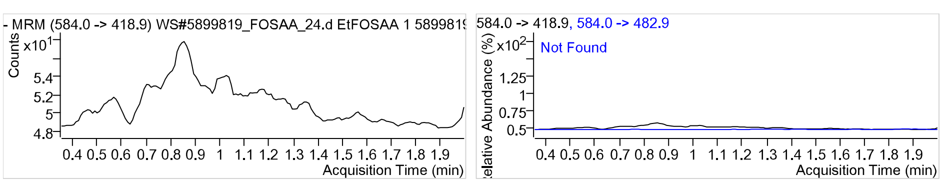
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



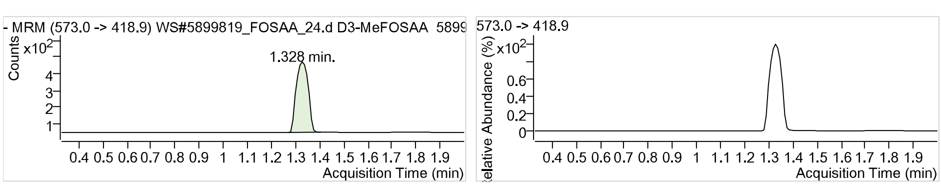
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.948 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



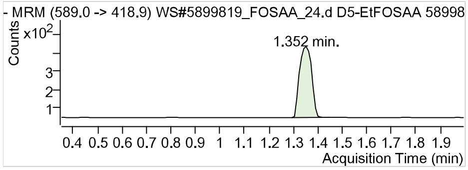
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

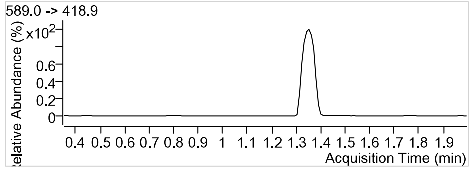


EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

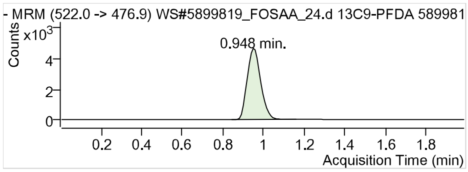


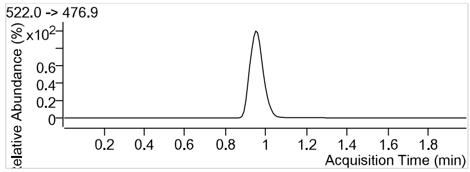
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	81.24 µg/L
Area ratio:	0.06890
Sample type:	Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	83.02 µg/L
Area ratio:	0.06311
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.948 (0.986)
Calc. conc.	2.20 µg/L
Area ratio:	0
Sample type:	Sample

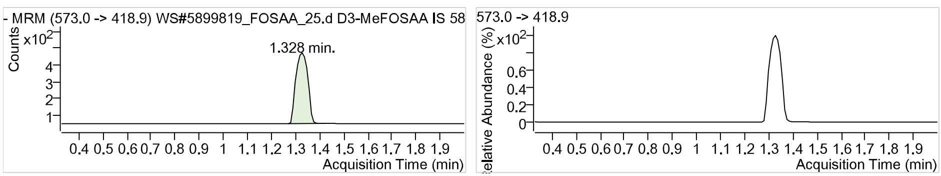
Quantitation Results

Agilent Technologies

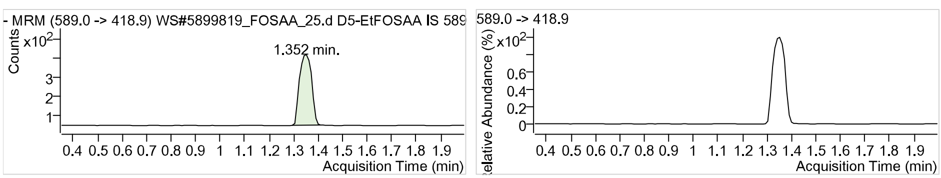
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics		
Sample Name	**5899819:IOF256-01**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_25.d	**Operator**	
Sample Type	Sample	**Dilution**	0.0229
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-D1
Acq. Date	2018/12/22 12:21:52 AM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1464	1.33	1 µg/L		
D5-EtFOSAA IS	1275	1.35	1 µg/L		
13C9-PFDA IS	21301	0.93	1 µg/L		

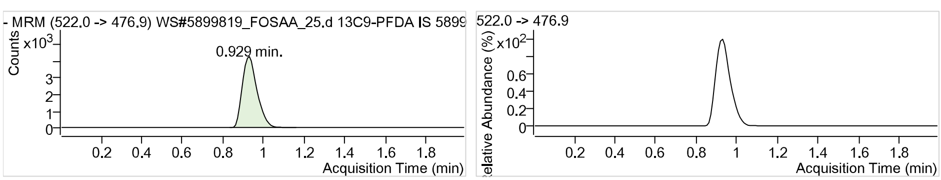
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1476	1.33	-	81.70 µg/L	-
D5-EtFOSAA	1284	1.35	-	79.30 µg/L	-
13C9-PFDA	21302	0.93	-	2.35 µg/L	-



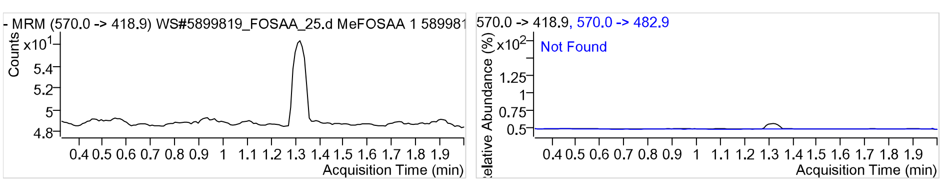
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



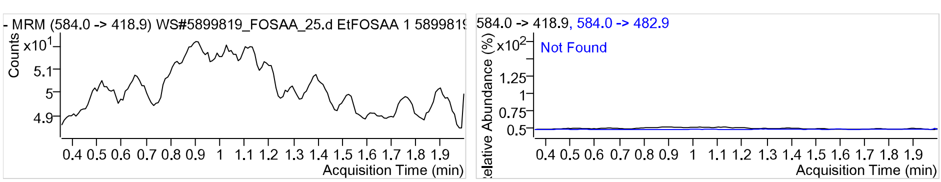
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



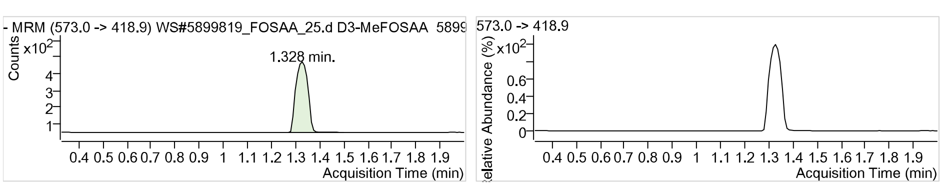
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.929 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



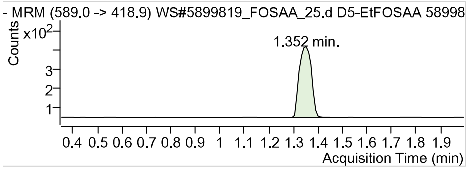
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

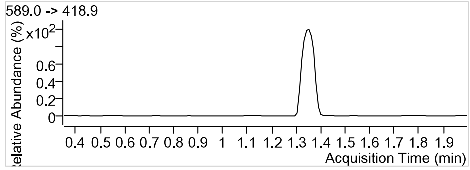


EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

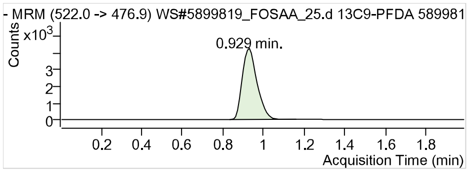


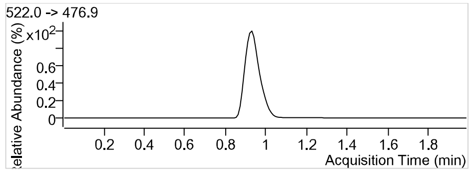
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	81.70 µg/L
Area ratio:	0.06929
Sample type:	Sample





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 79.30 µg/L
Area ratio: 0.06028
Sample type: Sample





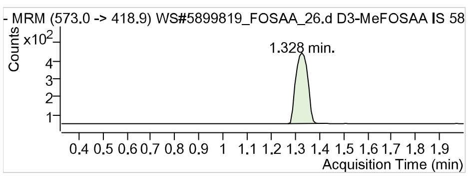
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.929 (0.986)
Calc. conc. 2.35 µg/L
Area ratio: 0
Sample type: Sample

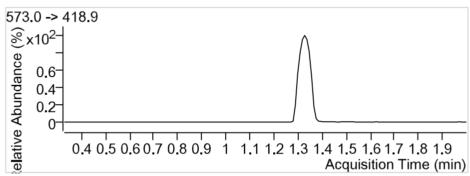
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

Sample Name	**5899819:IOF257-01**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_26.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-D2
Acq. Date	2018/12/22 12:24:15 AM	**Injection Volume**	Per Method
Sample Annotation	-		

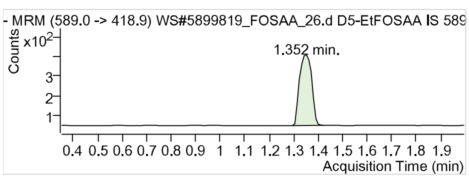
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1379	1.33	1 µg/L		
D5-EtFOSAA IS	1248	1.35	1 µg/L		
13C9-PFDA IS	20931	0.93	1 µg/L		

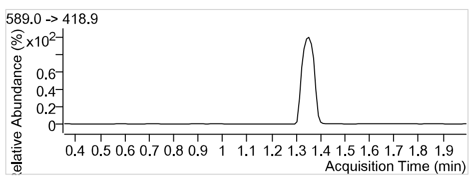
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1383	1.33	-	77.91 µg/L	-
D5-EtFOSAA	1249	1.35	-	78.51 µg/L	-
13C9-PFDA	20934	0.93	-	2.42 µg/L	-



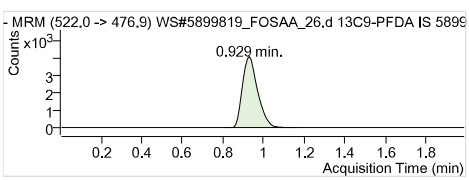


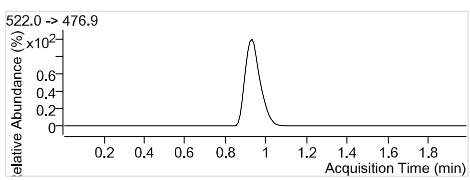
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



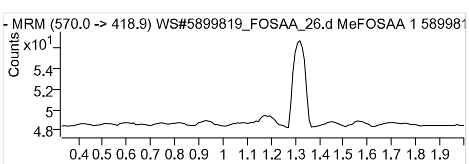


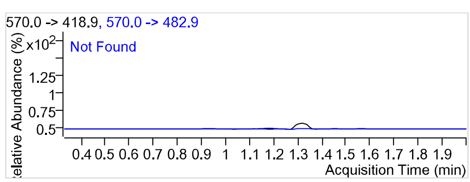
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



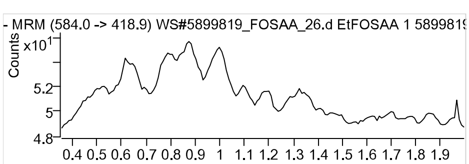


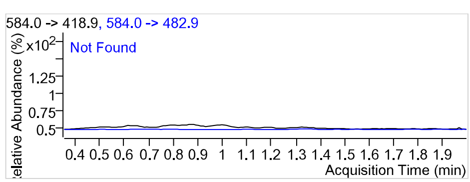
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.929 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



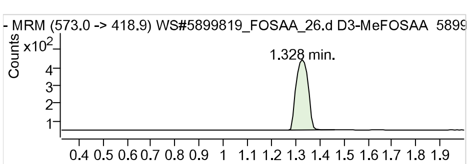


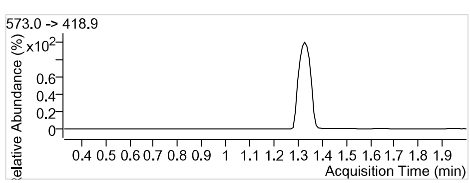
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



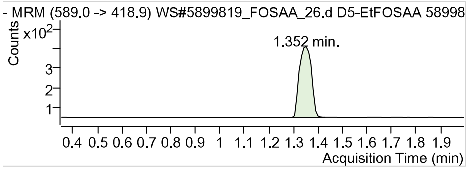


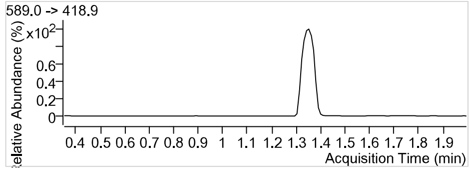
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



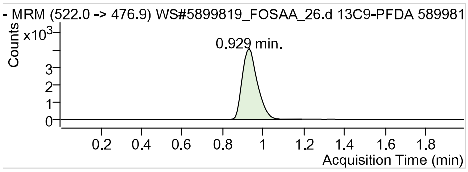


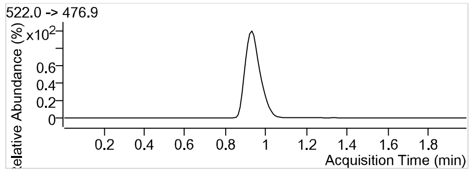
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	77.91 µg/L
Area ratio:	0.06607
Sample type:	Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	78.51 µg/L
Area ratio:	0.05967
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.929 (0.986)
Calc. conc.	2.42 µg/L
Area ratio:	0
Sample type:	Sample

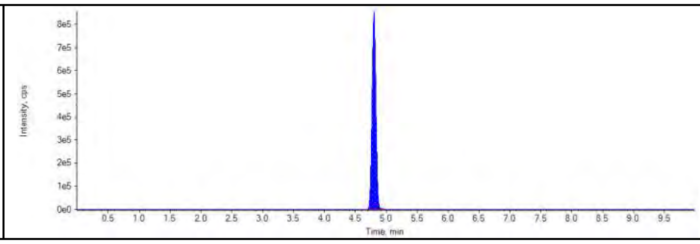
Sample ID	5907027~IOF240-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	15
Acquisition Date	2019/01/03 3:58:04 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injected to confirm IS recovery, reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	3720000.	4.80	1.00	-
MPFOS	454000.	5.53	1.00	-
D3-MeFOSAA IS	3060000.	6.35	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	21600	2.01	N/A	0.359	N/A
PFHxA 1	87300	2.90	N/A	0.696	N/A
PFHxS 1	81200	4.07	N/A	2.46	N/A
PFHpA 1	0	0.00	N/A	N/A	N/A
PFOA 1	99200	4.81	N/A	0.784	N/A
PFOS 1	27500	5.55	N/A	1.36	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	2290	6.62	N/A	0.0296	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	4410	7.43	N/A	0.0551	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	4240000	2.89	N/A	36.5	N/A
13C2-PFDA	2980000	6.11	N/A	34.9	N/A
D5-EtFOSAA	2430000	6.60	N/A	155.	N/A

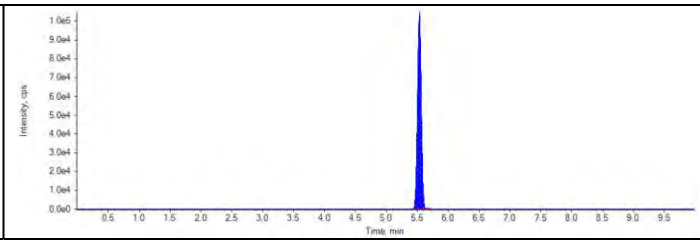
MPFOA (Internal Standard)

RT (Exp. RT): 4.80(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



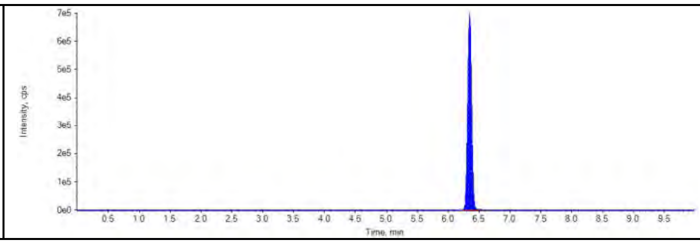
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



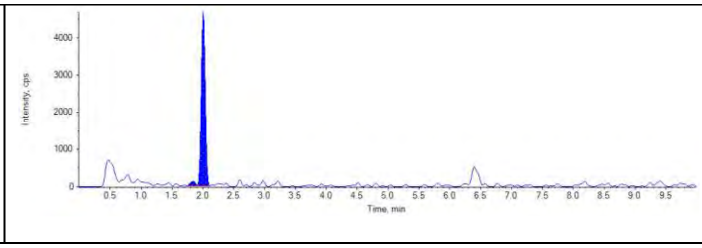
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.35(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



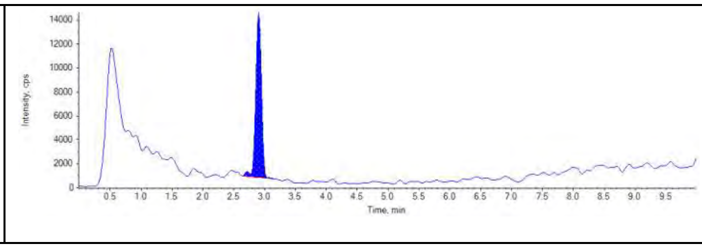
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	2.01 (1.85) min
Calculated Conc:	0.359 ng/L
Area Ratio:	0.0476
Sample Type:	(Unknown)



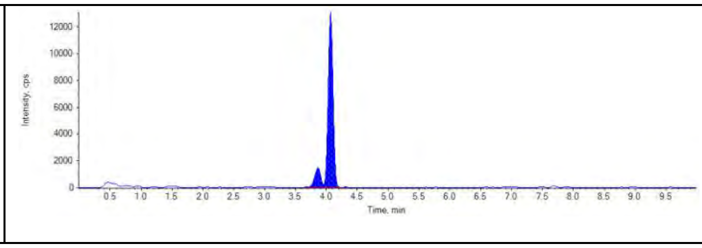
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	2.90 (2.97) min
Calculated Conc:	0.696 ng/L
Area Ratio:	0.0235
Sample Type:	(Unknown)



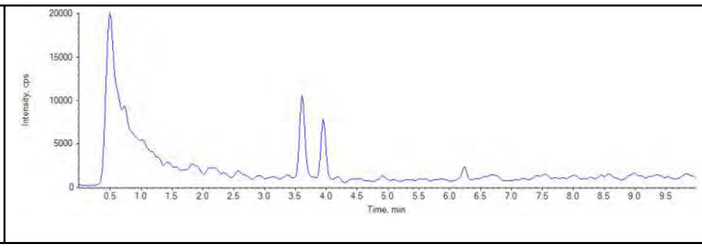
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	4.07 (4.00) min
Calculated Conc:	2.46 ng/L
Area Ratio:	0.179
Sample Type:	(Unknown)



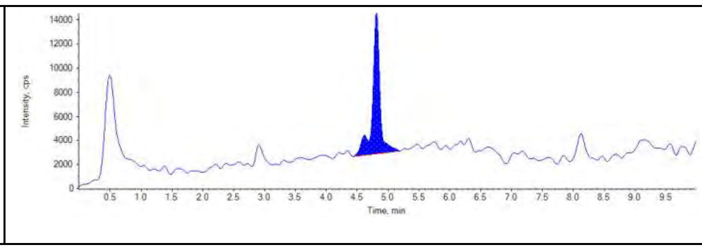
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	0.00 (3.91) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



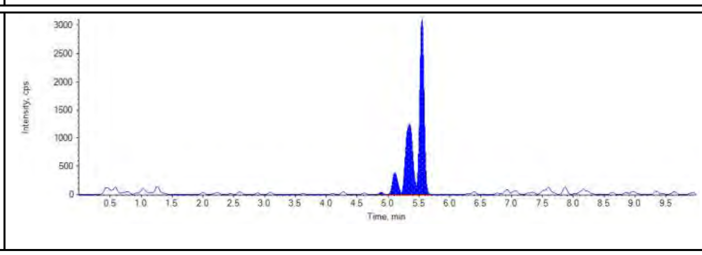
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT):	4.81 (4.89) min
Calculated Conc:	0.784 ng/L
Area Ratio:	0.0267
Sample Type:	(Unknown)



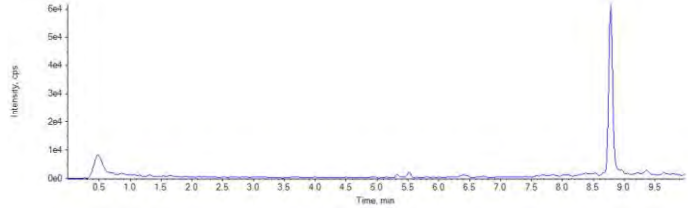
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	5.55 (5.50) min
Calculated Conc:	1.36 ng/L
Area Ratio:	0.0605
Sample Type:	(Unknown)



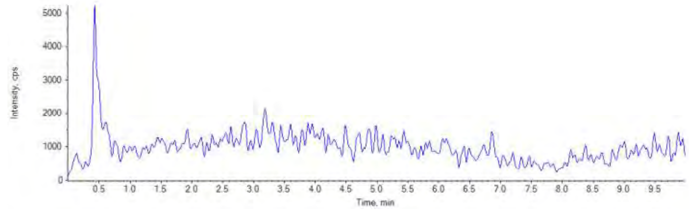
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



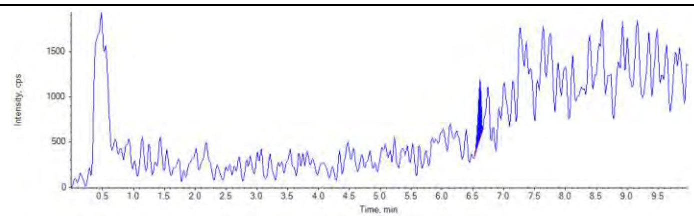
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



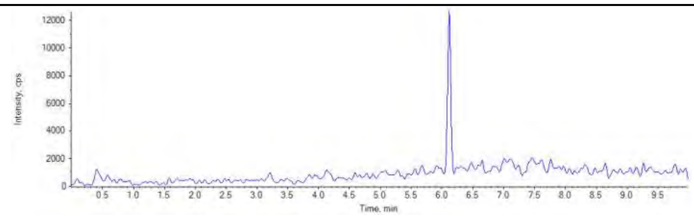
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.62 (6.62) min
Calculated Conc: 0.0296 ng/L
Area Ratio: 0.000614
Sample Type: (Unknown)



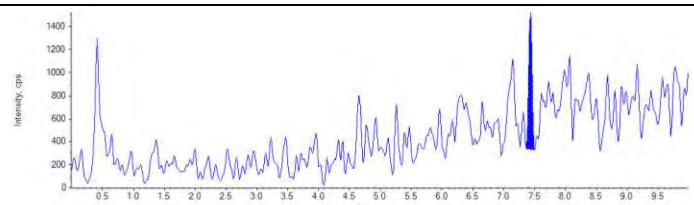
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



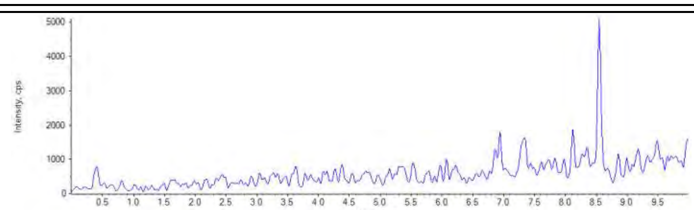
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.43 (7.38) min
Calculated Conc: 0.0551 ng/L
Area Ratio: 0.00118
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



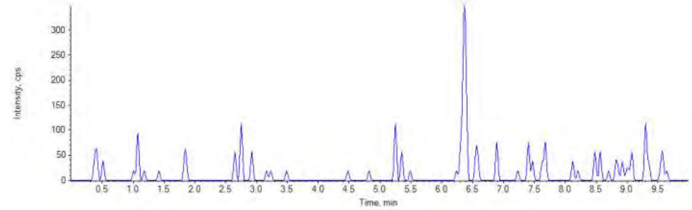
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



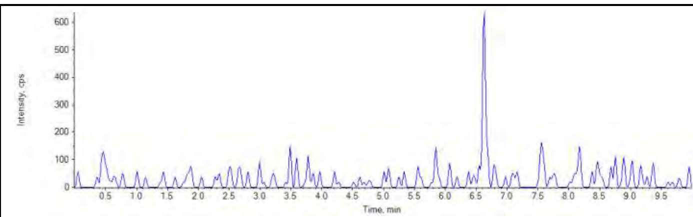
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



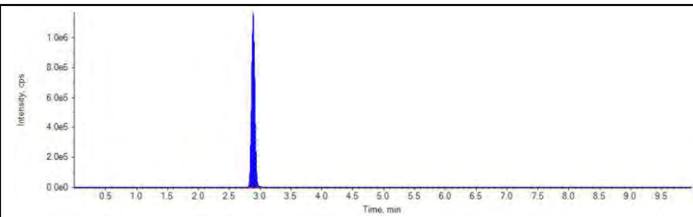
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 36.5 ng/L

Area Ratio: 1.14

Sample Type: (Unknown)



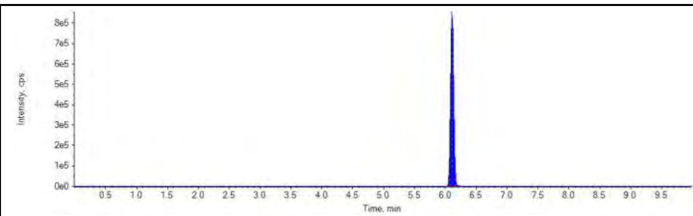
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 34.9 ng/L

Area Ratio: 0.800

Sample Type: (Unknown)



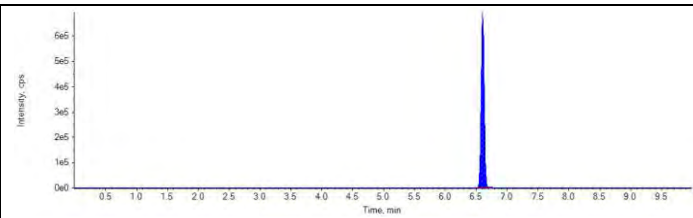
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 155. ng/L

Area Ratio: 0.793

Sample Type: (Unknown)



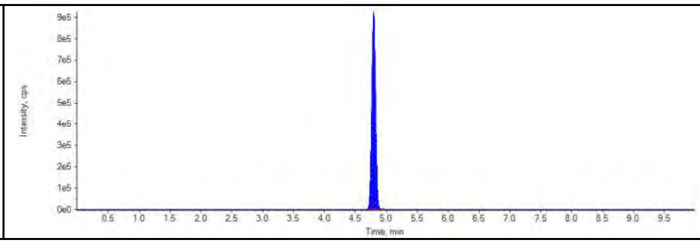
Sample ID	5907027~IOF240-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	15
Acquisition Date	2019/01/04 3:02:35 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injection, not reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	4100000.	4.79	1.00	-
MPFOS	631000.	5.53	1.00	-
D3-MeFOSAA IS	3800000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	23200	2.00	N/A	0.277	N/A
PFHxA 1	120000	2.90	N/A	0.869	N/A
PFHxS 1	111000	4.06	N/A	2.43	N/A
PFHpA 1	41500	3.94	N/A	0.247	N/A
PFOA 1	86800	4.81	N/A	0.622	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	9500	5.51	N/A	0.122	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	5260	7.75	N/A	0.0512	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	5170000	2.88	N/A	40.3	N/A
13C2-PFDA	3850000	6.10	N/A	40.9	N/A
D5-EtFOSAA	3100000	6.60	N/A	159.	N/A

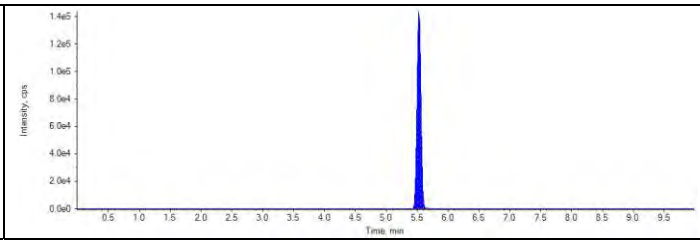
MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



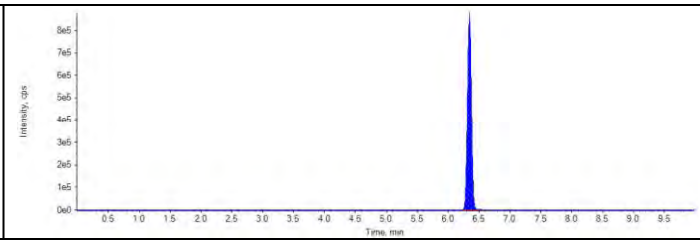
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



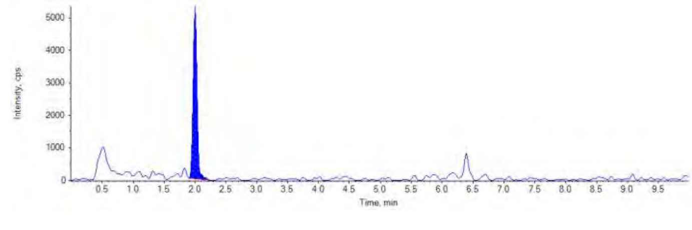
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min

Calculated Conc: 0.277 ng/L

Area Ratio: 0.0367

Sample Type: (Unknown)



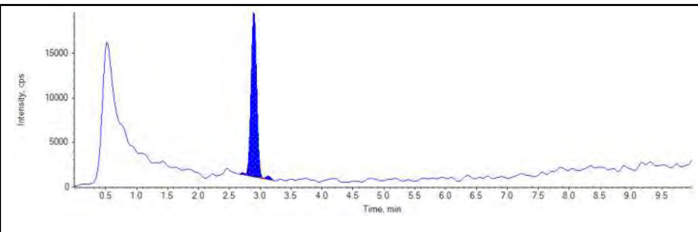
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min

Calculated Conc: 0.869 ng/L

Area Ratio: 0.0293

Sample Type: (Unknown)



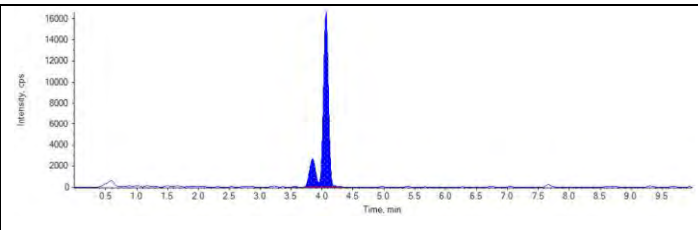
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min

Calculated Conc: 2.43 ng/L

Area Ratio: 0.177

Sample Type: (Unknown)



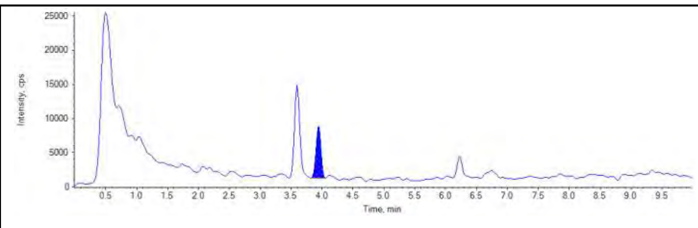
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.94 (3.91) min

Calculated Conc: 0.247 ng/L

Area Ratio: 0.0101

Sample Type: (Unknown)



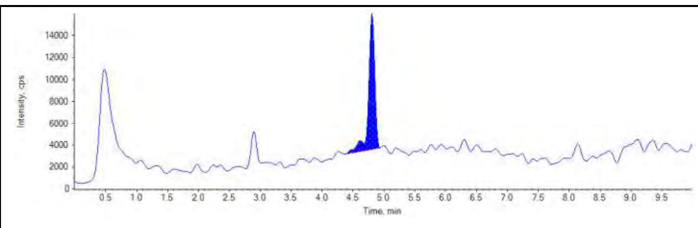
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min

Calculated Conc: 0.622 ng/L

Area Ratio: 0.0212

Sample Type: (Unknown)



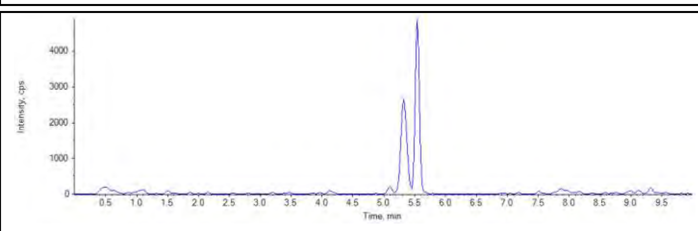
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.50) min

Calculated Conc: N/A ng/L

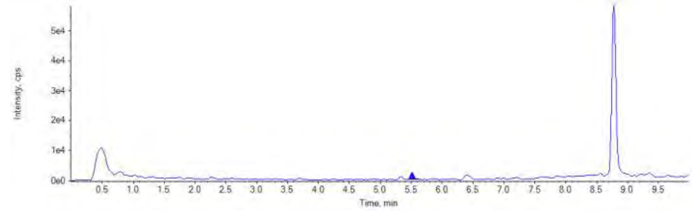
Area Ratio: 0.00

Sample Type: (Unknown)



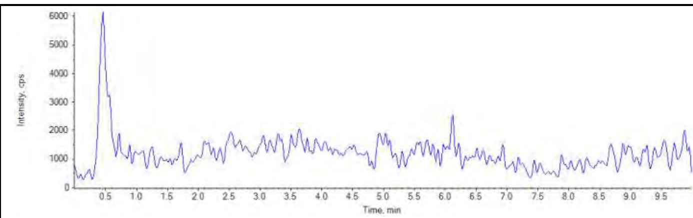
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.51 (5.49) min
Calculated Conc: 0.122 ng/L
Area Ratio: 0.00232
Sample Type: (Unknown)



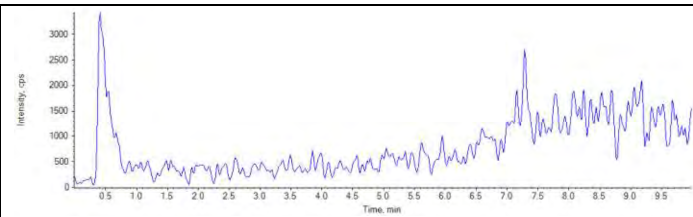
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



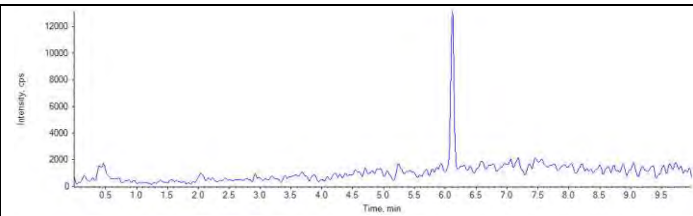
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



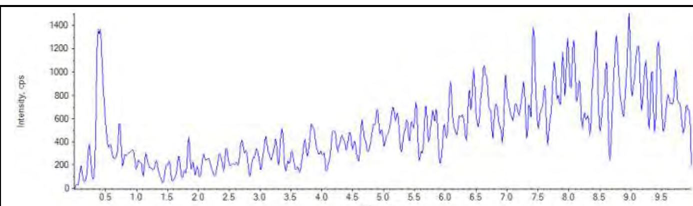
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



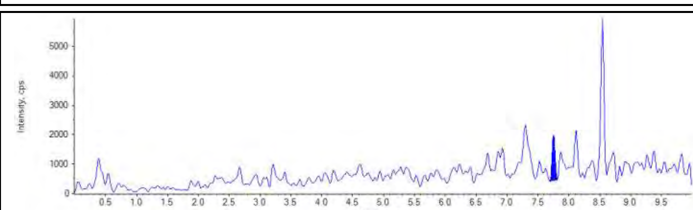
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.75 (7.74) min
Calculated Conc: 0.0512 ng/L
Area Ratio: 0.00128
Sample Type: (Unknown)



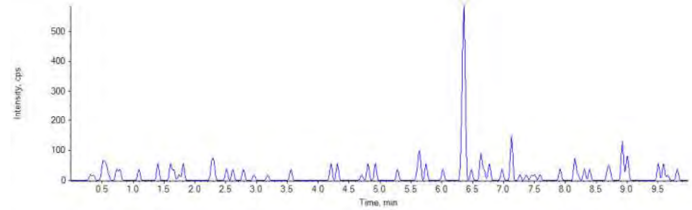
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



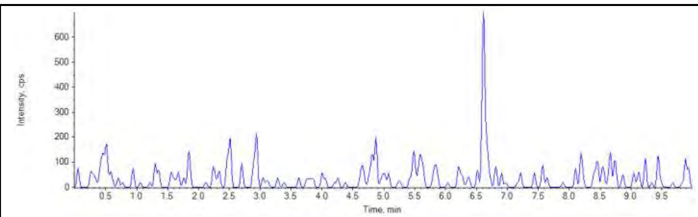
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



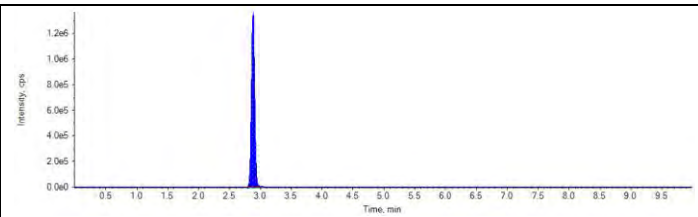
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min

Calculated Conc: 40.3 ng/L

Area Ratio: 1.26

Sample Type: (Unknown)



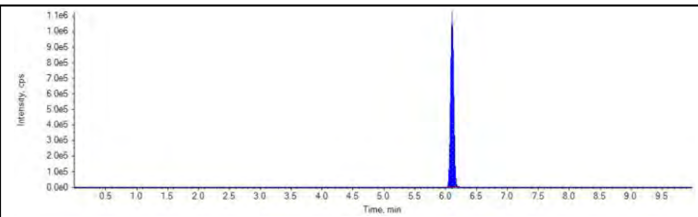
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min

Calculated Conc: 40.9 ng/L

Area Ratio: 0.937

Sample Type: (Unknown)



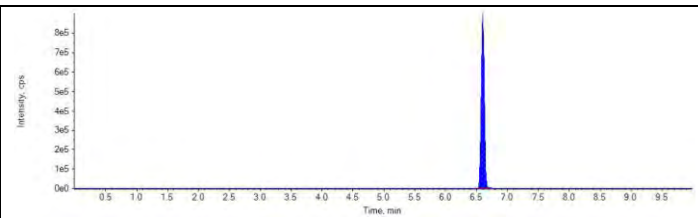
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 159. ng/L

Area Ratio: 0.814

Sample Type: (Unknown)



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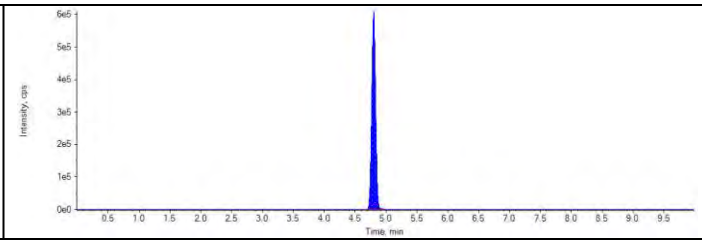
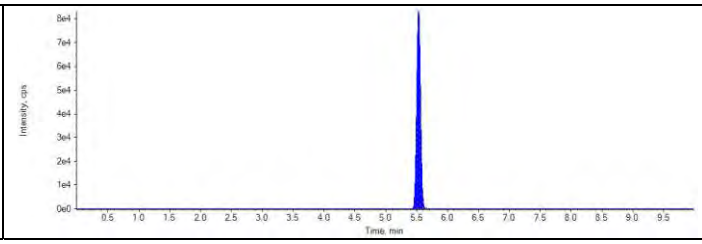
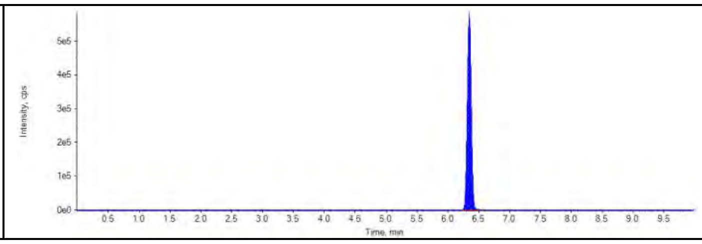
Sample ID	5907027~IOF241-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	16
Acquisition Date	2019/01/03 4:13:39 PM	**Dilution Factor**	0.00370
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injected to confirm IS recovery, reported		

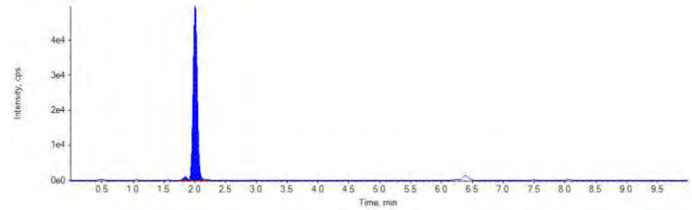
Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2670000.	4.80	1.00	-
MPFOS	368000.	5.53	1.00	-
D3-MeFOSAA IS	2550000.	6.35	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	239000	2.01	N/A	4.53	N/A
PFHxA 1	442000	2.90	N/A	4.55	N/A
PFHxS 1	1070000	4.07	N/A	36.9	N/A
PFHpA 1	172000	3.95	N/A	1.46	N/A
PFOA 1	275000	4.81	N/A	2.80	N/A
PFOS 1	1030000	5.54	N/A	58.5	N/A
PFNA 1	9230	5.52	N/A	0.169	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	3780	6.49	N/A	0.0631	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	3120000	2.89	N/A	37.4	N/A
13C2-PFDA	2250000	6.11	N/A	36.9	N/A
D5-EtFOSAA	1720000	6.60	N/A	132.	N/A

MPFOA (Internal Standard) RT (Exp. RT): 4.80(4.84) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 5.53(5.38) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
D3-MeFOSAA IS (Internal Standard) RT (Exp. RT): 6.35(6.43) min Concentration: 1.00 ng/L Sample Type: (Unknown)	

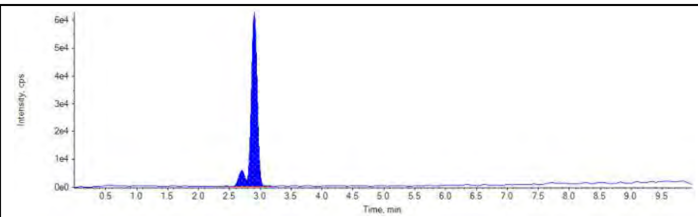
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.01 (1.85) min
Calculated Conc: 4.53 ng/L
Area Ratio: 0.650
Sample Type: (Unknown)



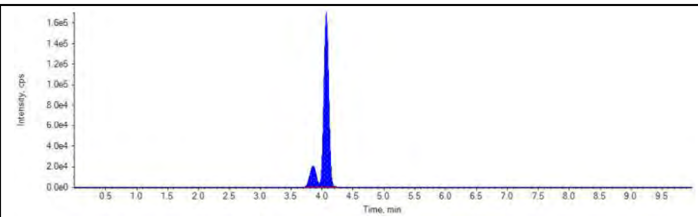
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 4.55 ng/L
Area Ratio: 0.166
Sample Type: (Unknown)



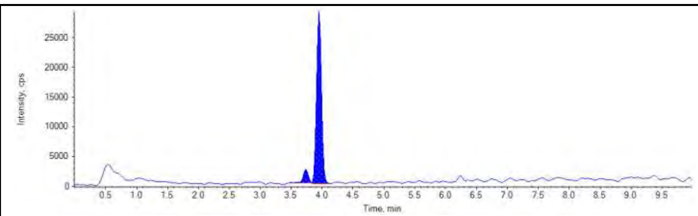
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.07 (4.00) min
Calculated Conc: 36.9 ng/L
Area Ratio: 2.90
Sample Type: (Unknown)



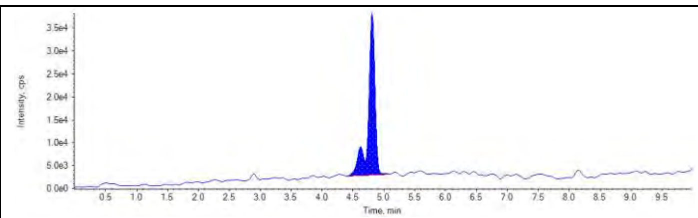
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 1.46 ng/L
Area Ratio: 0.0646
Sample Type: (Unknown)



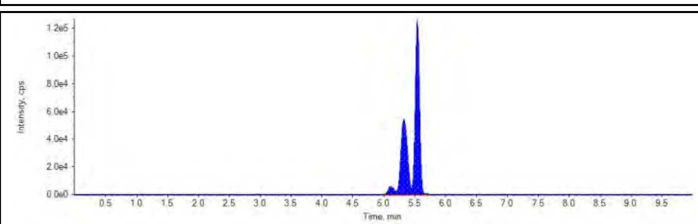
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 2.80 ng/L
Area Ratio: 0.103
Sample Type: (Unknown)



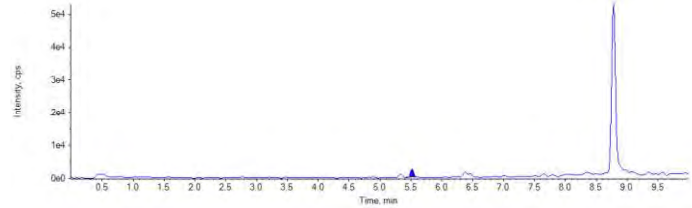
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 58.5 ng/L
Area Ratio: 2.81
Sample Type: (Unknown)



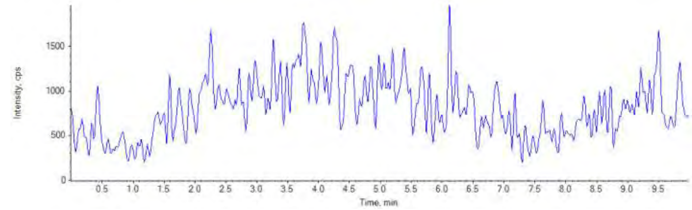
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT):	5.52 (5.49) min
Calculated Conc:	0.169 ng/L
Area Ratio:	0.00346
Sample Type:	(Unknown)



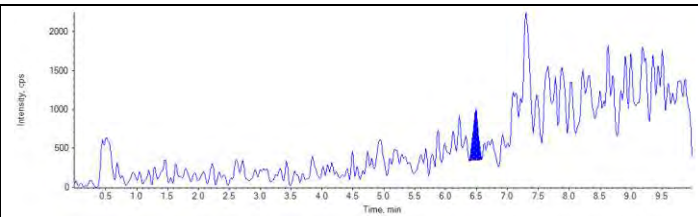
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT):	0.00 (6.07) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



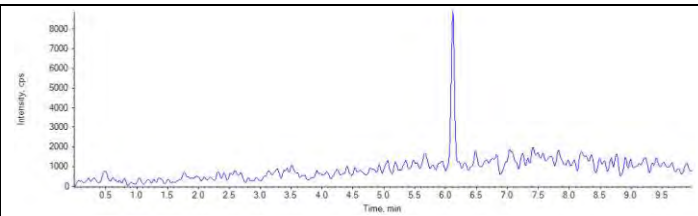
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT):	6.49 (6.62) min
Calculated Conc:	0.0631 ng/L
Area Ratio:	0.00142
Sample Type:	(Unknown)



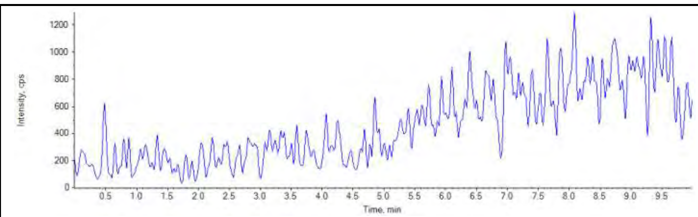
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT):	0.00 (7.04) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



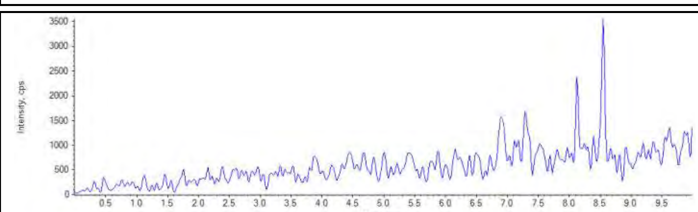
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT):	0.00 (7.38) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



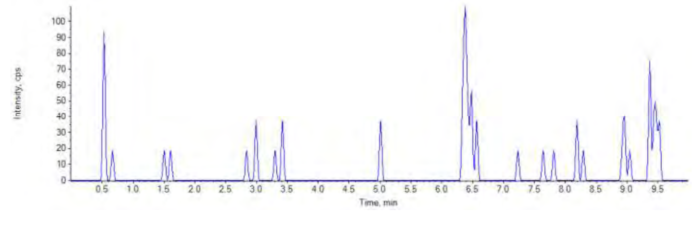
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT):	0.00 (7.74) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



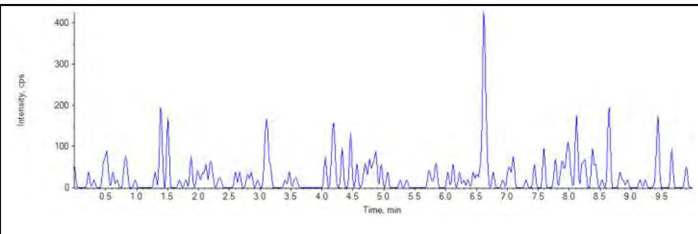
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



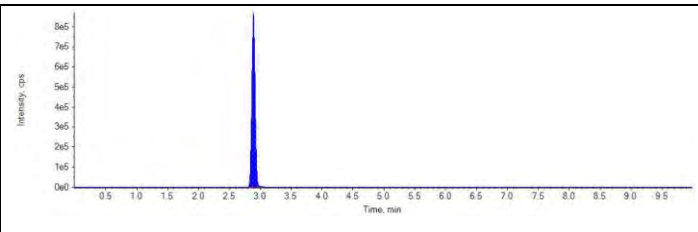
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



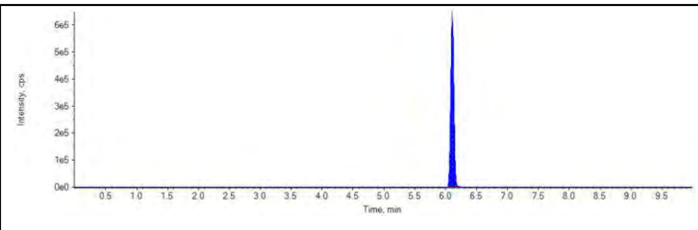
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min
Calculated Conc: 37.4 ng/L
Area Ratio: 1.17
Sample Type: (Unknown)



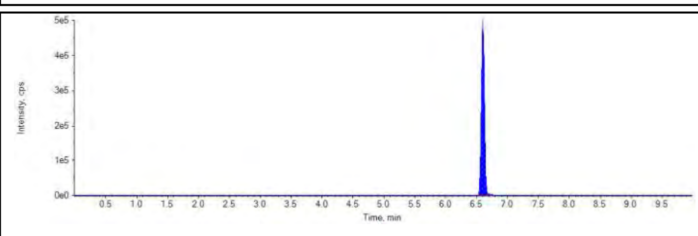
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min
Calculated Conc: 36.9 ng/L
Area Ratio: 0.845
Sample Type: (Unknown)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min
Calculated Conc: 132. ng/L
Area Ratio: 0.673
Sample Type: (Unknown)



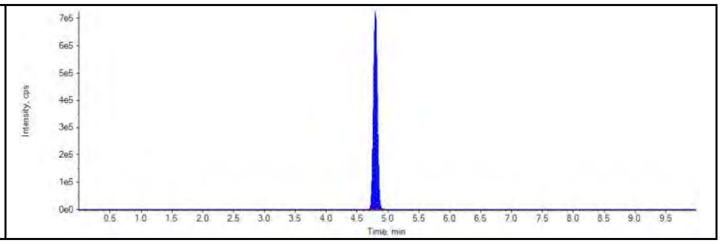
Sample ID	5907027~IOF241-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	16
Acquisition Date	2019/01/04 3:18:11 PM	**Dilution Factor**	0.00370
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injection, not reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	3200000.	4.79	1.00	-
MPFOS	437000.	5.53	1.00	-
D3-MeFOSAA IS	3140000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	270000	2.00	N/A	4.31	N/A
PFHxA 1	499000	2.90	N/A	4.27	N/A
PFHxS 1	1180000	4.06	N/A	34.4	N/A
PFHpA 1	218000	3.95	N/A	1.54	N/A
PFOA 1	327000	4.81	N/A	2.78	N/A
PFOS 1	1290000	5.54	N/A	61.5	N/A
PFNA 1	15900	5.51	N/A	0.241	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	4150000	2.88	N/A	41.4	N/A
13C2-PFDA	2800000	6.11	N/A	38.2	N/A
D5-EtFOSAA	2280000	6.60	N/A	142.	N/A

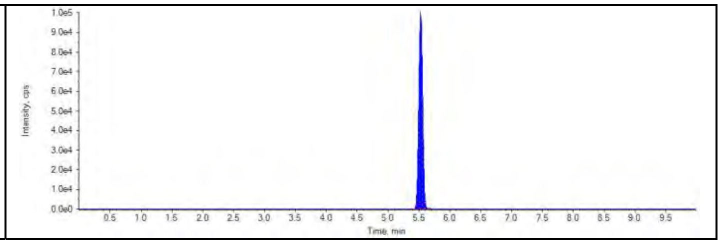
MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



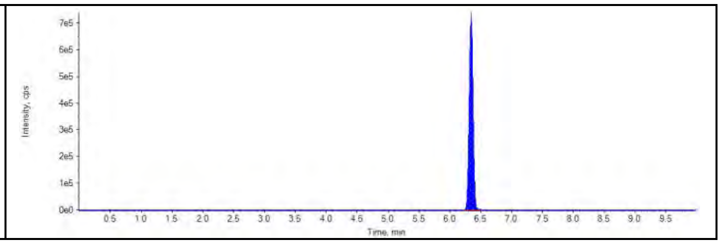
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



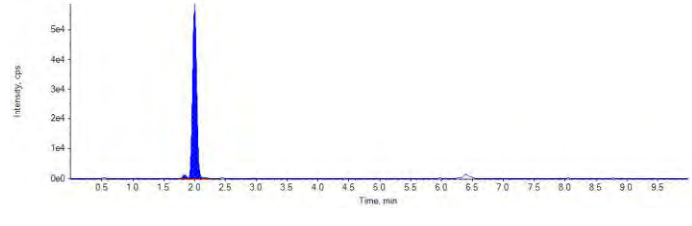
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



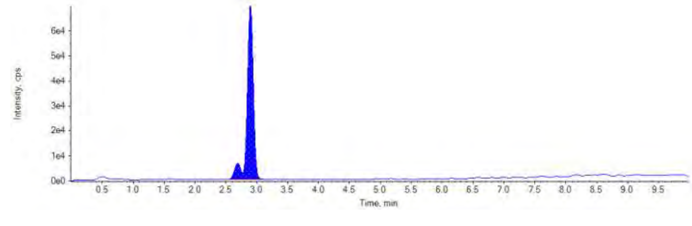
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 4.31 ng/L
Area Ratio: 0.618
Sample Type: (Unknown)



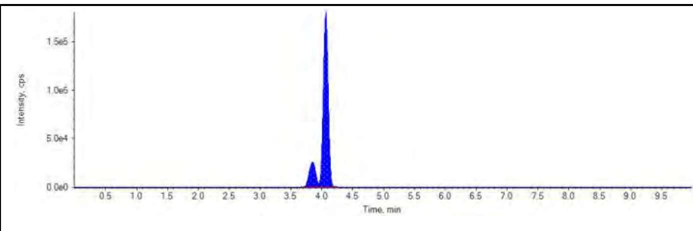
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 4.27 ng/L
Area Ratio: 0.156
Sample Type: (Unknown)



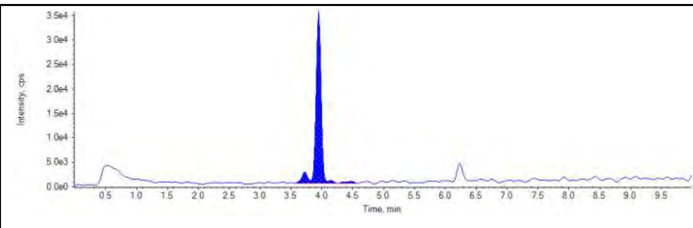
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min
Calculated Conc: 34.4 ng/L
Area Ratio: 2.70
Sample Type: (Unknown)



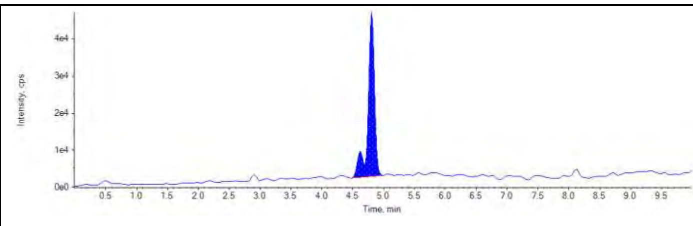
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 1.54 ng/L
Area Ratio: 0.0682
Sample Type: (Unknown)



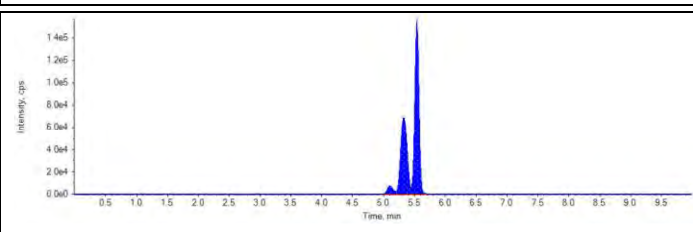
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 2.78 ng/L
Area Ratio: 0.102
Sample Type: (Unknown)



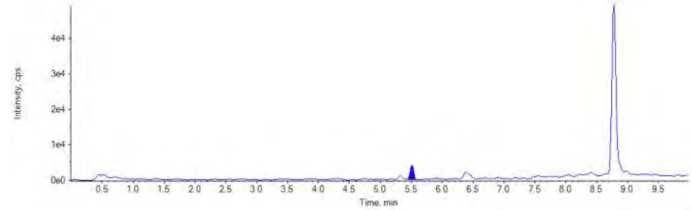
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 61.5 ng/L
Area Ratio: 2.95
Sample Type: (Unknown)



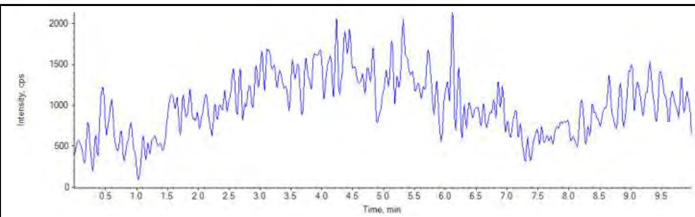
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.51 (5.49) min
Calculated Conc: 0.241 ng/L
Area Ratio: 0.00495
Sample Type: (Unknown)



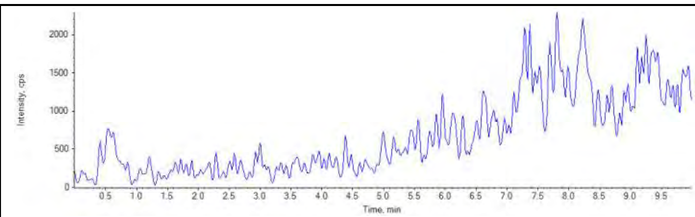
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



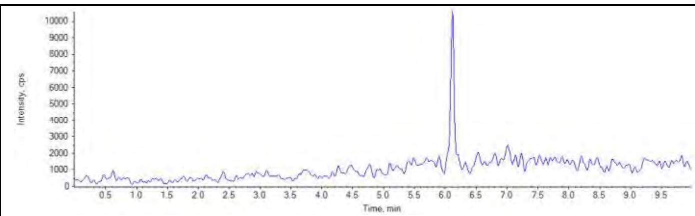
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



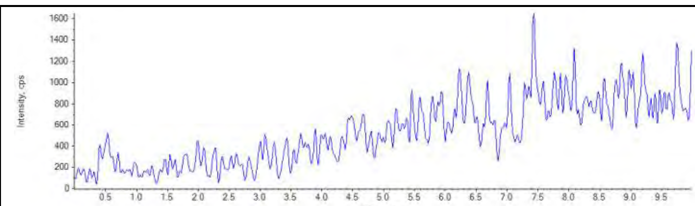
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



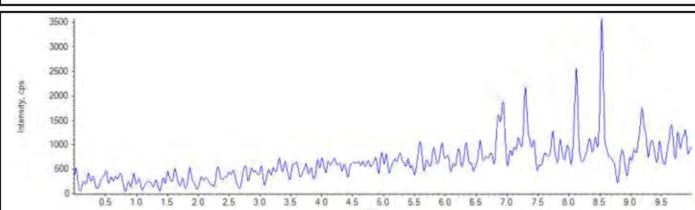
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



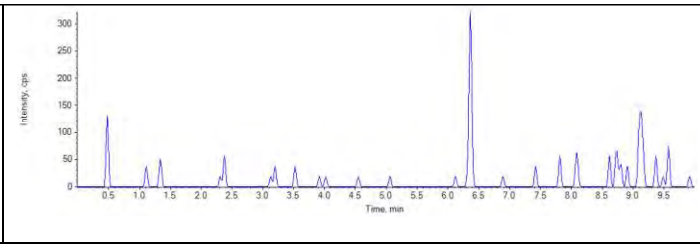
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



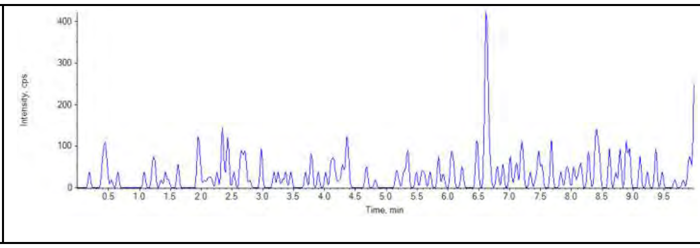
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



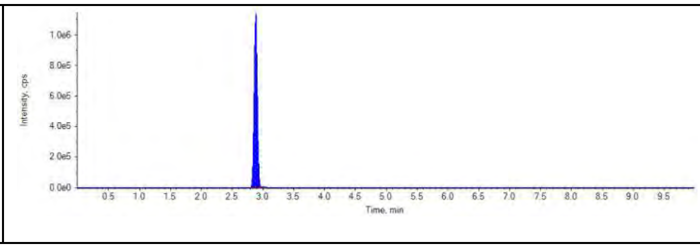
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min

Calculated Conc: 41.4 ng/L

Area Ratio: 1.30

Sample Type: (Unknown)



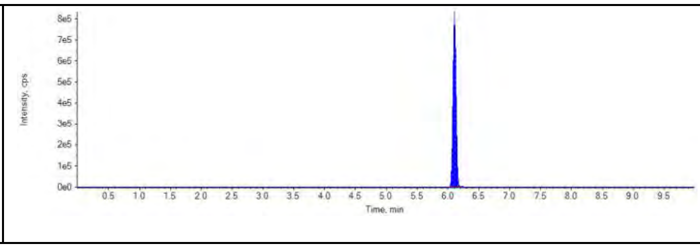
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 38.2 ng/L

Area Ratio: 0.875

Sample Type: (Unknown)



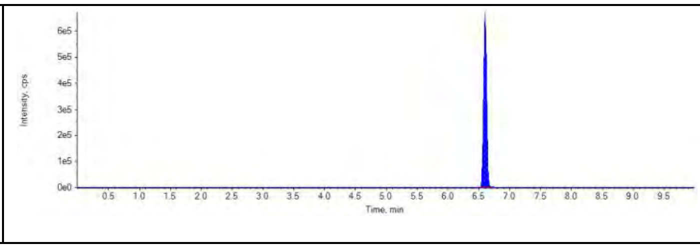
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 142. ng/L

Area Ratio: 0.725

Sample Type: (Unknown)



Sample ID	5907027~IOF242-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	17
Acquisition Date	2019/01/03 4:29:15 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injected to confirm IS recovery, reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	4150000.	4.79	1.00	-
MPFOS	512000.	5.53	1.00	-
D3-MeFOSAA IS	3710000.	6.35	1.00	-

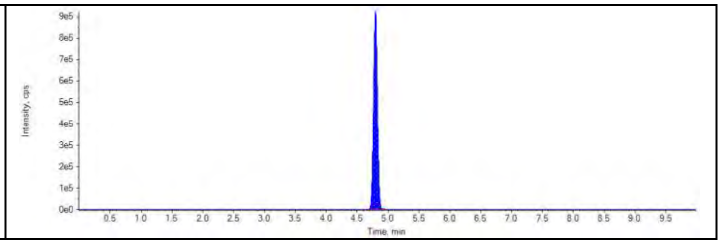
Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	201000	2.00	N/A	2.96	N/A
PFHxA 1	628000	2.90	N/A	4.49	N/A
PFHxS 1	851000	4.07	N/A	22.9	N/A
PFHpA 1	225000	3.95	N/A	1.32	N/A
PFOA 1	287000	4.81	N/A	2.03	N/A
PFOS 1	953000	5.54	N/A	41.9	N/A
PFNA 1	17800	5.51	N/A	0.226	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	3810	6.63	N/A	0.0443	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	4790	7.42	N/A	0.0537	N/A
PFTeDA 1	5230	7.74	N/A	0.0503	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	4930000	2.89	N/A	38.0	N/A
13C2-PFDA	3410000	6.11	N/A	35.9	N/A
D5-EtFOSAA	2870000	6.60	N/A	152.	N/A

MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min

Concentration: 1.00 ng/L

Sample Type: (Unknown)

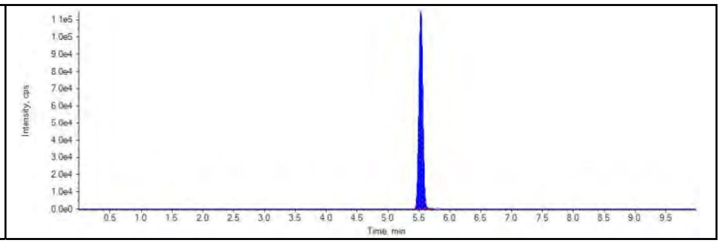


MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min

Concentration: 1.00 ng/L

Sample Type: (Unknown)

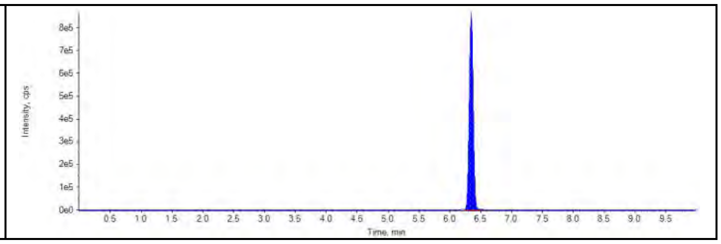


D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.35(6.43) min

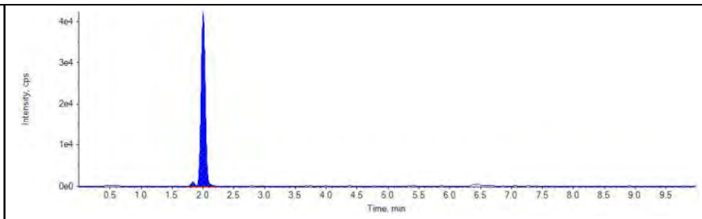
Concentration: 1.00 ng/L

Sample Type: (Unknown)



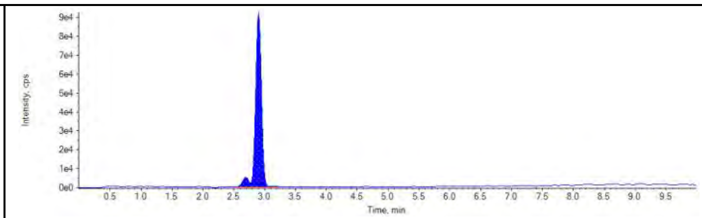
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 2.96 ng/L
Area Ratio: 0.393
Sample Type: (Unknown)



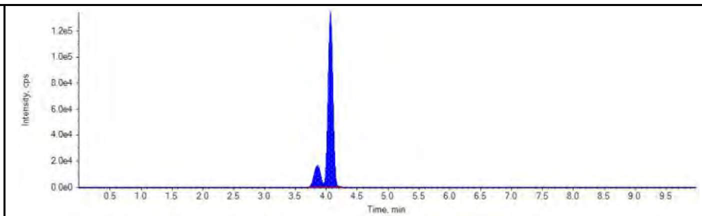
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 4.49 ng/L
Area Ratio: 0.151
Sample Type: (Unknown)



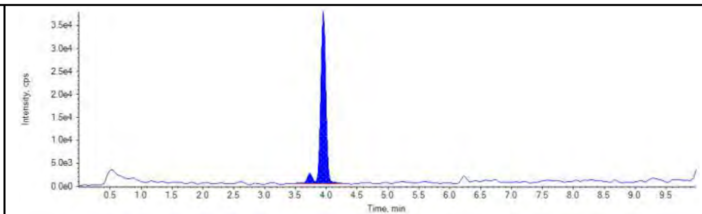
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.07 (4.00) min
Calculated Conc: 22.9 ng/L
Area Ratio: 1.66
Sample Type: (Unknown)



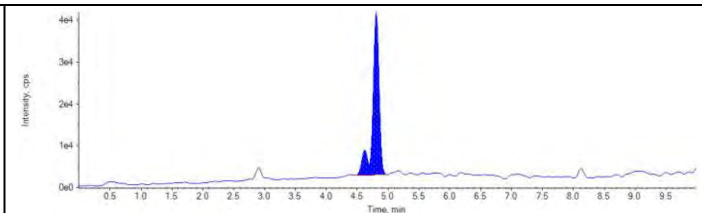
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 1.32 ng/L
Area Ratio: 0.0543
Sample Type: (Unknown)



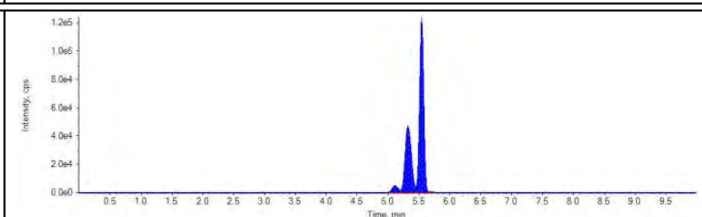
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 2.03 ng/L
Area Ratio: 0.0692
Sample Type: (Unknown)



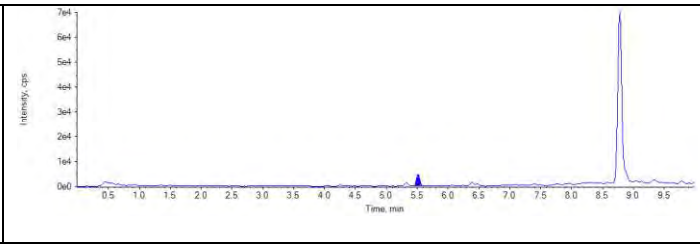
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 41.9 ng/L
Area Ratio: 1.86
Sample Type: (Unknown)



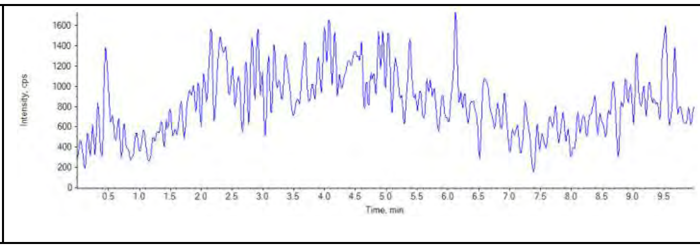
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT):	5.51 (5.49) min
Calculated Conc:	0.226 ng/L
Area Ratio:	0.00429
Sample Type:	(Unknown)



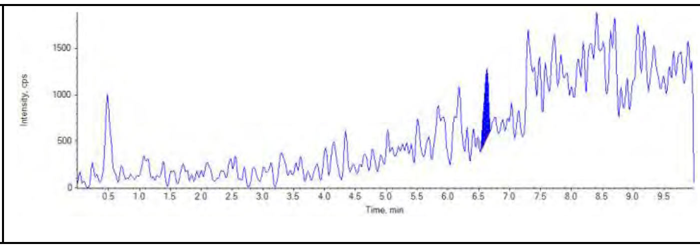
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT):	0.00 (6.07) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



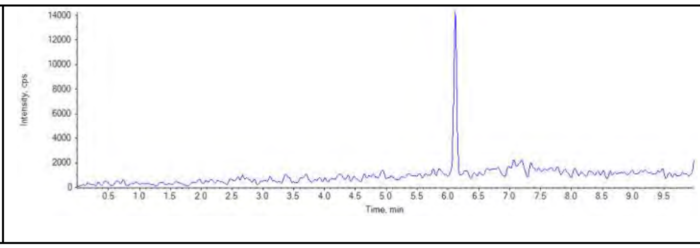
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT):	6.63 (6.62) min
Calculated Conc:	0.0443 ng/L
Area Ratio:	0.000919
Sample Type:	(Unknown)



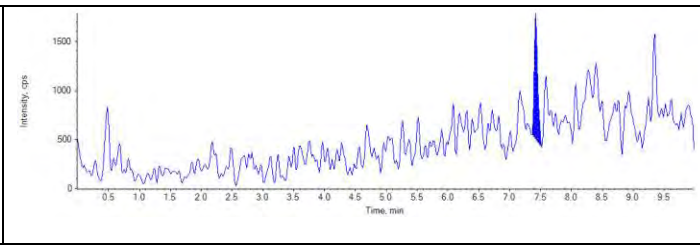
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT):	0.00 (7.04) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



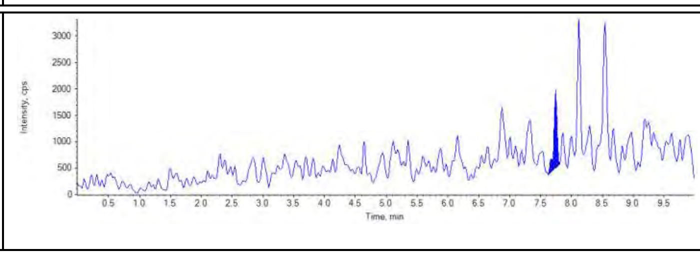
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT):	7.42 (7.38) min
Calculated Conc:	0.0537 ng/L
Area Ratio:	0.00115
Sample Type:	(Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT):	7.74 (7.74) min
Calculated Conc:	0.0503 ng/L
Area Ratio:	0.00126
Sample Type:	(Unknown)



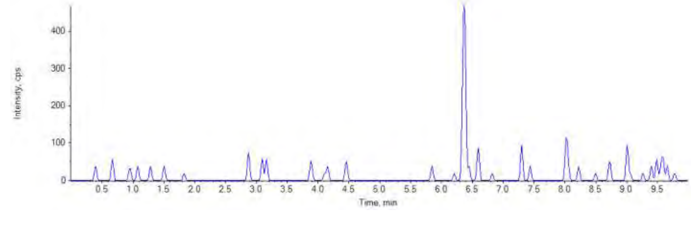
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



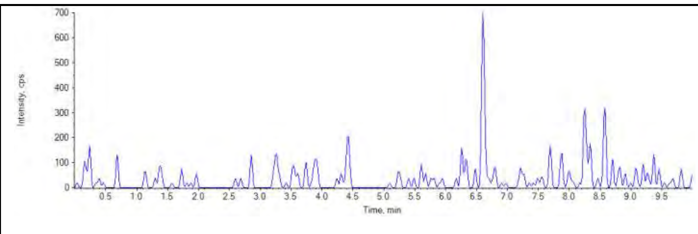
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



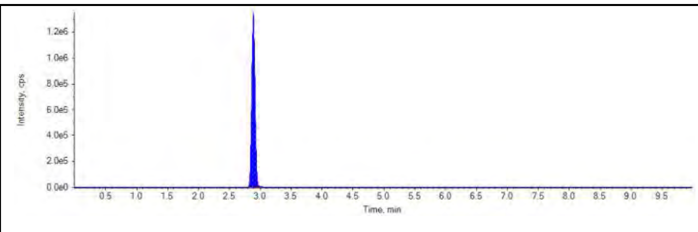
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 38.0 ng/L

Area Ratio: 1.19

Sample Type: (Unknown)



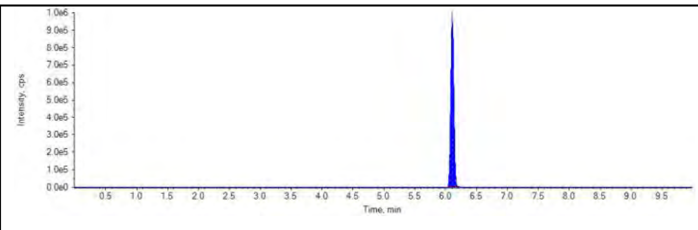
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 35.9 ng/L

Area Ratio: 0.822

Sample Type: (Unknown)



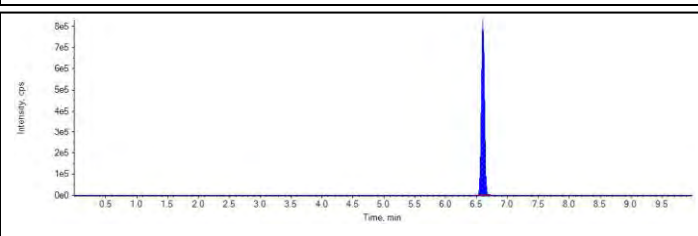
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 152. ng/L

Area Ratio: 0.774

Sample Type: (Unknown)



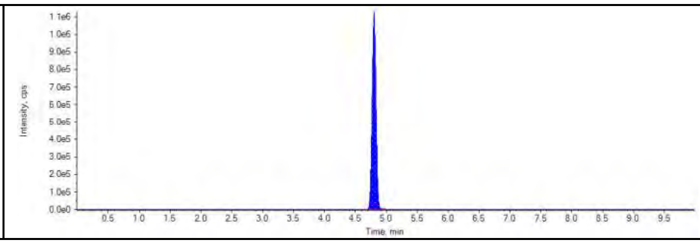
Sample ID	5907027~IOF242-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	17
Acquisition Date	2019/01/04 3:50:07 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injection, not reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	4930000.	4.80	1.00	-
MPFOS	675000.	5.53	1.00	-
D3-MeFOSAA IS	4480000.	6.35	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	270000	2.01	N/A	3.02	N/A
PFHxA 1	764000	2.91	N/A	4.60	N/A
PFHxS 1	1130000	4.07	N/A	23.0	N/A
PFHpA 1	292000	3.95	N/A	1.45	N/A
PFOA 1	353000	4.81	N/A	2.11	N/A
PFOS 1	1220000	5.55	N/A	40.8	N/A
PFNA 1	21100	5.52	N/A	0.225	N/A
PFDA 1	5600	6.12	N/A	0.0440	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	3280	7.43	N/A	0.0310	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	6300000	2.89	N/A	40.9	N/A
13C2-PFDA	5160000	6.11	N/A	45.7	N/A
D5-EtFOSAA	3170000	6.61	N/A	139.	N/A

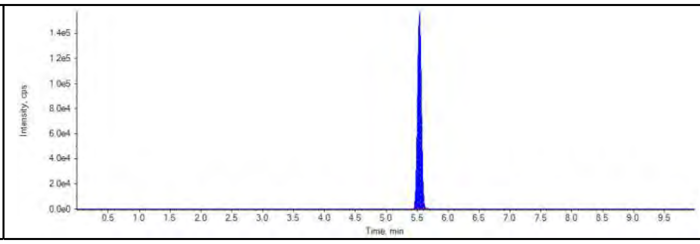
MPFOA (Internal Standard)

RT (Exp. RT): 4.80(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



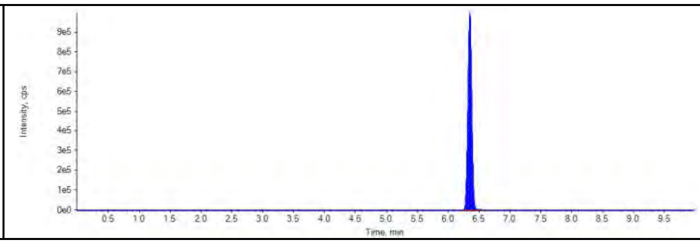
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



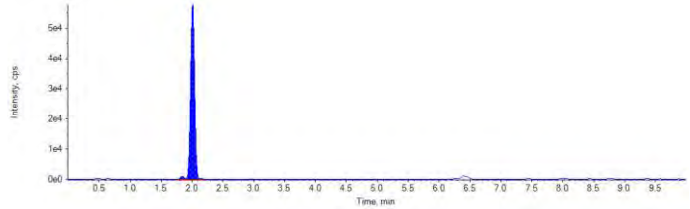
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.35(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



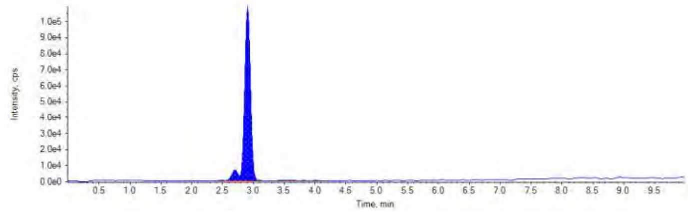
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	2.01 (1.85) min
Calculated Conc:	3.02 ng/L
Area Ratio:	0.401
Sample Type:	(Unknown)



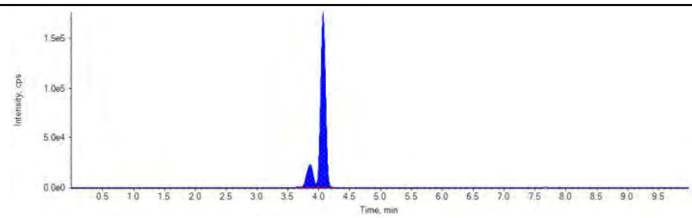
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	2.91 (2.97) min
Calculated Conc:	4.60 ng/L
Area Ratio:	0.155
Sample Type:	(Unknown)



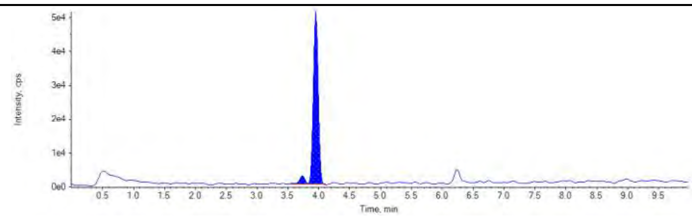
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	4.07 (4.00) min
Calculated Conc:	23.0 ng/L
Area Ratio:	1.67
Sample Type:	(Unknown)



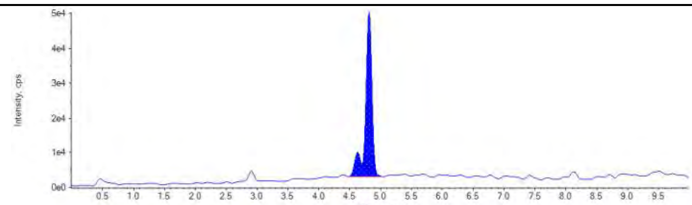
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	3.95 (3.91) min
Calculated Conc:	1.45 ng/L
Area Ratio:	0.0593
Sample Type:	(Unknown)



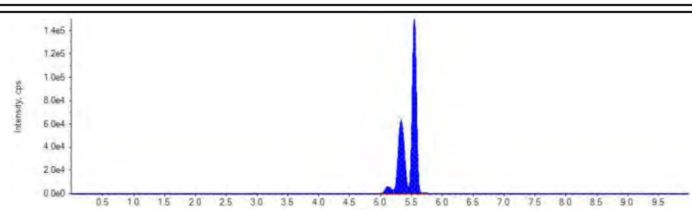
PFOA 1 (413.100/369.000 Da)

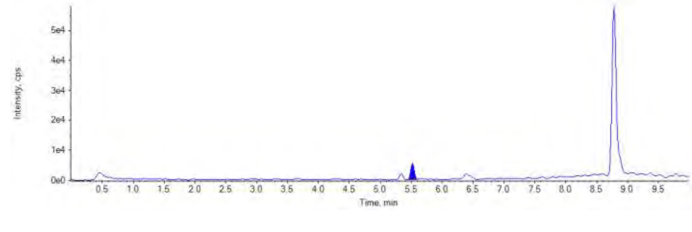
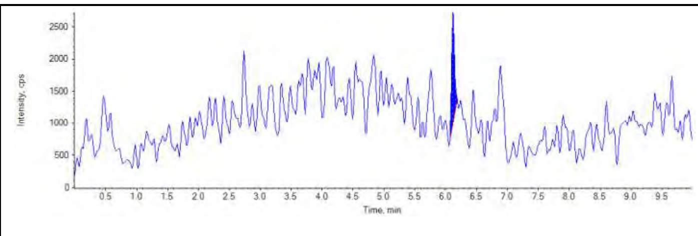
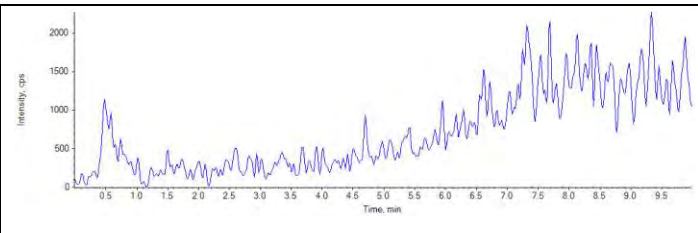
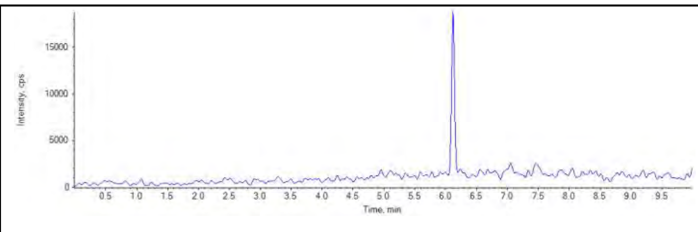
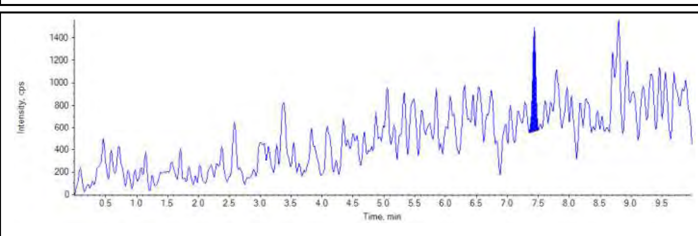
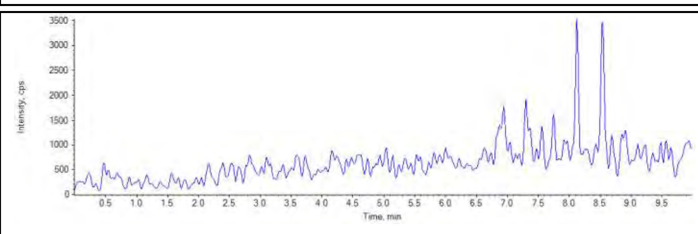
RT (Exp. RT):	4.81 (4.89) min
Calculated Conc:	2.11 ng/L
Area Ratio:	0.0717
Sample Type:	(Unknown)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	5.55 (5.50) min
Calculated Conc:	40.8 ng/L
Area Ratio:	1.81
Sample Type:	(Unknown)



PFNA 1 (462.900/419.200 Da)		
RT (Exp. RT):	5.52 (5.49) min	
Calculated Conc:	0.225 ng/L	
Area Ratio:	0.00427	
Sample Type:	(Unknown)	
PFDA 1 (513.000/469.100 Da)		
RT (Exp. RT):	6.12 (6.07) min	
Calculated Conc:	0.0440 ng/L	
Area Ratio:	0.00114	
Sample Type:	(Unknown)	
PFUnA 1 (562.900/519.000 Da)		
RT (Exp. RT):	0.00 (6.62) min	
Calculated Conc:	N/A ng/L	
Area Ratio:	0.00	
Sample Type:	(Unknown)	
PFDoA 1 (612.900/569.000 Da)		
RT (Exp. RT):	0.00 (7.04) min	
Calculated Conc:	N/A ng/L	
Area Ratio:	0.00	
Sample Type:	(Unknown)	
PFTrDA 1 (663.000/619.000 Da)		
RT (Exp. RT):	7.43 (7.38) min	
Calculated Conc:	0.0310 ng/L	
Area Ratio:	0.000666	
Sample Type:	(Unknown)	
PFTeDA 1 (713.000/669.000 Da)		
RT (Exp. RT):	0.00 (7.74) min	
Calculated Conc:	N/A ng/L	
Area Ratio:	0.00	
Sample Type:	(Unknown)	

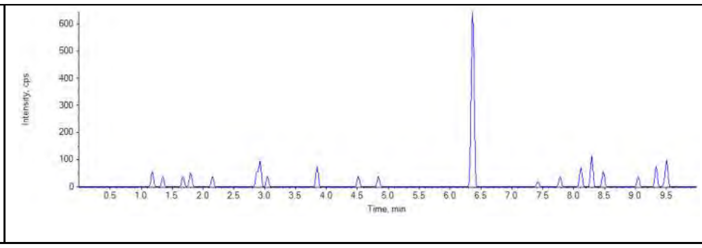
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



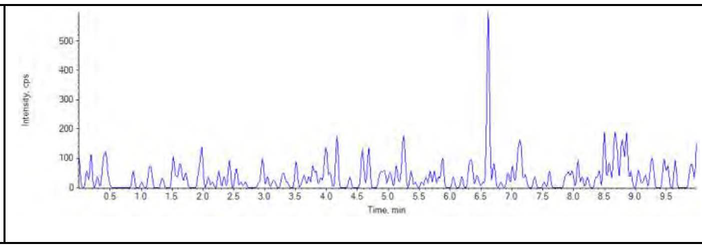
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



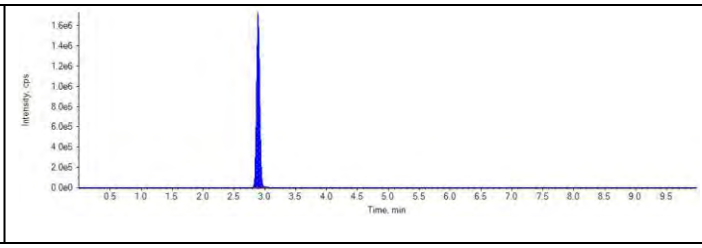
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 40.9 ng/L

Area Ratio: 1.28

Sample Type: (Unknown)



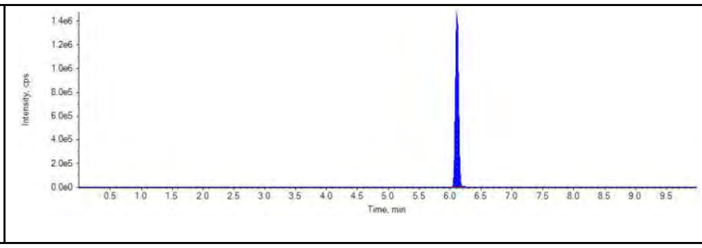
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 45.7 ng/L

Area Ratio: 1.05

Sample Type: (Unknown)



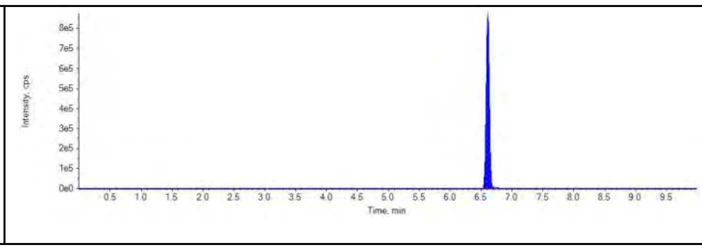
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.61 (6.68) min

Calculated Conc: 139. ng/L

Area Ratio: 0.707

Sample Type: (Unknown)



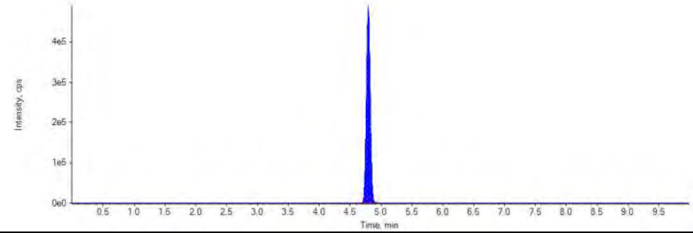
Sample ID	5907027~IOF243-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	18
Acquisition Date	2019/01/03 4:44:50 PM	**Dilution Factor**	0.00350
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2140000.	4.79	1.00	-
MPFOS	297000.	5.52	1.00	-
D3-MeFOSAA IS	1830000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	120000	2.00	N/A	2.66	N/A
PFHxA 1	308000	2.90	N/A	3.73	N/A
PFHxS 1	471000	4.06	N/A	19.1	N/A
PFHpA 1	142000	3.95	N/A	1.42	N/A
PFOA 1	148000	4.81	N/A	1.77	N/A
PFOS 1	460000	5.54	N/A	30.5	N/A
PFNA 1	9230	5.51	N/A	0.199	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	2420000	2.89	N/A	36.1	N/A
13C2-PFDA	1660000	6.10	N/A	33.8	N/A
D5-EtFOSAA	1300000	6.60	N/A	139.	N/A

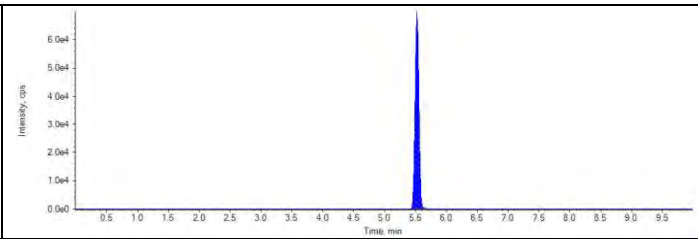
MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



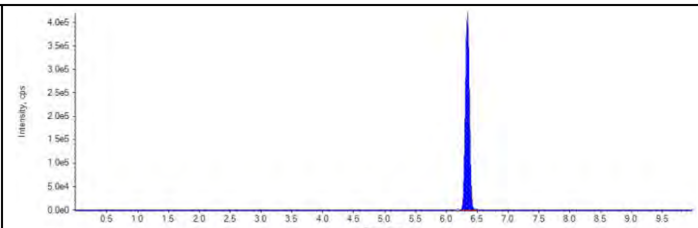
MPFOS (Internal Standard)

RT (Exp. RT): 5.52(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



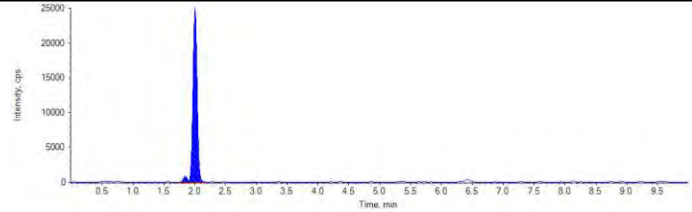
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



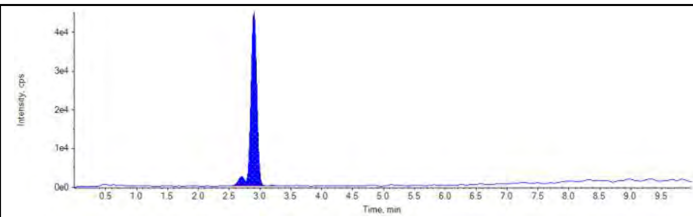
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 2.66 ng/L
Area Ratio: 0.404
Sample Type: (Unknown)



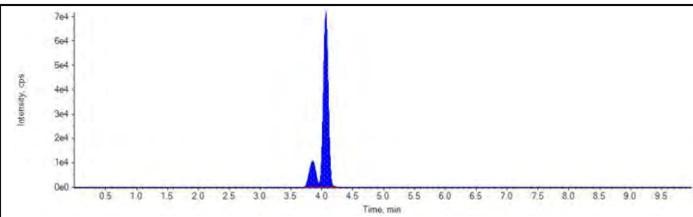
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 3.73 ng/L
Area Ratio: 0.144
Sample Type: (Unknown)



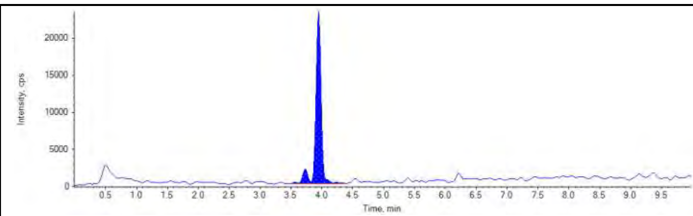
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min
Calculated Conc: 19.1 ng/L
Area Ratio: 1.59
Sample Type: (Unknown)



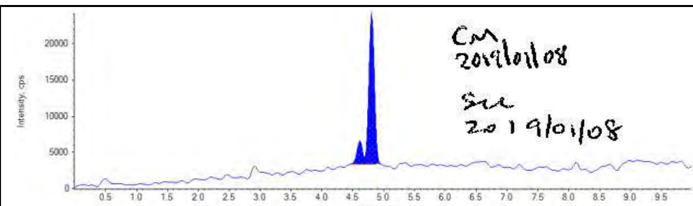
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 1.42 ng/L
Area Ratio: 0.0663
Sample Type: (Unknown)



PFOA 1 (413.100/369.000 Da)

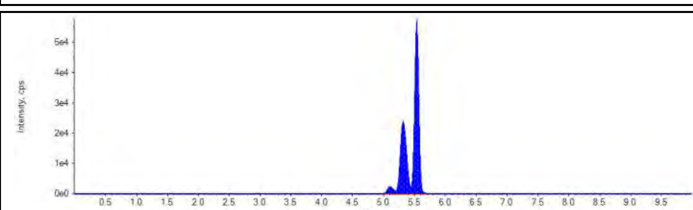
RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 1.77 ng/L
Area Ratio: 0.0690
Sample Type: (Unknown)



CM
2019/01/08
SC
2019/01/08

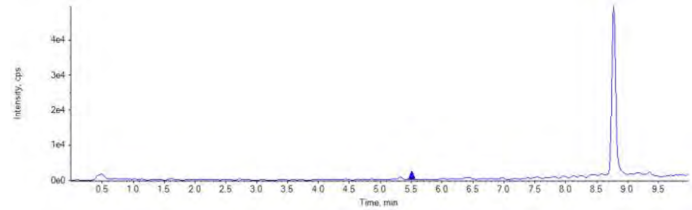
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 30.5 ng/L
Area Ratio: 1.55
Sample Type: (Unknown)



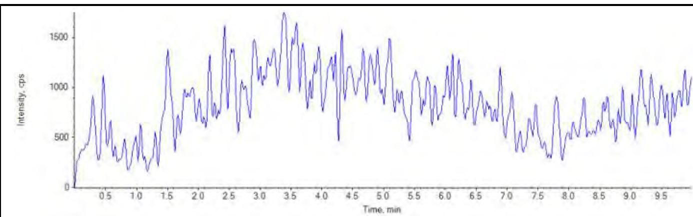
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT):	5.51 (5.49) min
Calculated Conc:	0.199 ng/L
Area Ratio:	0.00431
Sample Type:	(Unknown)



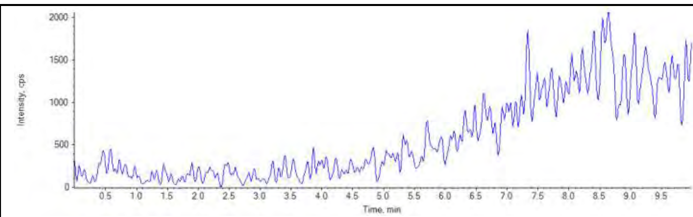
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT):	0.00 (6.07) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



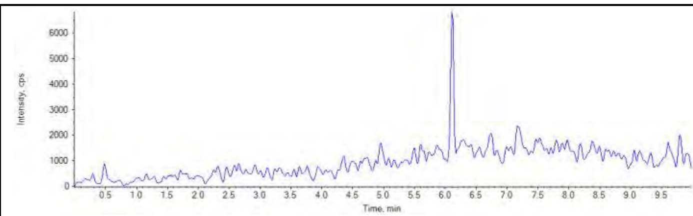
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT):	0.00 (6.62) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



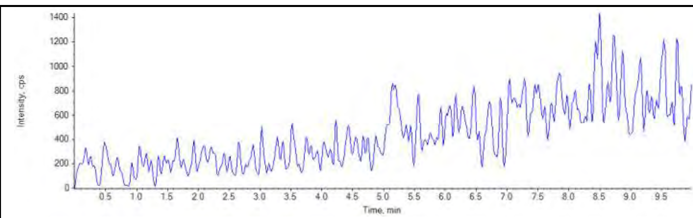
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT):	0.00 (7.04) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



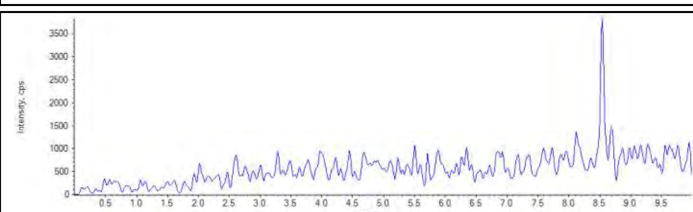
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT):	0.00 (7.38) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT):	0.00 (7.74) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



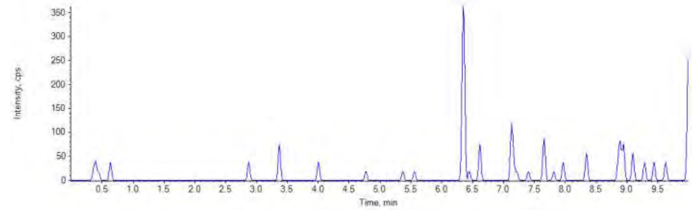
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



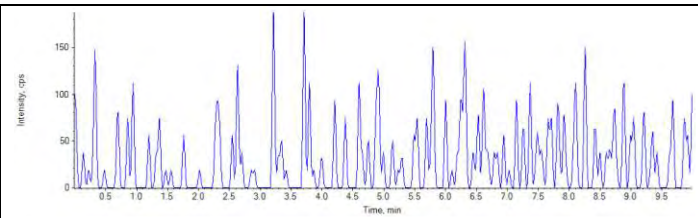
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



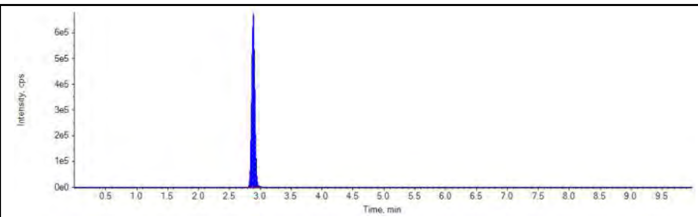
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 36.1 ng/L

Area Ratio: 1.13

Sample Type: (Unknown)



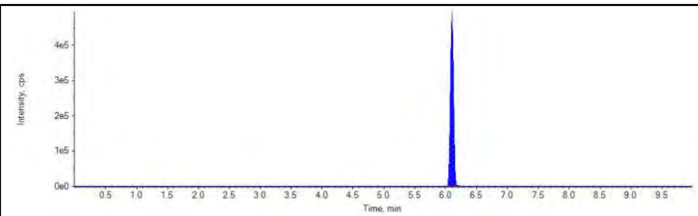
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min

Calculated Conc: 33.8 ng/L

Area Ratio: 0.777

Sample Type: (Unknown)



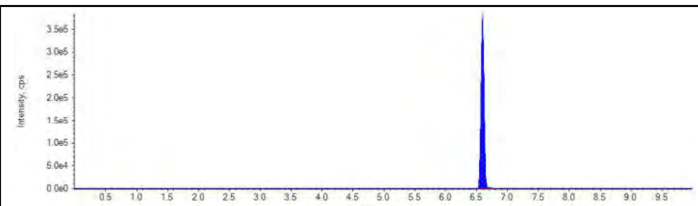
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 139. ng/L

Area Ratio: 0.713

Sample Type: (Unknown)



Sample ID	5907027~IOF243-01	Injection Volume (µL)	1.5
Sample Type	Unknown	Injection Vial	18
Acquisition Date	2019/01/03 4:44:50 PM	Dilution Factor	0.00350
Acquisition Method	PFC_Water_EPA537.dam	Instrument Name	LCMS03
Project	Enviro\PFOS	Algorithm Used	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2140000.	4.79	1.00	-
MPFOS	297000.	5.52	1.00	-
D3-MeFOSAA IS	1830000.	6.34	1.00	-

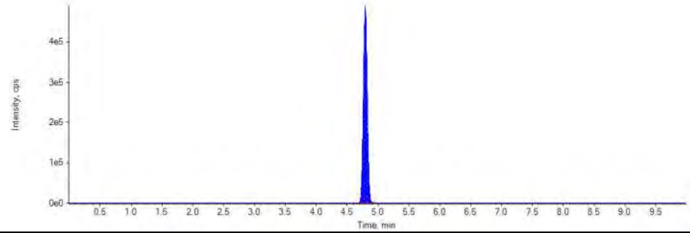
Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	120000	2.00	N/A	2.66	N/A
PFHxA 1	308000	2.90	N/A	3.73	N/A
PFHxS 1	471000	4.06	N/A	19.1	N/A
PFHpA 1	142000	3.95	N/A	1.42	N/A
PFOA 1	179000	4.81	N/A	2.15	N/A
PFOS 1	460000	5.54	N/A	30.5	N/A
PFNA 1	9230	5.51	N/A	0.199	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	2420000	2.89	N/A	36.1	N/A
13C2-PFDA	1660000	6.10	N/A	33.8	N/A
D5-EtFOSAA	1300000	6.60	N/A	139.	N/A

MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min

Concentration: 1.00 ng/L

Sample Type: (Unknown)

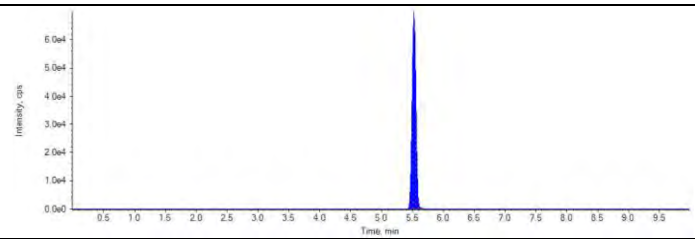


MPFOS (Internal Standard)

RT (Exp. RT): 5.52(5.38) min

Concentration: 1.00 ng/L

Sample Type: (Unknown)

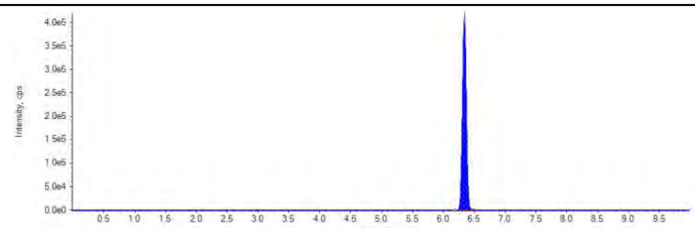


D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min

Concentration: 1.00 ng/L

Sample Type: (Unknown)



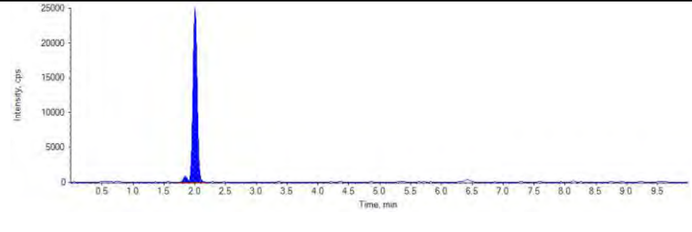
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min

Calculated Conc: 2.66 ng/L

Area Ratio: 0.404

Sample Type: (Unknown)



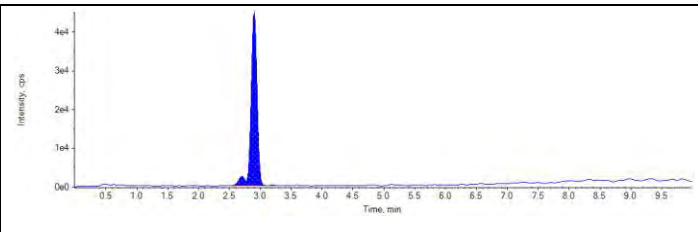
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min

Calculated Conc: 3.73 ng/L

Area Ratio: 0.144

Sample Type: (Unknown)



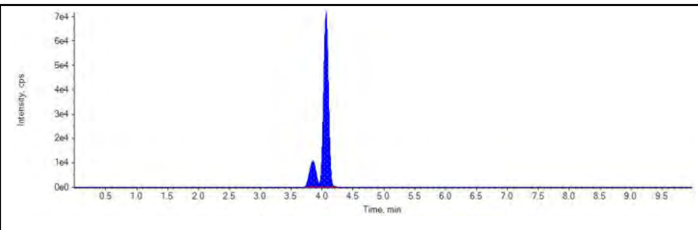
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min

Calculated Conc: 19.1 ng/L

Area Ratio: 1.59

Sample Type: (Unknown)



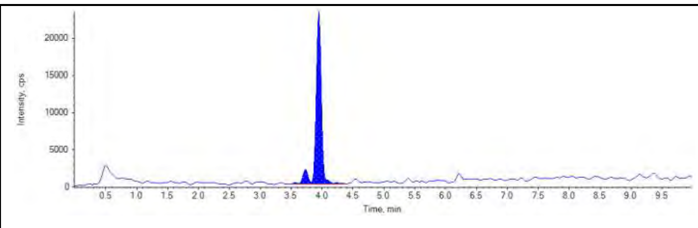
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min

Calculated Conc: 1.42 ng/L

Area Ratio: 0.0663

Sample Type: (Unknown)



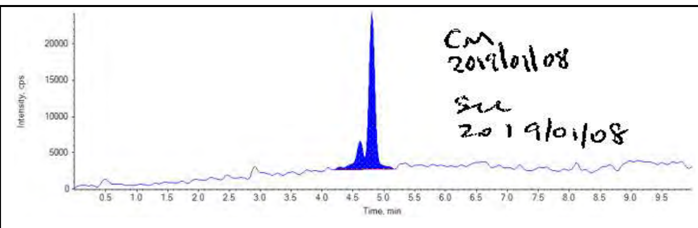
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min

Calculated Conc: 2.15 ng/L

Area Ratio: 0.0837

Sample Type: (Unknown)



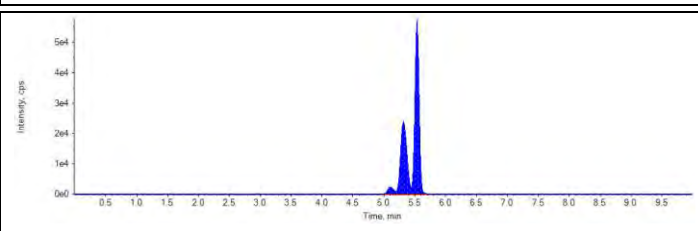
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min

Calculated Conc: 30.5 ng/L

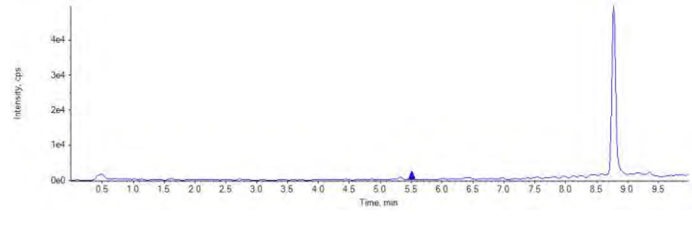
Area Ratio: 1.55

Sample Type: (Unknown)



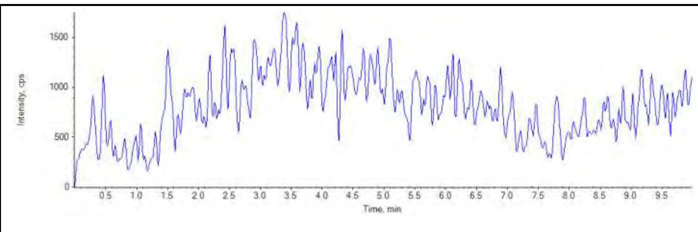
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.51 (5.49) min
Calculated Conc: 0.199 ng/L
Area Ratio: 0.00431
Sample Type: (Unknown)



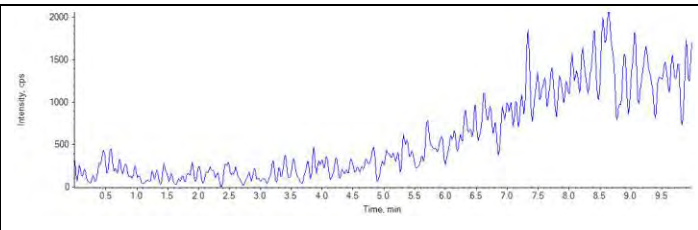
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



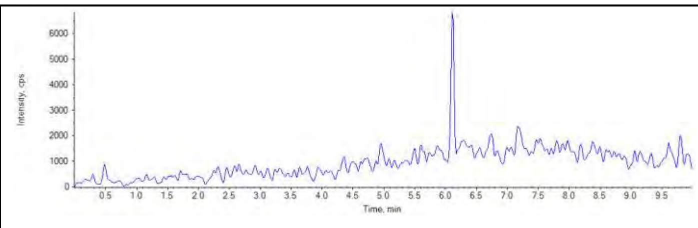
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



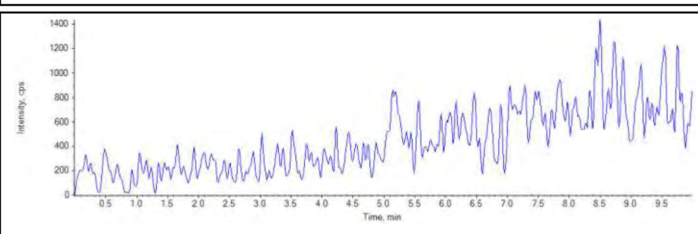
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



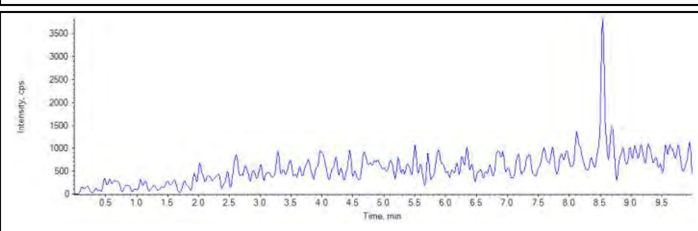
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



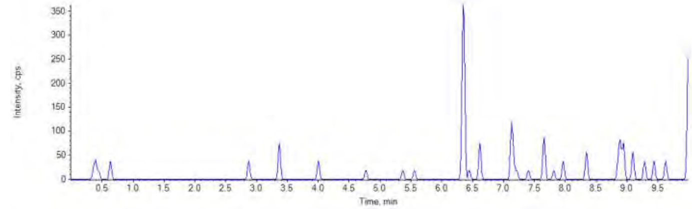
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



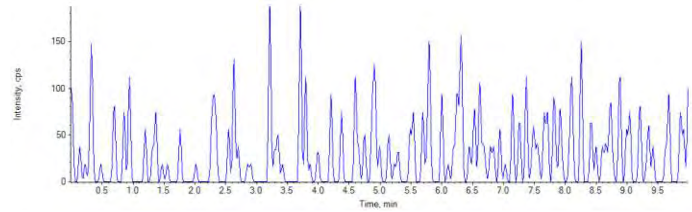
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT):	0.00 (6.29) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



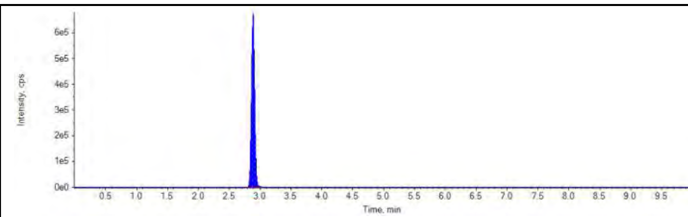
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT):	0.00 (6.66) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



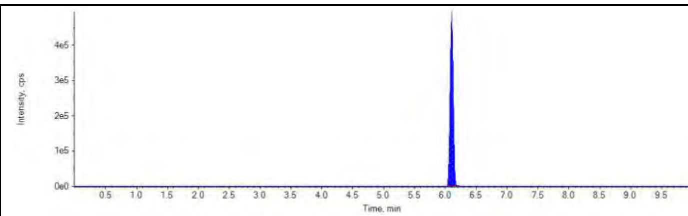
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT):	2.89 (2.96) min
Calculated Conc:	36.1 ng/L
Area Ratio:	1.13
Sample Type:	(Unknown)



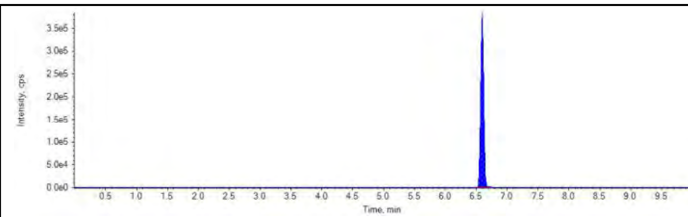
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT):	6.10 (6.19) min
Calculated Conc:	33.8 ng/L
Area Ratio:	0.777
Sample Type:	(Unknown)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT):	6.60 (6.68) min
Calculated Conc:	139. ng/L
Area Ratio:	0.713
Sample Type:	(Unknown)



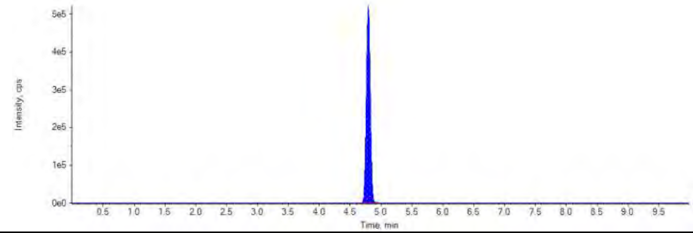
Sample ID	5907027~IOF244-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	19
Acquisition Date	2019/01/03 5:00:26 PM	**Dilution Factor**	0.00360
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2300000.	4.79	1.00	-
MPFOS	309000.	5.53	1.00	-
D3-MeFOSAA IS	2320000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	14200	2.00	N/A	0.311	N/A
PFHxA 1	119000	2.90	N/A	1.38	N/A
PFHxS 1	32300	4.06	N/A	1.29	N/A
PFHpA 1	38900	3.94	N/A	0.372	N/A
PFOA 1	62500	4.81	N/A	0.720	N/A
PFOS 1	29000	5.54	N/A	1.90	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	2980000	2.88	N/A	41.5	N/A
13C2-PFDA	2020000	6.10	N/A	38.4	N/A
D5-EtFOSAA	1680000	6.60	N/A	142.	N/A

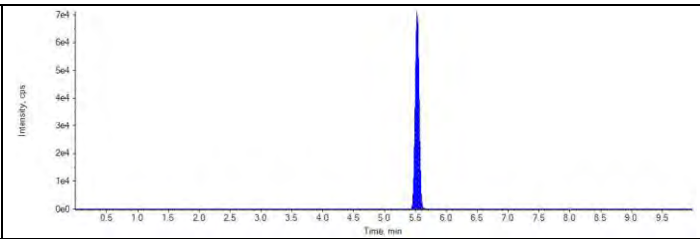
MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



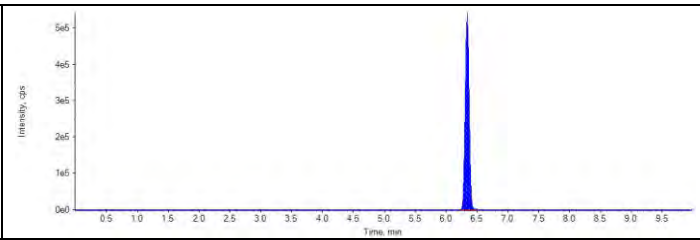
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



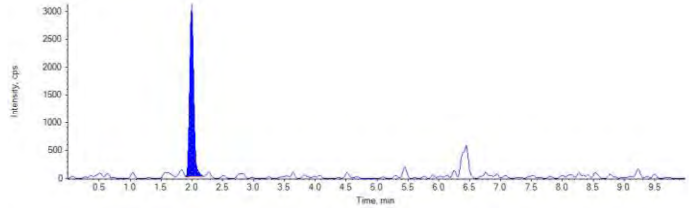
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



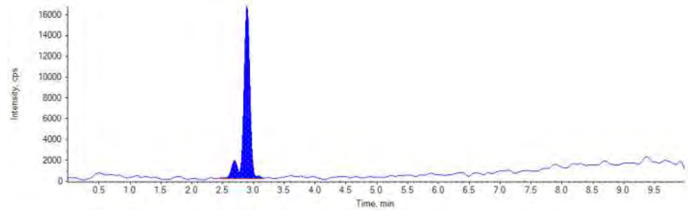
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 0.311 ng/L
Area Ratio: 0.0458
Sample Type: (Unknown)



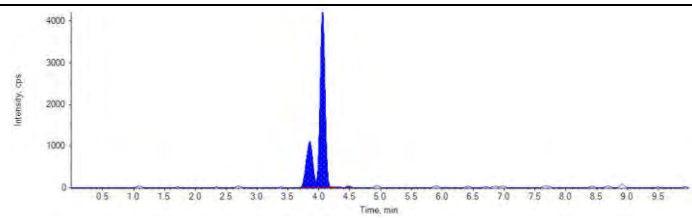
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 1.38 ng/L
Area Ratio: 0.0517
Sample Type: (Unknown)



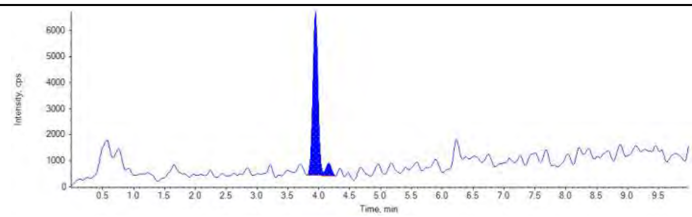
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min
Calculated Conc: 1.29 ng/L
Area Ratio: 0.104
Sample Type: (Unknown)



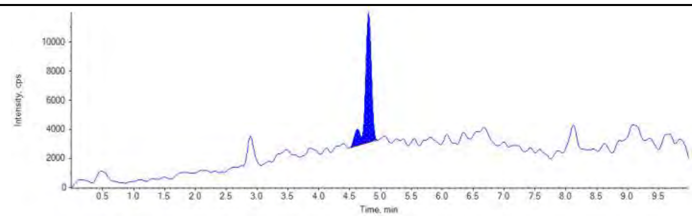
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.94 (3.91) min
Calculated Conc: 0.372 ng/L
Area Ratio: 0.0169
Sample Type: (Unknown)



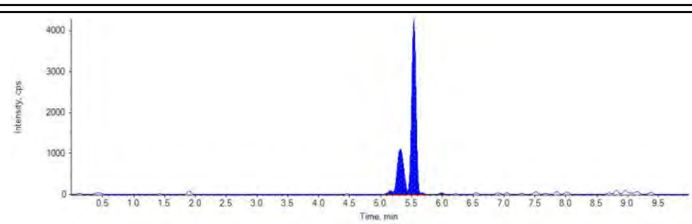
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 0.720 ng/L
Area Ratio: 0.0272
Sample Type: (Unknown)



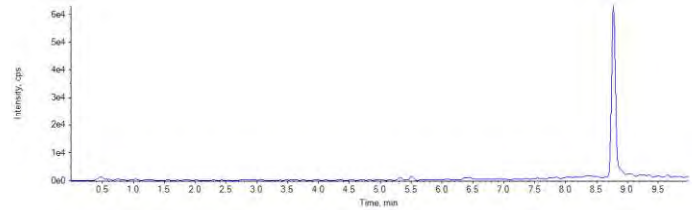
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 1.90 ng/L
Area Ratio: 0.0939
Sample Type: (Unknown)



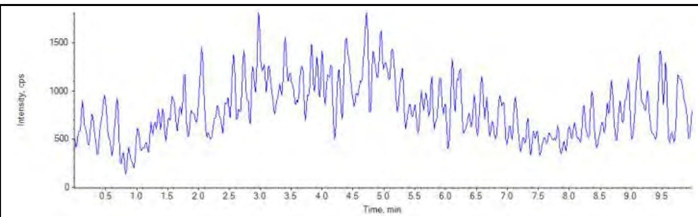
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



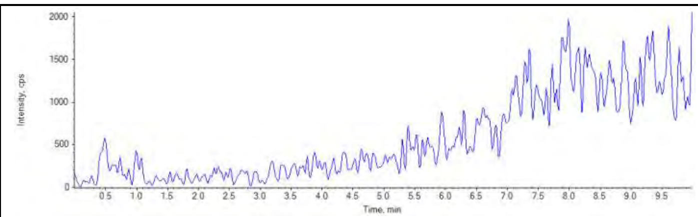
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



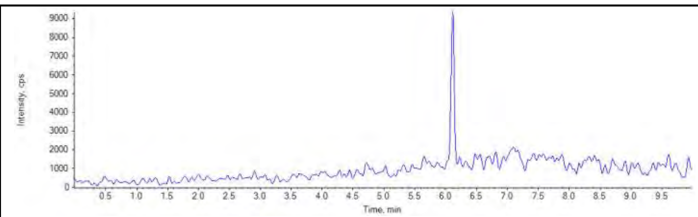
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



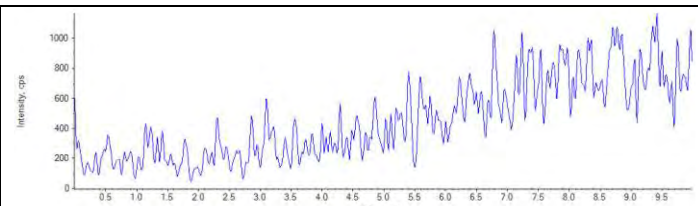
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



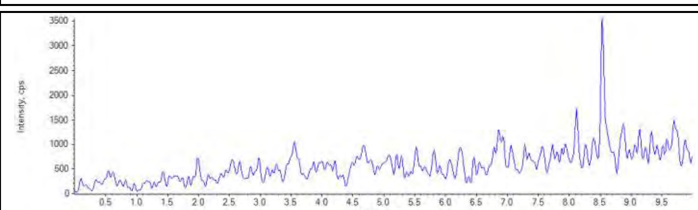
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



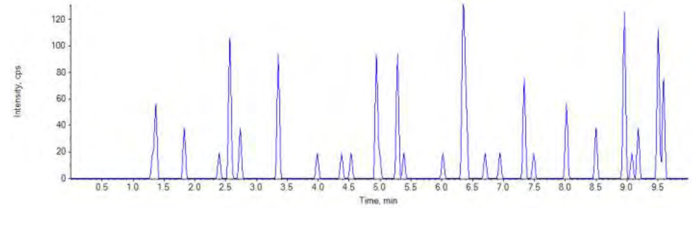
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



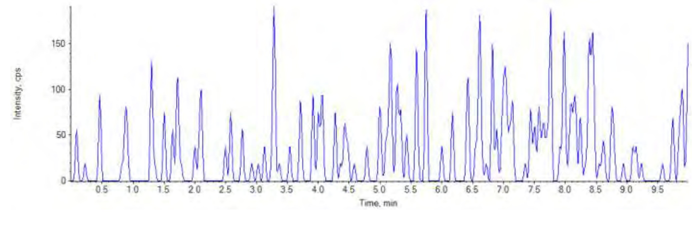
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



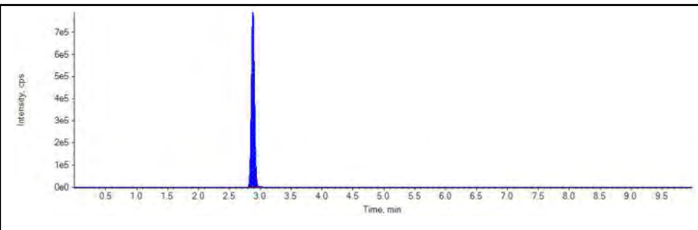
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min

Calculated Conc: 41.5 ng/L

Area Ratio: 1.30

Sample Type: (Unknown)



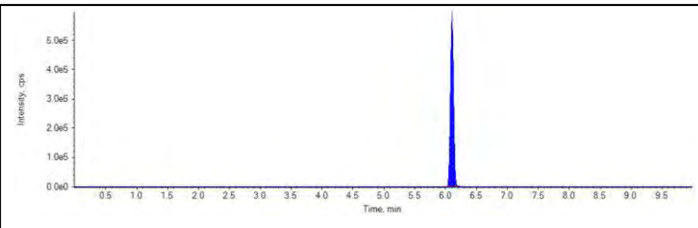
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min

Calculated Conc: 38.4 ng/L

Area Ratio: 0.881

Sample Type: (Unknown)



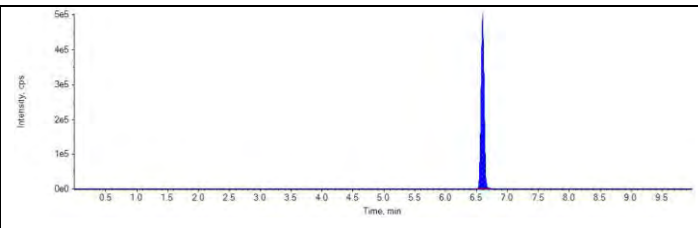
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 142. ng/L

Area Ratio: 0.725

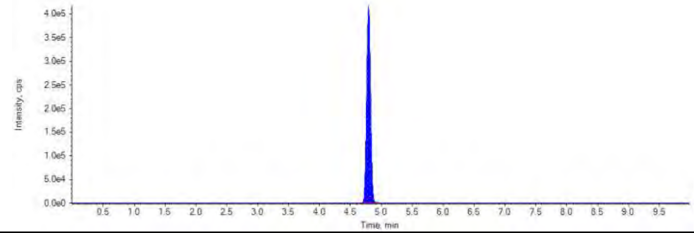
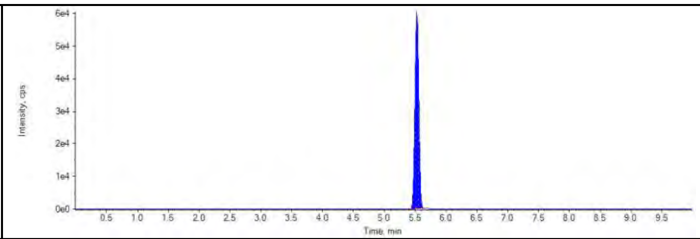
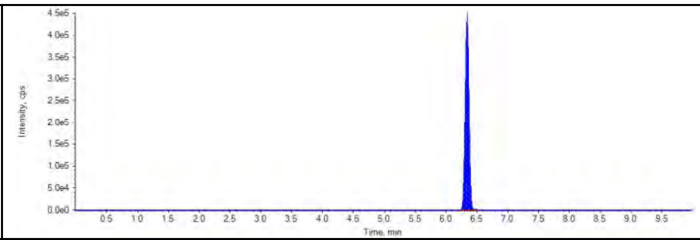
Sample Type: (Unknown)



Sample ID	5907027~IOF245-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	20
Acquisition Date	2019/01/03 5:16:02 PM	**Dilution Factor**	0.00350
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injected to confirm IS recovery, reported		

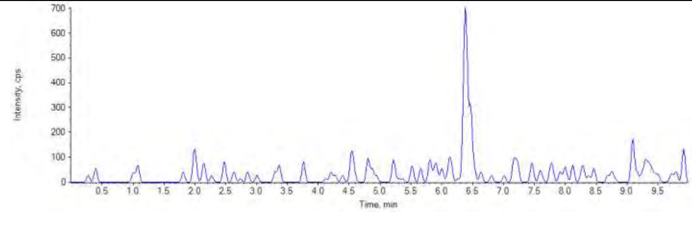
Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1820000.	4.79	1.00	-
MPFOS	259000.	5.53	1.00	-
D3-MeFOSAA IS	1930000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFHxA 1	0	0.00	N/A	N/A	N/A
PFHxS 1	0	0.00	N/A	N/A	N/A
PFHpA 1	0	0.00	N/A	N/A	N/A
PFOA 1	29700	4.81	N/A	0.419	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	2380000	2.88	N/A	41.7	N/A
13C2-PFDA	1670000	6.10	N/A	40.0	N/A
D5-EtFOSAA	1310000	6.60	N/A	133.	N/A

MPFOA (Internal Standard) RT (Exp. RT): 4.79(4.84) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 5.53(5.38) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
D3-MeFOSAA IS (Internal Standard) RT (Exp. RT): 6.34(6.43) min Concentration: 1.00 ng/L Sample Type: (Unknown)	

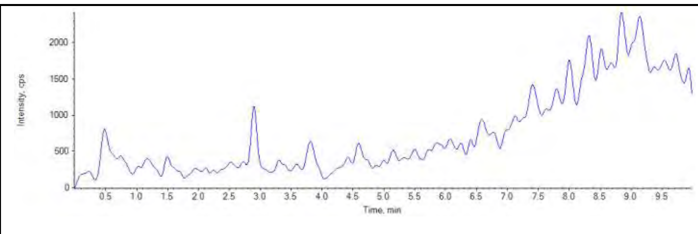
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.85) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



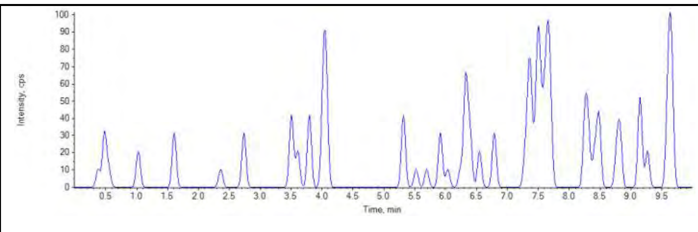
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 0.00 (2.97) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



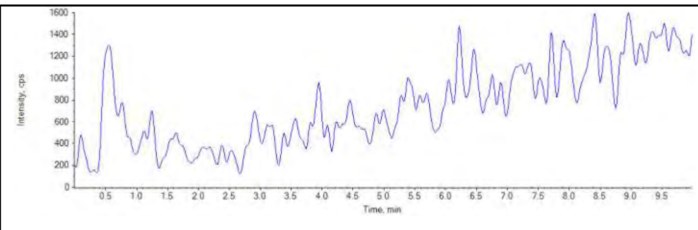
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 0.00 (4.00) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



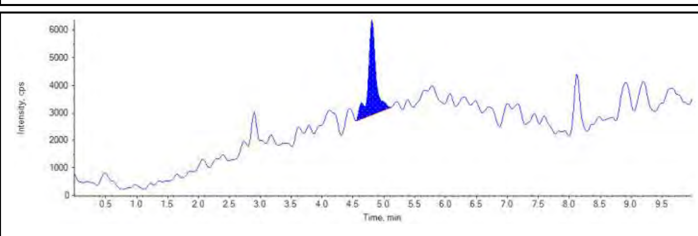
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 0.00 (3.91) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



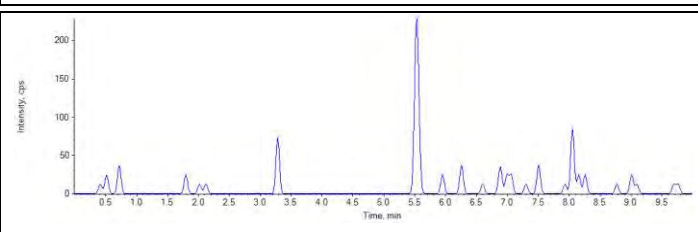
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 0.419 ng/L
Area Ratio: 0.0163
Sample Type: (Unknown)



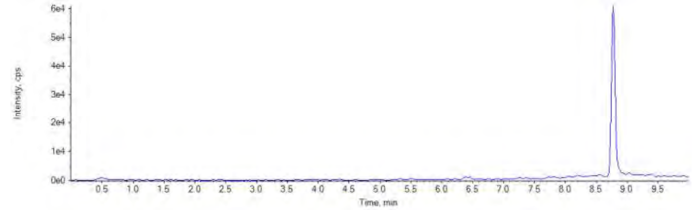
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.50) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



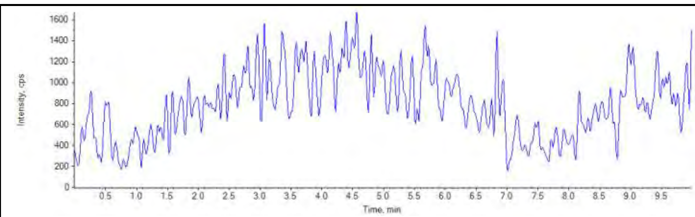
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



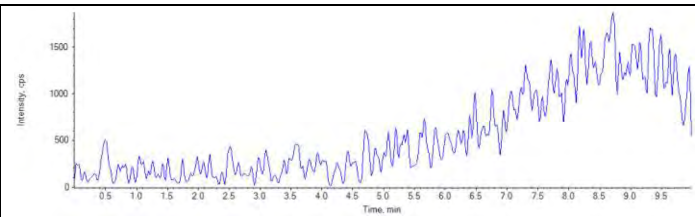
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



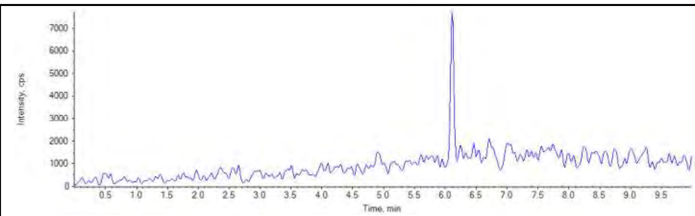
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



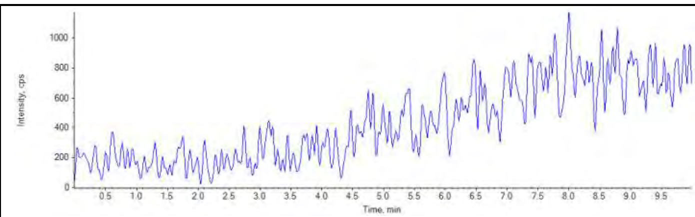
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



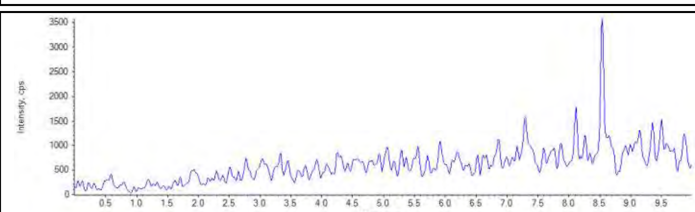
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



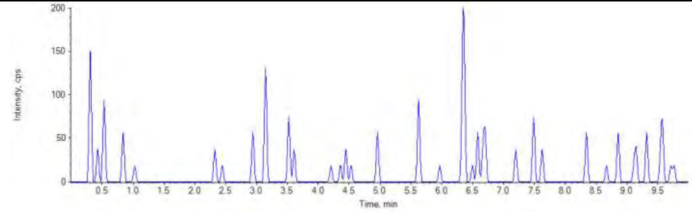
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



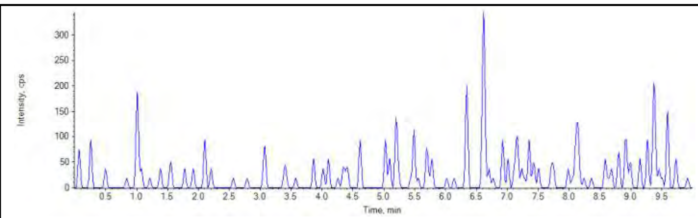
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



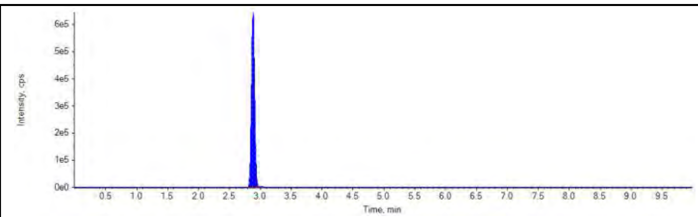
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



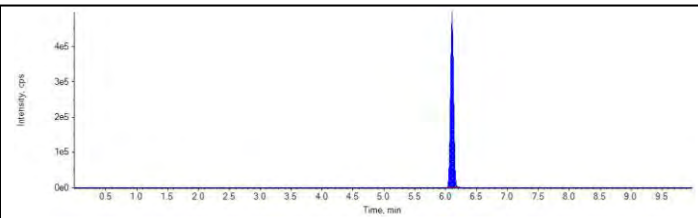
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min
Calculated Conc: 41.7 ng/L
Area Ratio: 1.31
Sample Type: (Unknown)



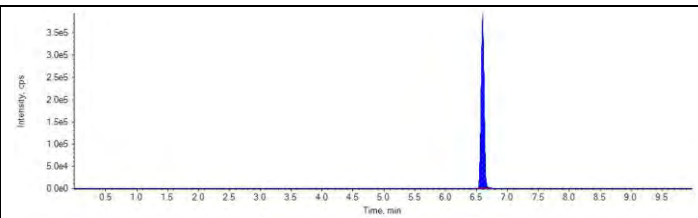
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min
Calculated Conc: 40.0 ng/L
Area Ratio: 0.920
Sample Type: (Unknown)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min
Calculated Conc: 133. ng/L
Area Ratio: 0.681
Sample Type: (Unknown)



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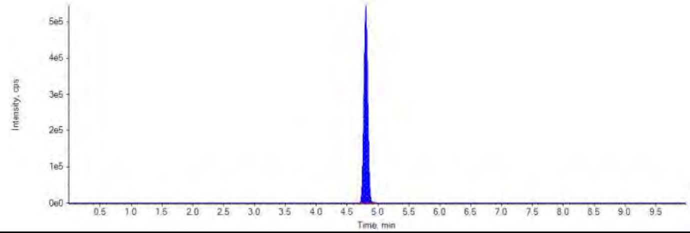
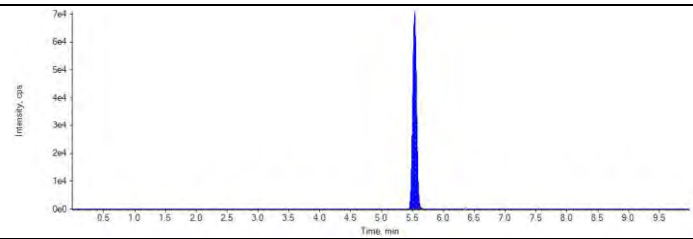
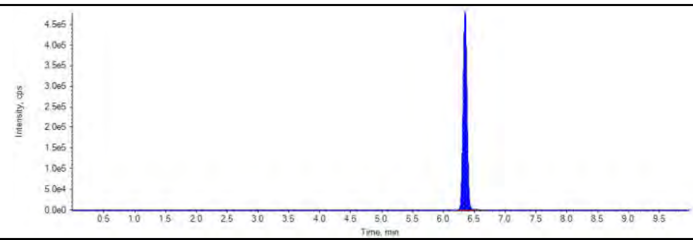
Printed: 09/01/2019 3:08:46 PM

Sample ID	5907027~IOF245-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	20
Acquisition Date	2019/01/04 3:34:32 PM	**Dilution Factor**	0.00350
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injection, not reported		

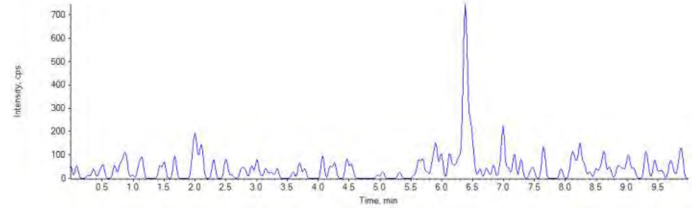
Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2330000.	4.80	1.00	-
MPFOS	306000.	5.53	1.00	-
D3-MeFOSAA IS	2150000.	6.35	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFHxA 1	0	0.00	N/A	N/A	N/A
PFHxS 1	0	0.00	N/A	N/A	N/A
PFHpA 1	0	0.00	N/A	N/A	N/A
PFOA 1	56900	4.81	N/A	0.627	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	2950000	2.89	N/A	40.3	N/A
13C2-PFDA	2250000	6.11	N/A	41.9	N/A
D5-EtFOSAA	1720000	6.61	N/A	157.	N/A

MPFOA (Internal Standard) RT (Exp. RT): 4.80(4.84) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 5.53(5.38) min Concentration: 1.00 ng/L Sample Type: (Unknown)	
D3-MeFOSAA IS (Internal Standard) RT (Exp. RT): 6.35(6.43) min Concentration: 1.00 ng/L Sample Type: (Unknown)	

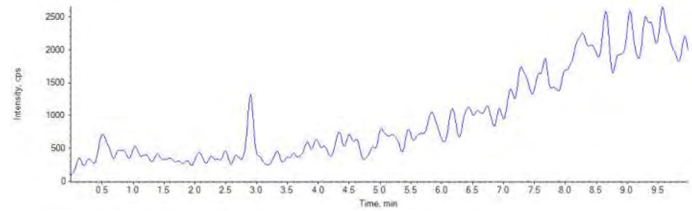
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.85) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



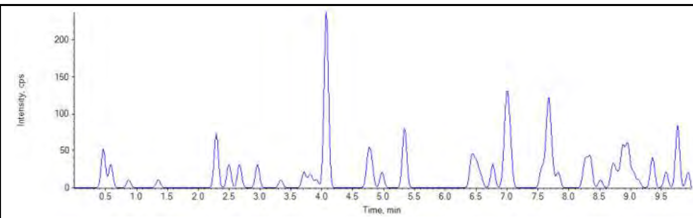
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 0.00 (2.97) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



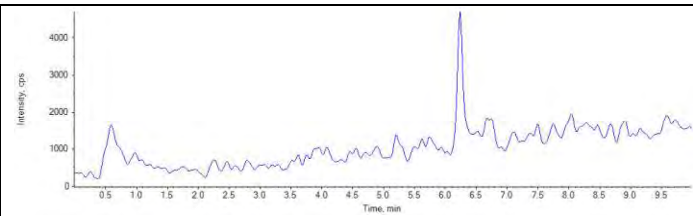
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 0.00 (4.00) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



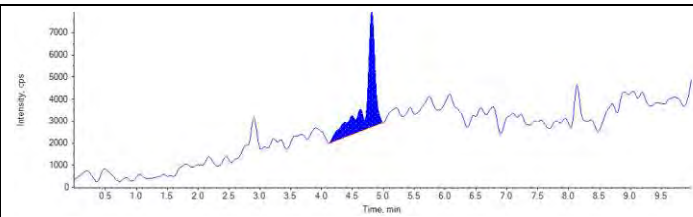
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 0.00 (3.91) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



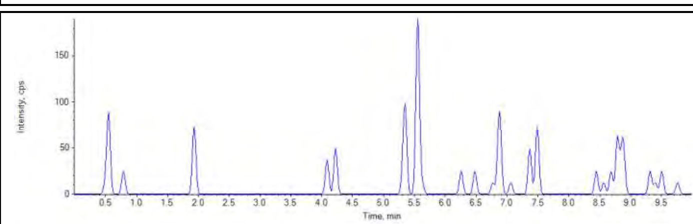
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 0.627 ng/L
Area Ratio: 0.0244
Sample Type: (Unknown)



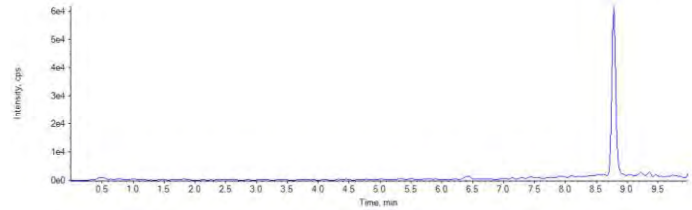
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.50) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



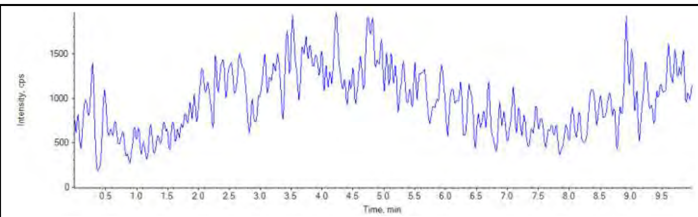
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



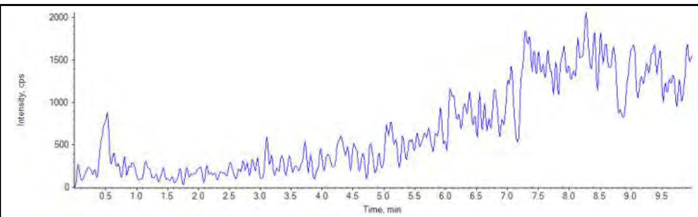
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



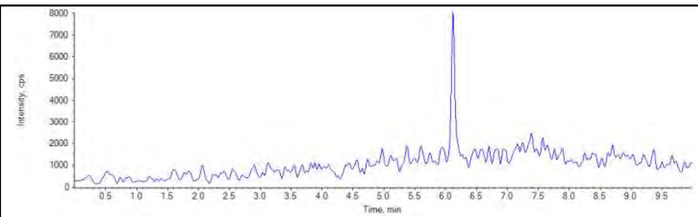
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



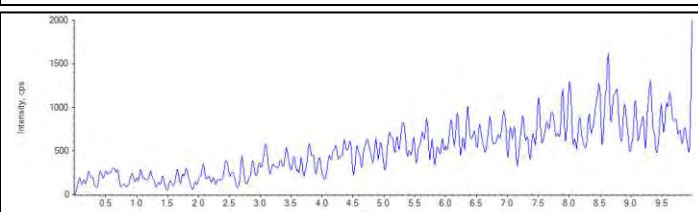
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



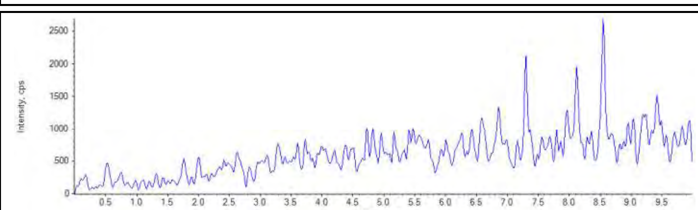
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



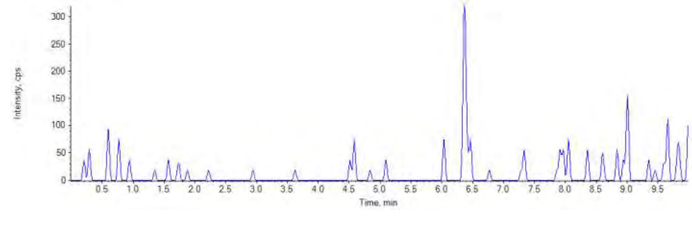
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



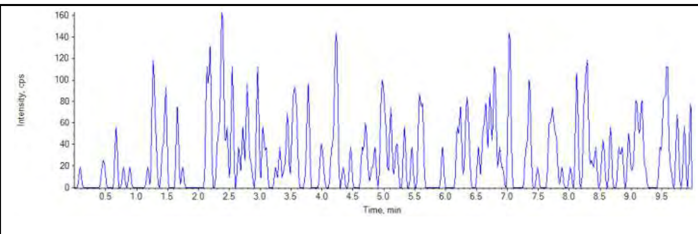
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



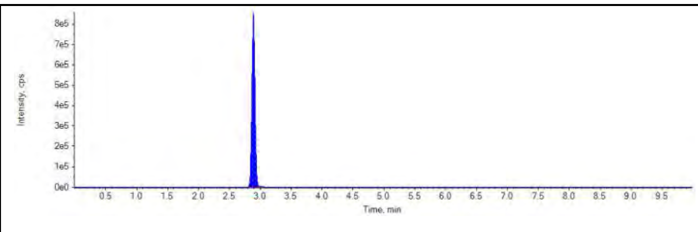
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 40.3 ng/L

Area Ratio: 1.26

Sample Type: (Unknown)



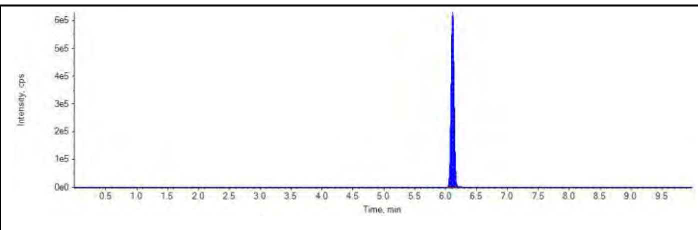
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 41.9 ng/L

Area Ratio: 0.963

Sample Type: (Unknown)



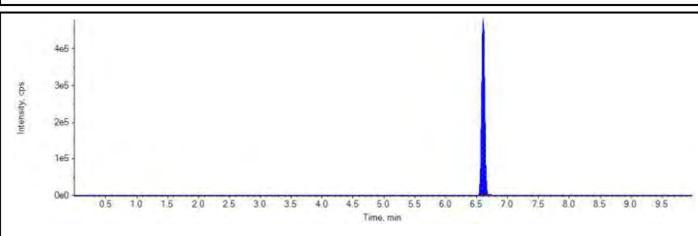
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.61 (6.68) min

Calculated Conc: 157. ng/L

Area Ratio: 0.801

Sample Type: (Unknown)



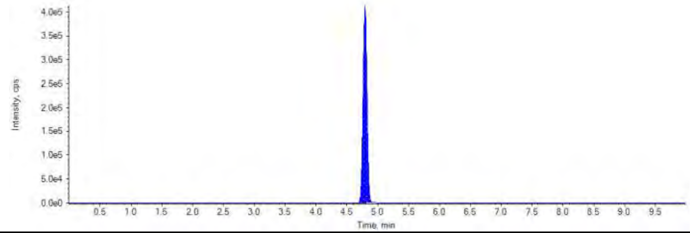
Sample ID	5907027~IOF246-01	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	21
Acquisition Date	2019/01/03 5:31:38 PM	**Dilution Factor**	0.00350
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1810000.	4.79	1.00	-
MPFOS	241000.	5.52	1.00	-
D3-MeFOSAA IS	1710000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	15300	2.00	N/A	0.417	N/A
PFHxA 1	37400	2.90	N/A	0.535	N/A
PFHxS 1	35300	4.06	N/A	1.76	N/A
PFHpA 1	32600	3.94	N/A	0.383	N/A
PFOA 1	55100	4.80	N/A	0.782	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	5870	7.42	N/A	0.132	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	4560	6.35	N/A	0.281	N/A
EtFOSAA 1	4220	6.60	N/A	0.303	N/A
13C2-PFHxA	2420000	2.88	N/A	42.5	N/A
13C2-PFDA	1820000	6.10	N/A	43.6	N/A
D5-EtFOSAA	1330000	6.60	N/A	152.	N/A

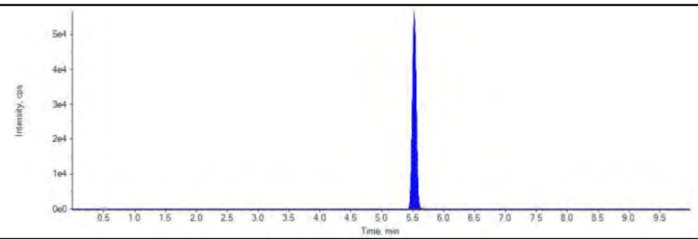
MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



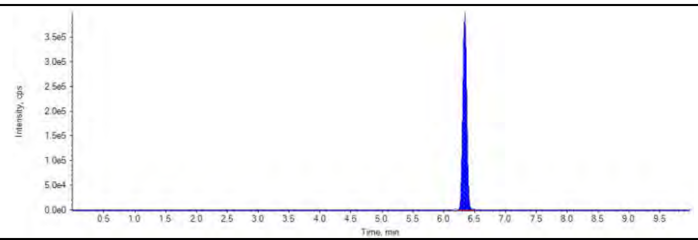
MPFOS (Internal Standard)

RT (Exp. RT): 5.52(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



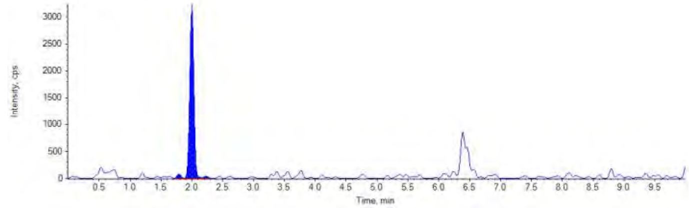
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



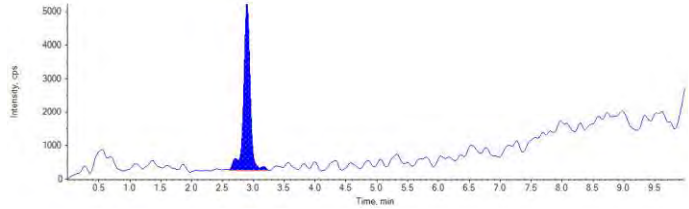
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	2.00 (1.85) min
Calculated Conc:	0.417 ng/L
Area Ratio:	0.0632
Sample Type:	(Unknown)



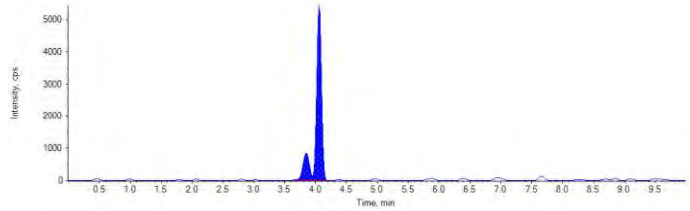
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	2.90 (2.97) min
Calculated Conc:	0.535 ng/L
Area Ratio:	0.0206
Sample Type:	(Unknown)



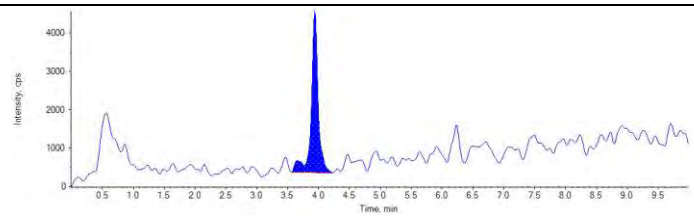
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	4.06 (4.00) min
Calculated Conc:	1.76 ng/L
Area Ratio:	0.146
Sample Type:	(Unknown)



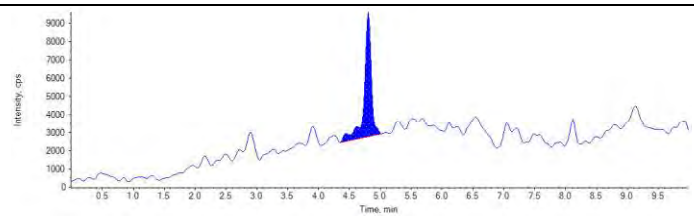
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	3.94 (3.91) min
Calculated Conc:	0.383 ng/L
Area Ratio:	0.0180
Sample Type:	(Unknown)



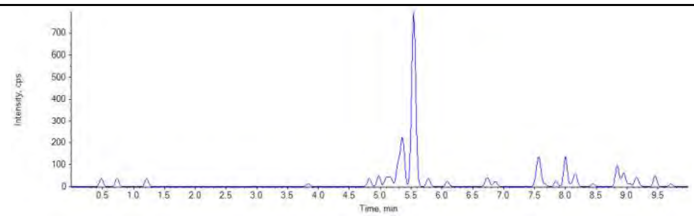
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT):	4.80 (4.89) min
Calculated Conc:	0.782 ng/L
Area Ratio:	0.0304
Sample Type:	(Unknown)



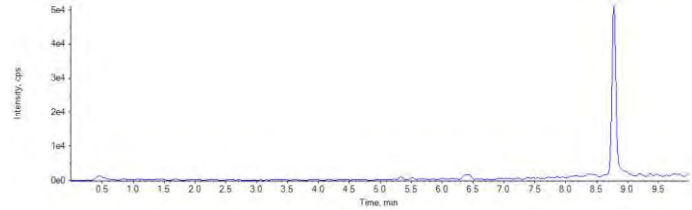
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	0.00 (5.50) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Unknown)



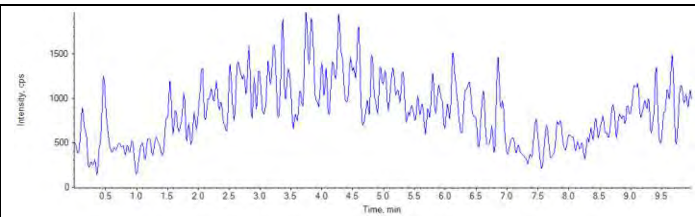
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



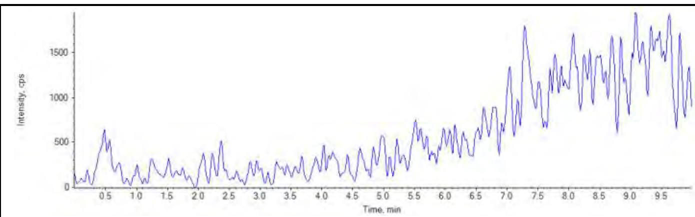
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



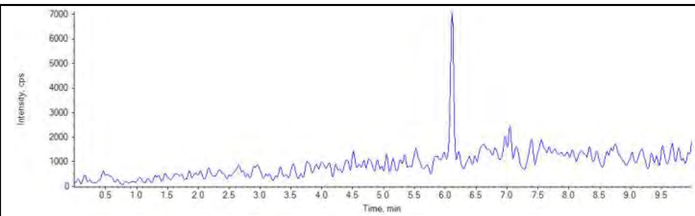
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



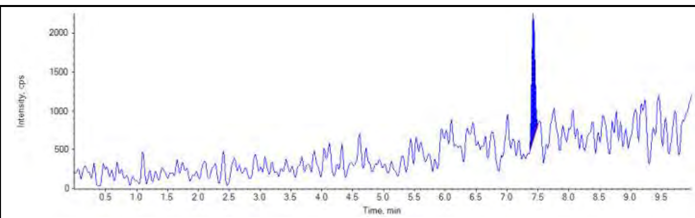
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



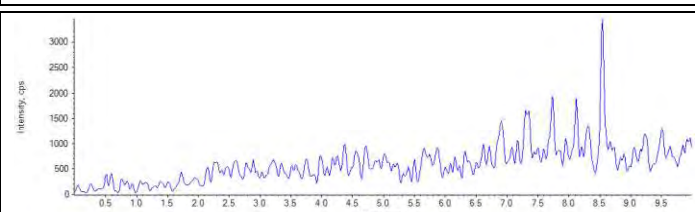
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.42 (7.38) min
Calculated Conc: 0.132 ng/L
Area Ratio: 0.00324
Sample Type: (Unknown)



PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



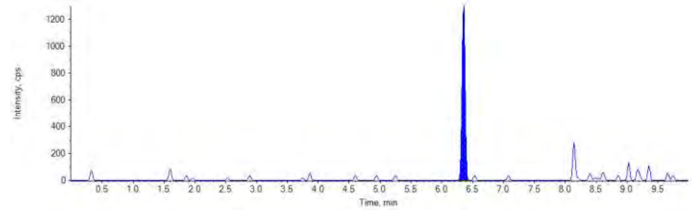
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 6.35 (6.29) min

Calculated Conc: 0.281 ng/L

Area Ratio: 0.00266

Sample Type: (Unknown)



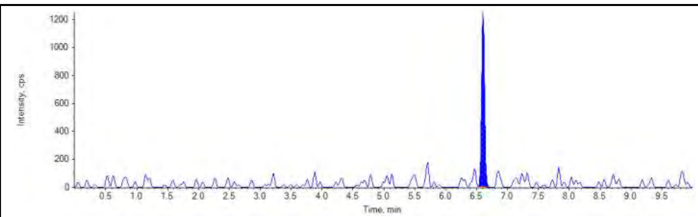
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 6.60 (6.66) min

Calculated Conc: 0.303 ng/L

Area Ratio: 0.00246

Sample Type: (Unknown)



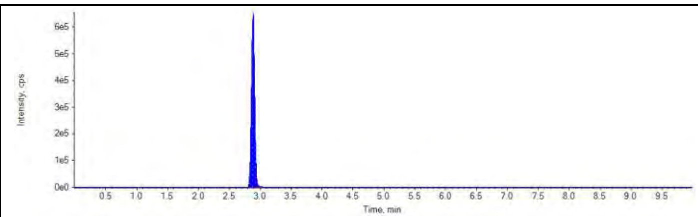
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min

Calculated Conc: 42.5 ng/L

Area Ratio: 1.33

Sample Type: (Unknown)



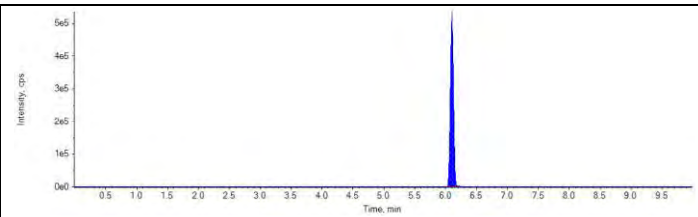
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min

Calculated Conc: 43.6 ng/L

Area Ratio: 1.00

Sample Type: (Unknown)



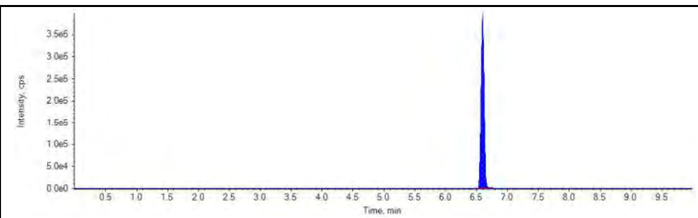
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 152. ng/L

Area Ratio: 0.777

Sample Type: (Unknown)

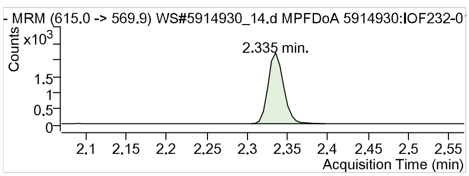


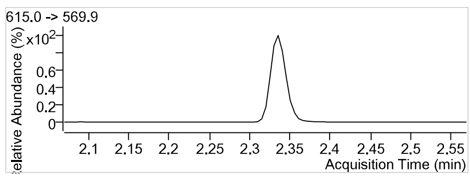
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics		
Sample Name	**5914930:IOF232-01:10x**	**Instrument**	LCMS04
Data File	WS#5914930_14.d	**Operator**	
Sample Type	Sample	**Dilution**	0.24
Acq. Method	PFC_Water_Low.m	**Position**	P3-E3
Acq. Date	2019/01/05 8:44:32 PM	**Injection Volume**	Per Method
Sample Annotation	-		

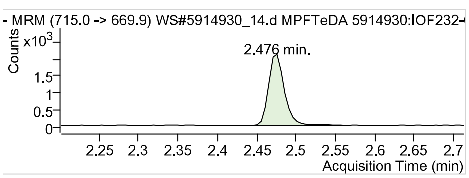
ISTD Compounds	Response	RT	Target conc.		
MPFDoA	2891	2.34	1 µg/L		
MPFTeDA	2913	2.48	1 µg/L		
13C9-PFDA IS	14909	2.15	1 µg/L		

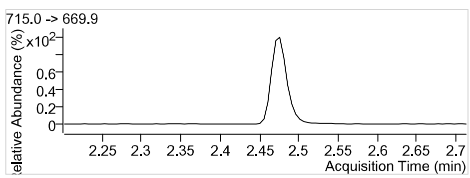
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFDoA	2891	2.34	-	69.99 µg/L	-
13C2-PFTeDA	2913	2.48	-	51.64 µg/L	-
13C9-PFDA	14909	2.15	-	25.02 µg/L	-



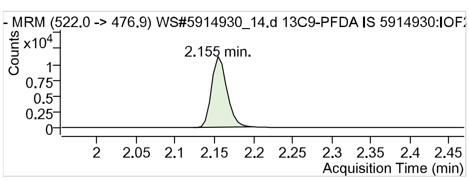


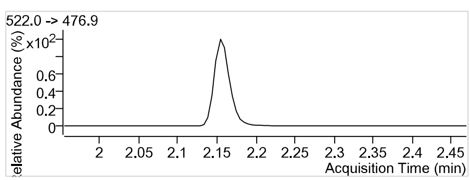
MPFDoA	Internal Standard
RT (Exp. RT):	2.335 (2.335)
Concentration:	1 µg/L
Sample type:	Sample



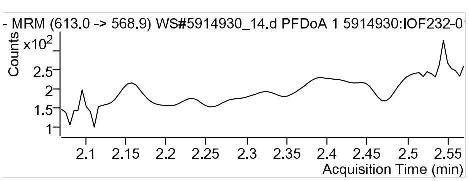


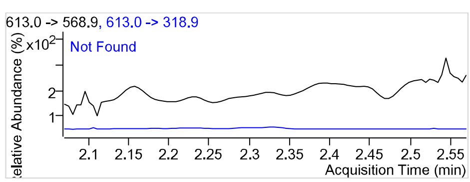
MPFTeDA	Internal Standard
RT (Exp. RT):	2.476 (2.476)
Concentration:	1 µg/L
Sample type:	Sample



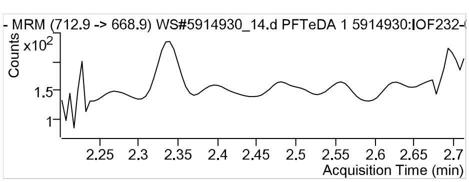


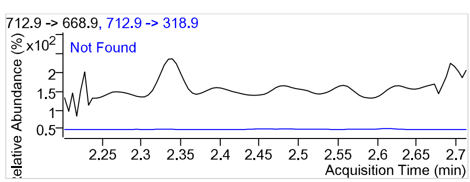
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.155 (2.155)
Concentration:	1 µg/L
Sample type:	Sample



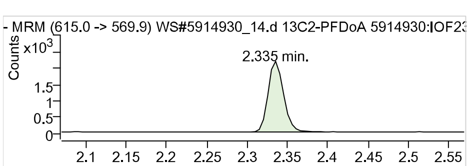


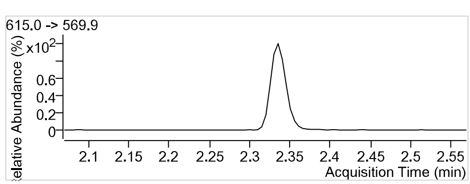
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.336)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



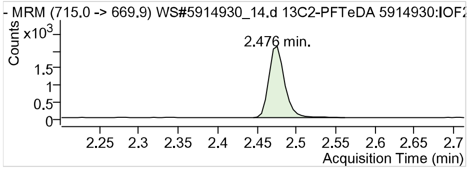


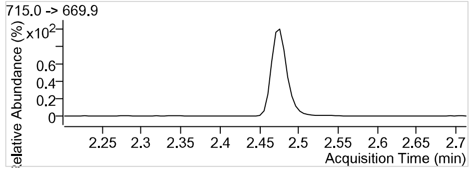
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.476)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



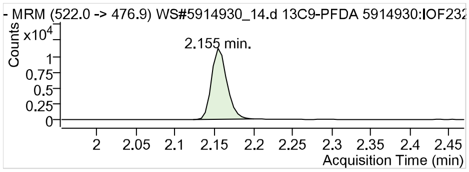


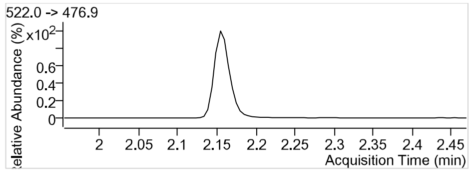
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.335 (2.335)
Calc. conc.	69.99 µg/L
Area ratio:	0.19391
Sample type:	Sample





13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.476 (2.476)
Calc. conc.	51.64 µg/L
Area ratio:	0.19539
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.155 (2.155)
Calc. conc.	25.02 µg/L
Area ratio:	0
Sample type:	Sample

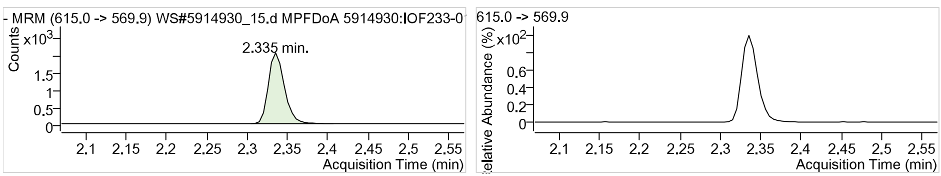
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics

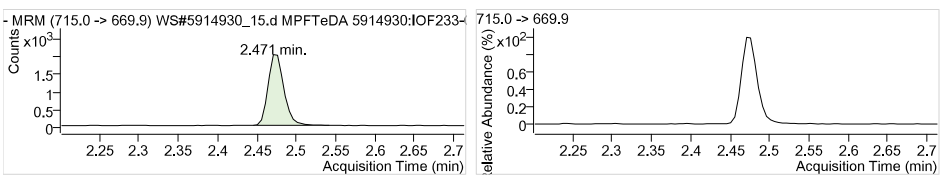
Sample Name	**5914930:IOF233-01:10x**	**Instrument**	LCMS04
Data File	WS#5914930_15.d	**Operator**	
Sample Type	Sample	**Dilution**	0.24
Acq. Method	PFC_Water_Low.m	**Position**	P3-E4
Acq. Date	2019/01/05 8:49:27 PM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
MPFDoA	2833	2.34	1 µg/L		
MPFTeDA	2815	2.47	1 µg/L		
13C9-PFDA IS	15350	2.15	1 µg/L		

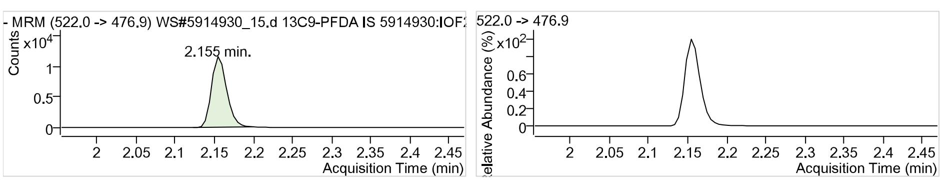
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFDoA	2833	2.34	-	66.61 µg/L	-
13C2-PFTeDA	2815	2.47	-	48.46 µg/L	-
13C9-PFDA	15350	2.15	-	25.76 µg/L	-



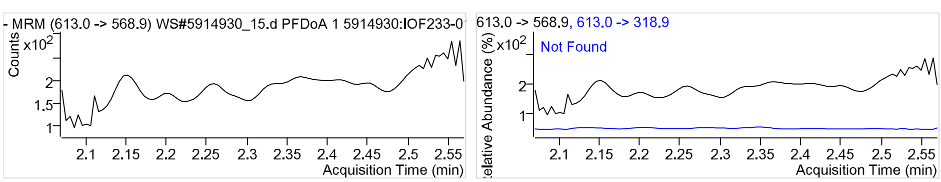
MPFDoA	Internal Standard
RT (Exp. RT):	2.335 (2.335)
Concentration:	1 µg/L
Sample type:	Sample



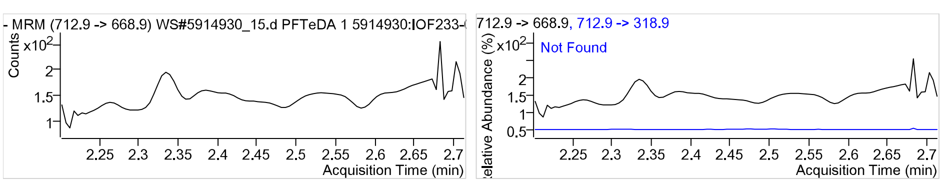
MPFTeDA	Internal Standard
RT (Exp. RT):	2.471 (2.476)
Concentration:	1 µg/L
Sample type:	Sample



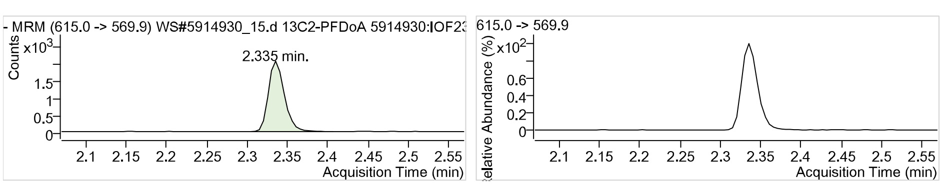
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.155 (2.155)
Concentration:	1 µg/L
Sample type:	Sample



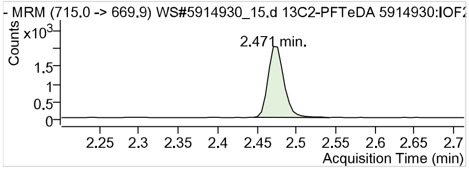
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.336)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

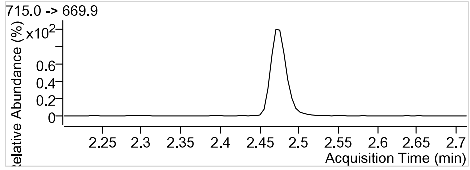


PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.476)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

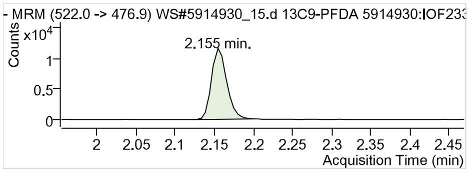


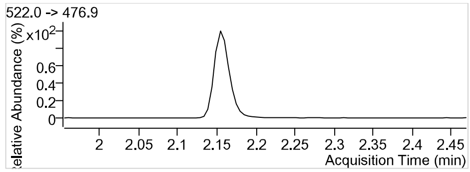
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.335 (2.335)
Calc. conc.	66.61 µg/L
Area ratio:	0.18456
Sample type:	Sample





13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.471 (2.476)
Calc. conc.	48.46 µg/L
Area ratio:	0.18339
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.155 (2.155)
Calc. conc.	25.76 µg/L
Area ratio:	0
Sample type:	Sample

4. QA/QC Data

Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

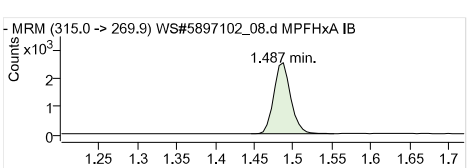
Quantitation Results

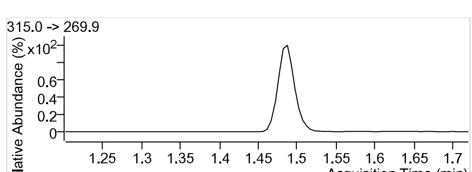
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5897102_08.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-A8
Acq. Date	2018/12/21 7:56:22 PM	**Injection Volume**	Per Method
Sample Annotation	-		

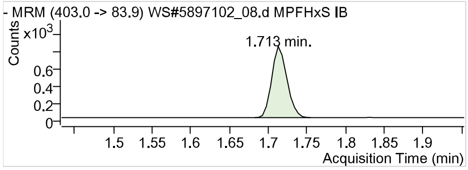
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3741	1.49	1 µg/L		
MPFHxS	1097	1.71	1 µg/L		
MPFHpA	5752	1.73	1 µg/L		
MPFOA	5037	1.91	1 µg/L		
MPFOS	1189	2.00	1 µg/L		
MPFNA	4738	2.05	1 µg/L		
MPFDA	3384	2.16	1 µg/L		
MPFUnA	4060	2.26	1 µg/L		
MPFDoA	5242	2.35	1 µg/L		
MPFTeDA	7380	2.48	1 µg/L		
13C6-PFHxA IS	14273	1.49	1 µg/L		
13C9-PFDA IS	17557	2.16	1 µg/L		

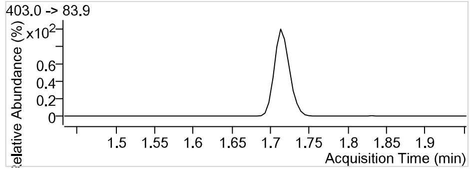
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3741	1.49	-	97.64 µg/L	-
18O2-PFHxS	1097	1.71	-	107.52 µg/L	-
13C4-PFHpA	5752	1.73	-	101.77 µg/L	-
13C4-PFOA	5037	1.91	-	97.07 µg/L	-
13C4-PFOS	1189	2.00	-	105.33 µg/L	-
13C5-PFNA	4738	2.05	-	98.90 µg/L	-
13C2-PFDA	3384	2.16	-	94.56 µg/L	-
13C2-PFUnA	4060	2.26	-	97.28 µg/L	-
13C2-PFDoA	5242	2.35	-	97.21 µg/L	-
13C2-PFTeDA	7380	2.48	-	95.29 µg/L	-
13C6-PFHxA	14273	1.49	-	2.33 µg/L	-
13C9-PFDA	17557	2.16	-	2.44 µg/L	-



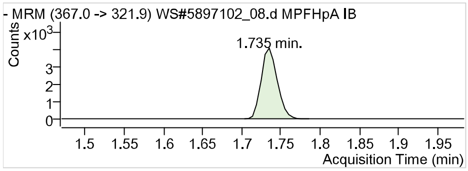


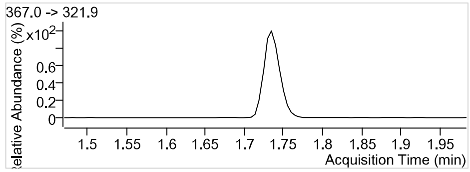
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



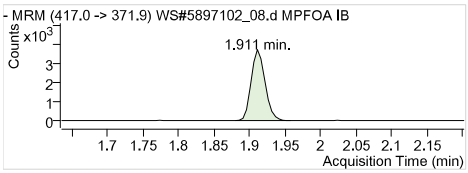


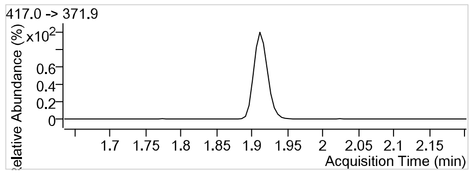
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	Sample



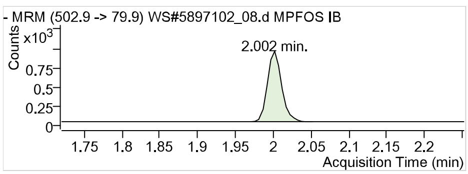


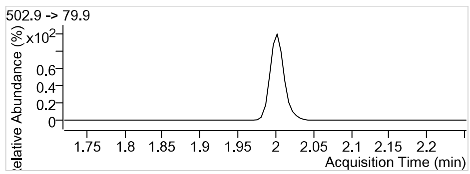
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	Sample



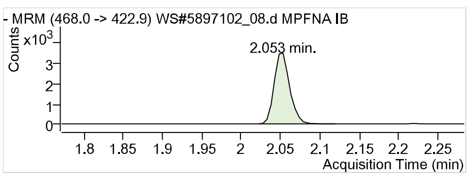


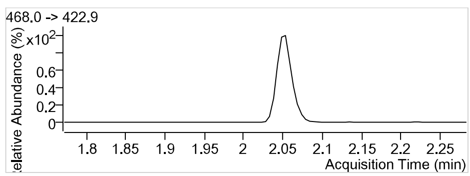
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	Sample



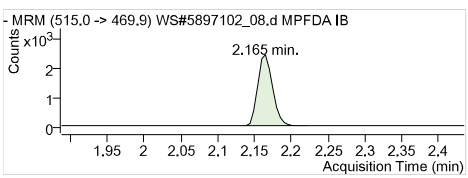


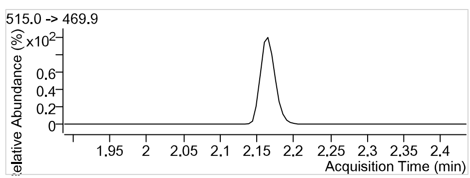
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	Sample



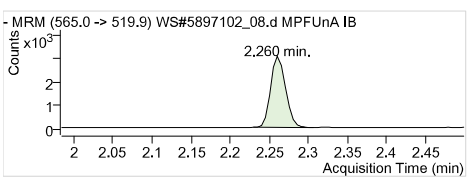


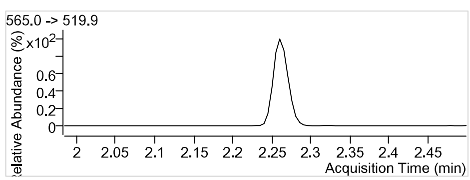
MPFNA	Internal Standard
RT (Exp. RT):	2.053 (2.053)
Concentration:	1 µg/L
Sample type:	Sample



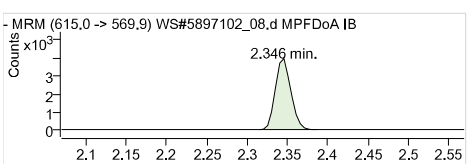


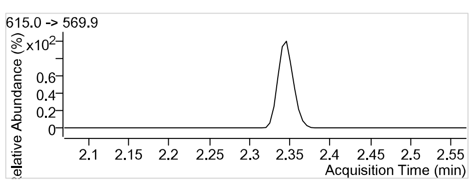
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



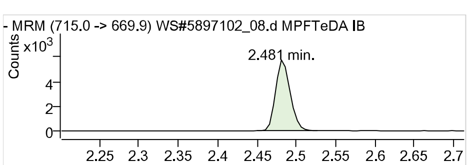


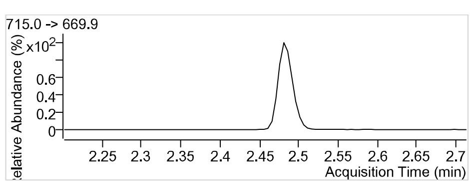
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	Sample



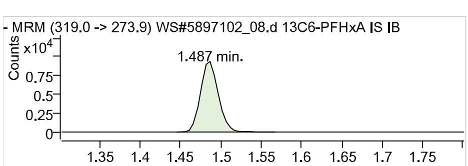


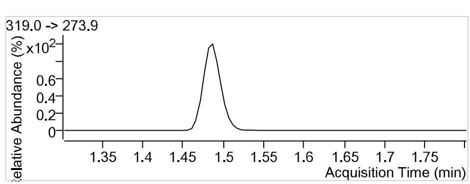
MPFDoA	Internal Standard
RT (Exp. RT):	2.346 (2.346)
Concentration:	1 µg/L
Sample type:	Sample



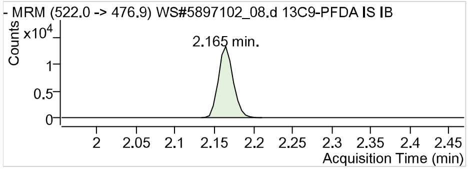


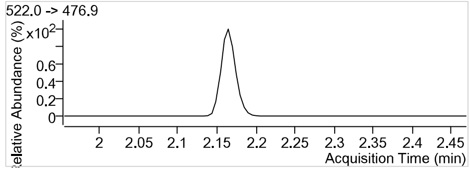
MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	Sample



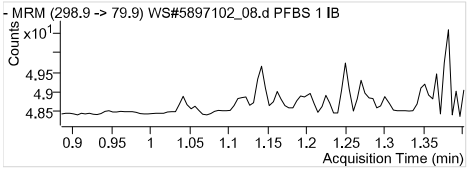


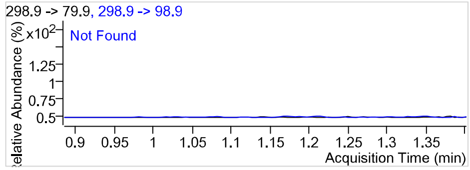
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



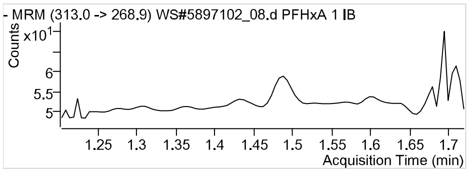


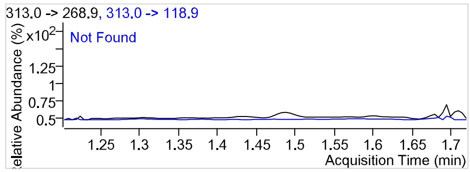
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



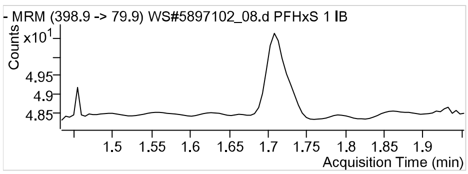


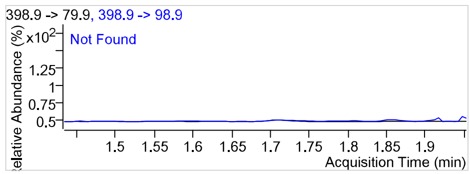
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	0.000 (1.162)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



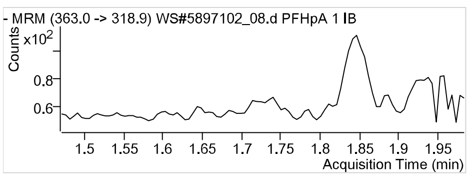


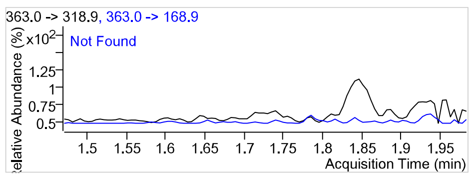
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	0.000 (1.488)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



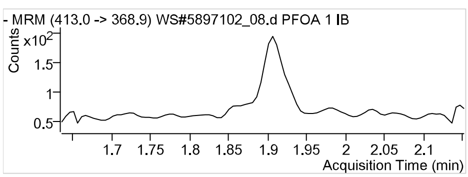


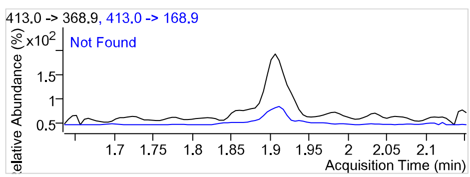
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	0.000 (1.713)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



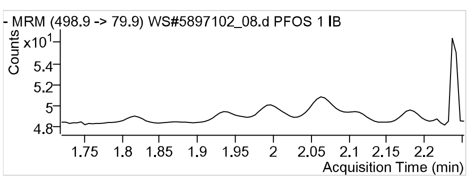


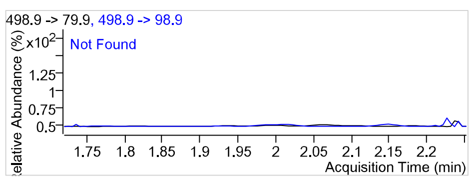
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	0.000 (1.735)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



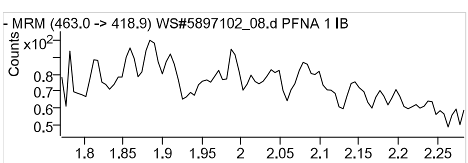


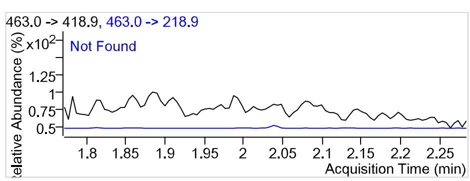
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	0.000 (1.912)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



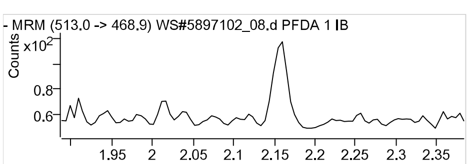


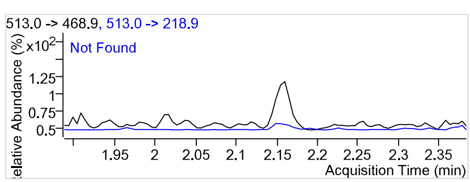
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	0.000 (2.002)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



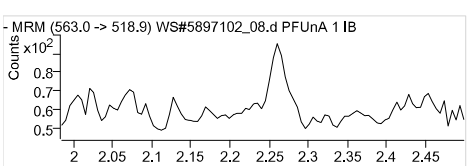


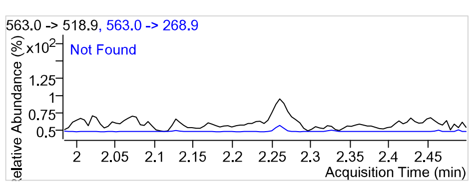
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	0.000 (2.053)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



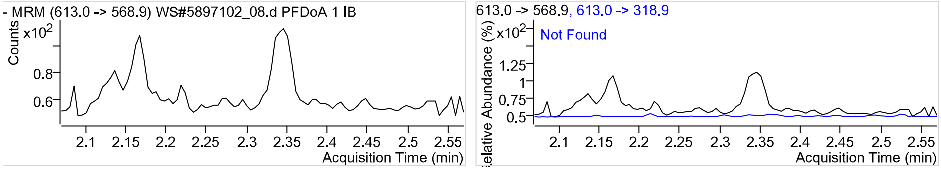


PFDA 1	513.0 -> 468.9
RT (Exp. RT):	0.000 (2.165)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

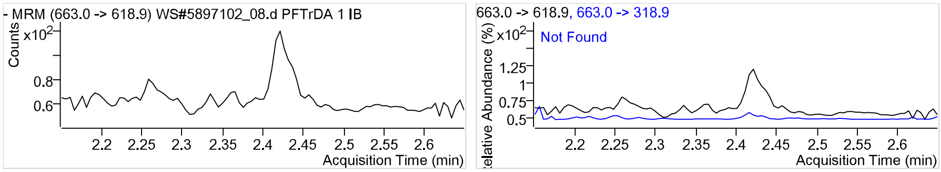




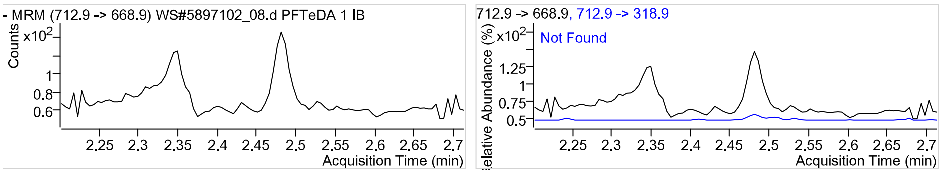
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	0.000 (2.260)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



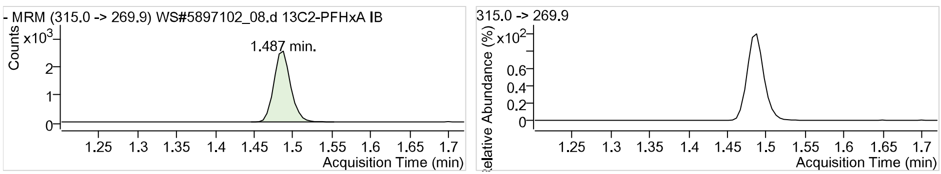
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.346)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



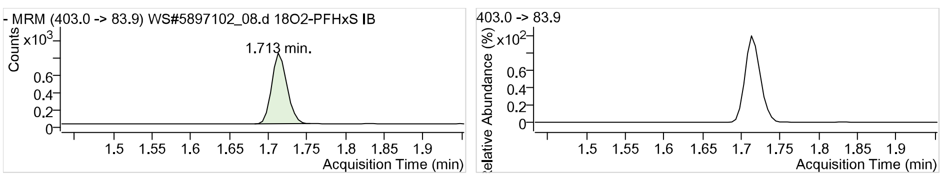
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	0.000 (2.416)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



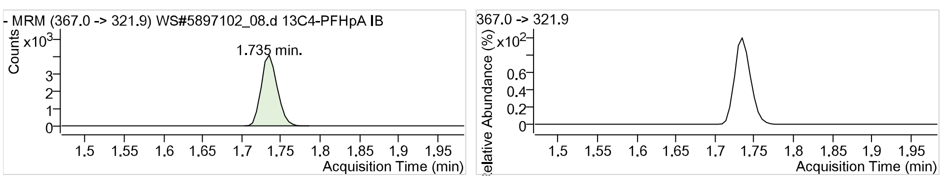
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.481)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



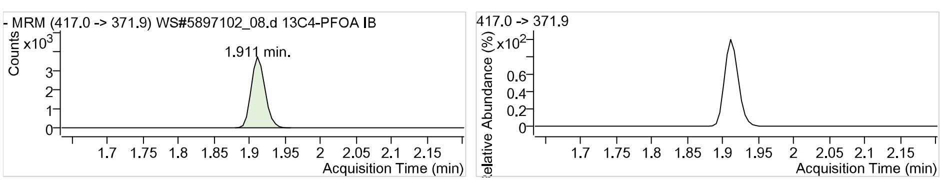
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	97.64 µg/L
Area ratio:	0.26210
Sample type:	Sample



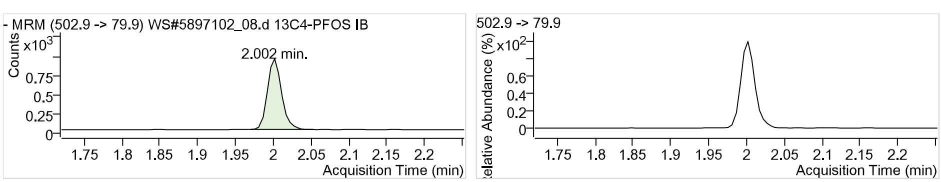
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	107.52 µg/L
Area ratio:	0.07686
Sample type:	Sample



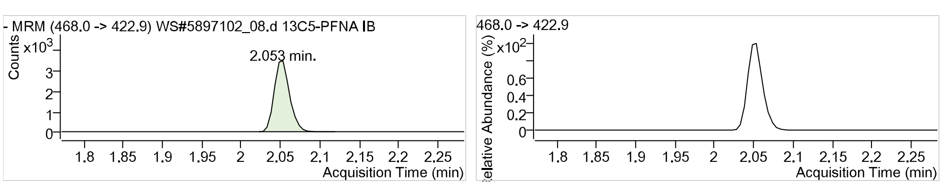
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	101.77 µg/L
Area ratio:	0.40300
Sample type:	Sample



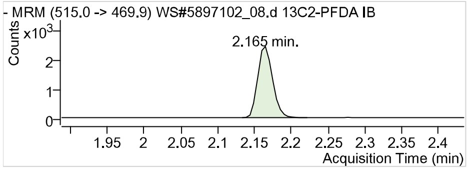
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	97.07 µg/L
Area ratio:	0.35290
Sample type:	Sample

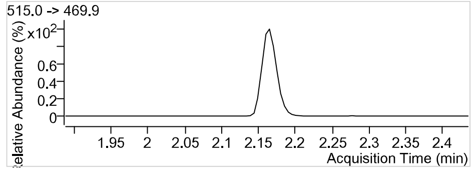


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	105.33 µg/L
Area ratio:	0.08330
Sample type:	Sample

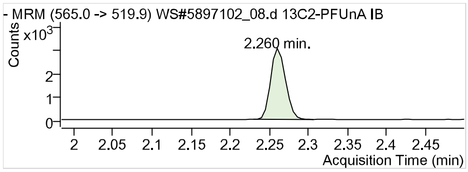


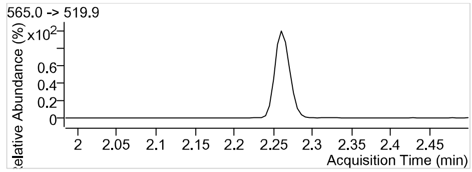
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	98.90 µg/L
Area ratio:	0.33196
Sample type:	Sample



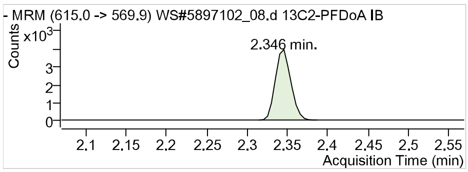


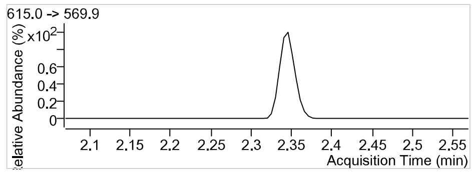
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	94.56 µg/L
Area ratio:	0.19274
Sample type:	Sample



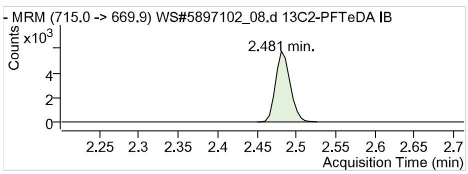


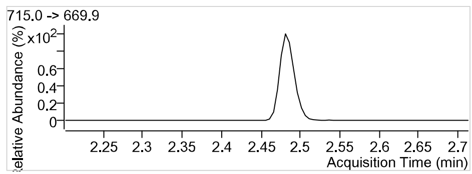
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	97.28 µg/L
Area ratio:	0.23125
Sample type:	Sample



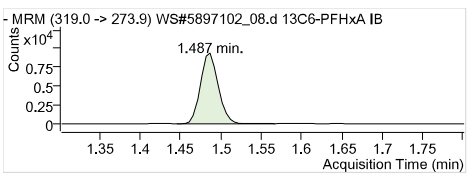


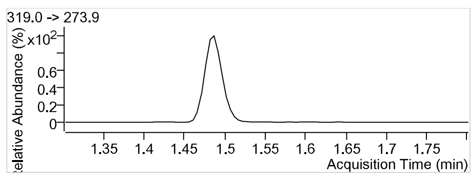
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	97.21 µg/L
Area ratio:	0.29857
Sample type:	Sample



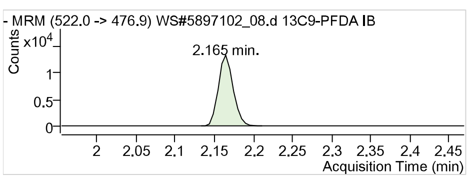


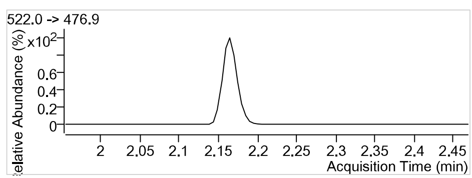
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	95.29 µg/L
Area ratio:	0.42035
Sample type:	Sample





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.33 µg/L
Area ratio:	0
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.44 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

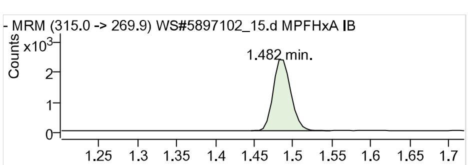
Agilent Technologies

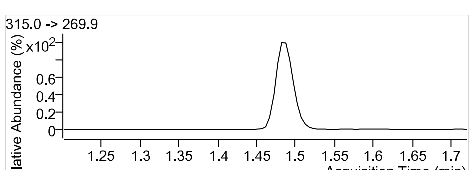
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5897102_15.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-A8
Acq. Date	2018/12/21 8:30:45 PM	**Injection Volume**	Per Method
Sample Annotation	-		

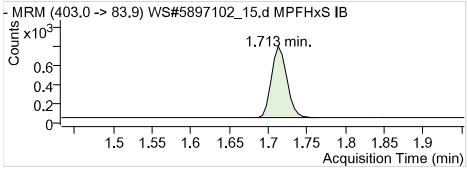
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3743	1.48	1 µg/L		
MPFHxS	1028	1.71	1 µg/L		
MPFHpA	5454	1.73	1 µg/L		
MPFOA	5041	1.91	1 µg/L		
MPFOS	1126	2.00	1 µg/L		
MPFNA	4868	2.05	1 µg/L		
MPFDA	3450	2.16	1 µg/L		
MPFUnA	4212	2.26	1 µg/L		
MPFDoA	5178	2.35	1 µg/L		
MPFTeDA	7478	2.48	1 µg/L		
13C6-PFHxA IS	14319	1.49	1 µg/L		
13C9-PFDA IS	16905	2.16	1 µg/L		

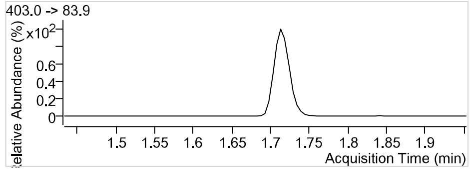
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3743	1.48	-	97.38 µg/L	-
18O2-PFHxS	1028	1.71	-	100.43 µg/L	-
13C4-PFHpA	5454	1.73	-	96.19 µg/L	-
13C4-PFOA	5041	1.91	-	96.84 µg/L	-
13C4-PFOS	1126	2.00	-	99.43 µg/L	-
13C5-PFNA	4868	2.05	-	101.28 µg/L	-
13C2-PFDA	3450	2.16	-	100.13 µg/L	-
13C2-PFUnA	4212	2.26	-	104.81 µg/L	-
13C2-PFDoA	5178	2.35	-	99.73 µg/L	-
13C2-PFTeDA	7478	2.48	-	100.28 µg/L	-
13C6-PFHxA	14319	1.49	-	2.34 µg/L	-
13C9-PFDA	16905	2.16	-	2.35 µg/L	-



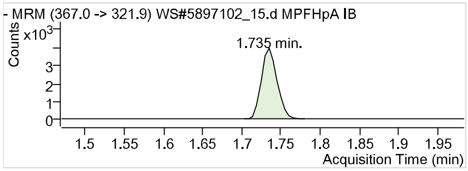


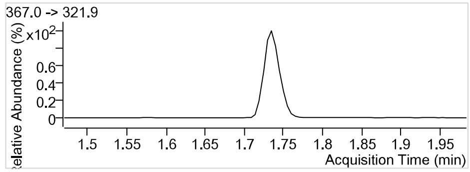
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



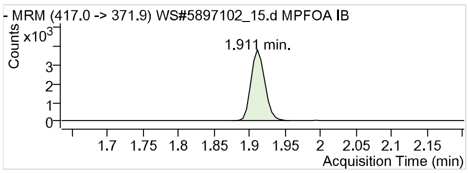


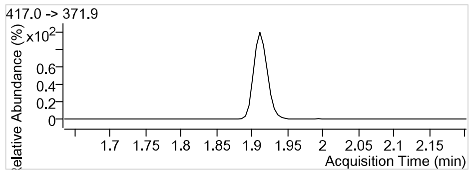
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	Sample



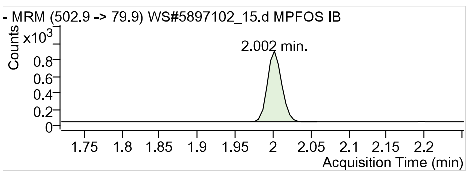


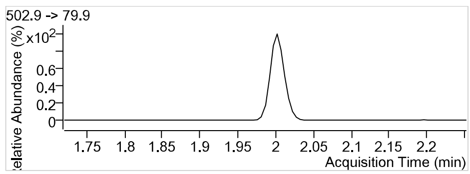
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	Sample



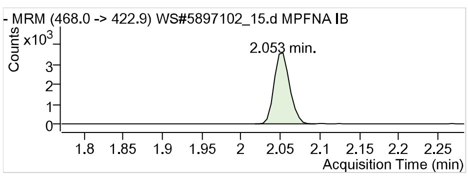


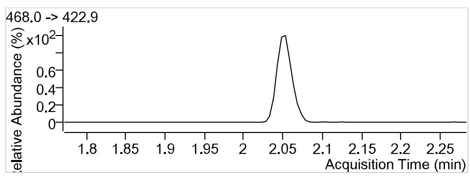
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	Sample



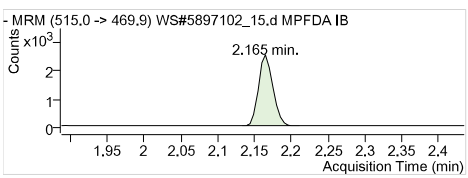


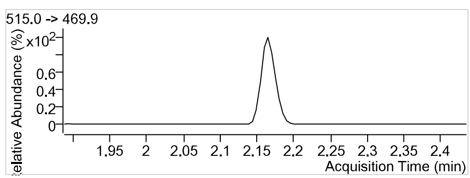
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	Sample



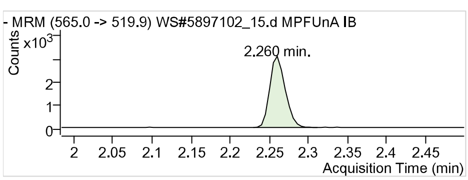


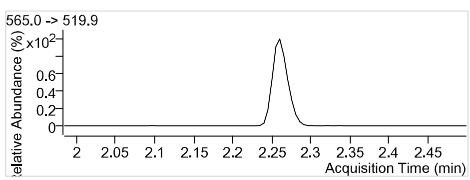
MPFNA	Internal Standard
RT (Exp. RT):	2.053 (2.053)
Concentration:	1 µg/L
Sample type:	Sample



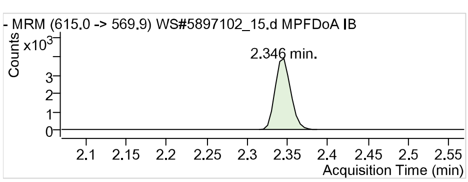


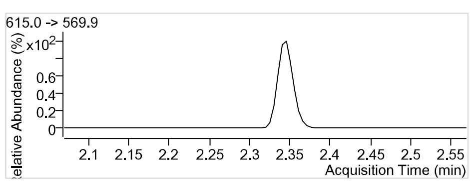
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



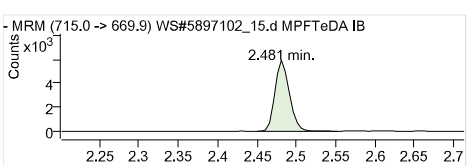


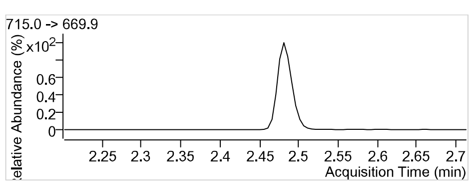
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	Sample



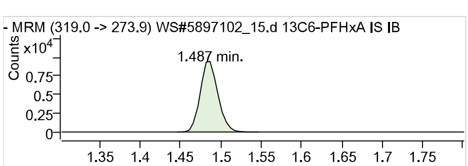


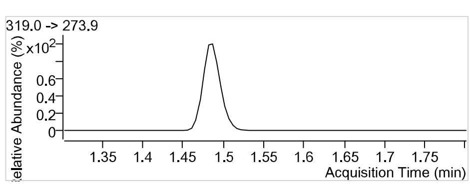
MPFDoA	Internal Standard
RT (Exp. RT):	2.346 (2.346)
Concentration:	1 µg/L
Sample type:	Sample



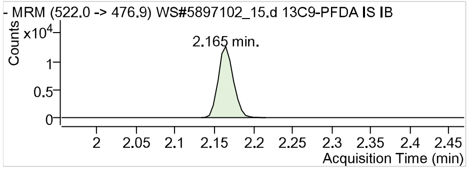


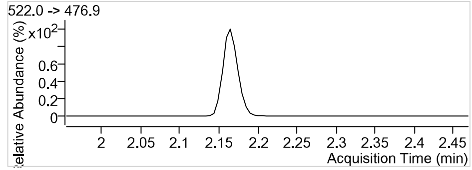
MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	Sample



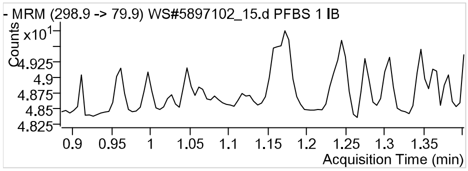


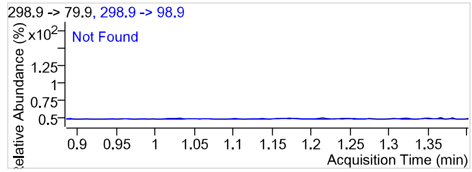
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



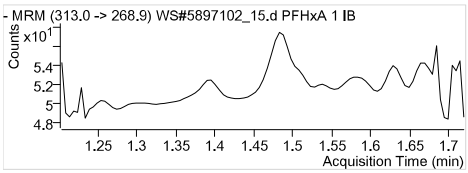


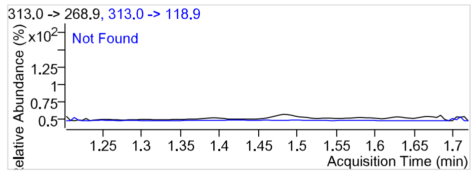
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



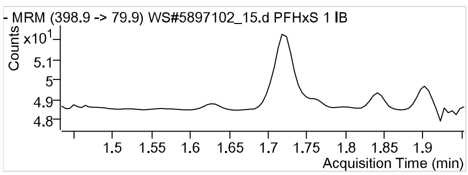


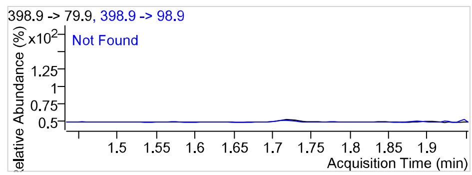
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	0.000 (1.162)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



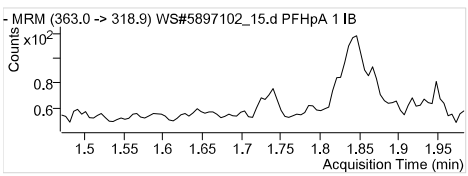


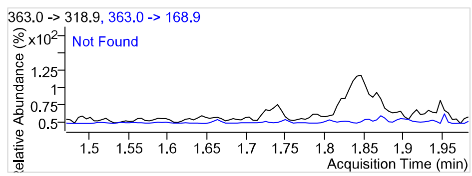
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	0.000 (1.488)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



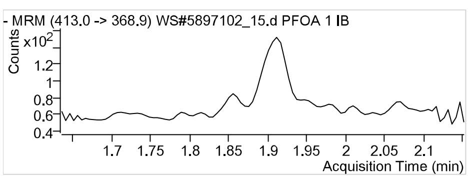


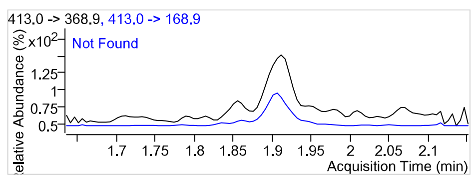
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	0.000 (1.713)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



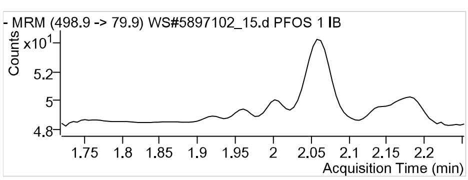


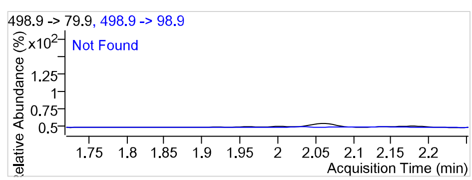
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	0.000 (1.735)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



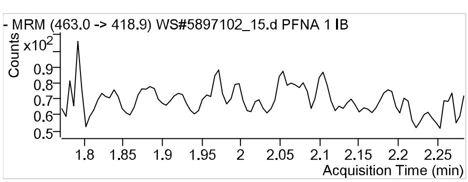


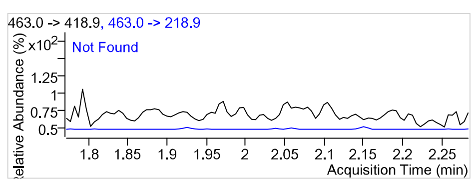
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	0.000 (1.912)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



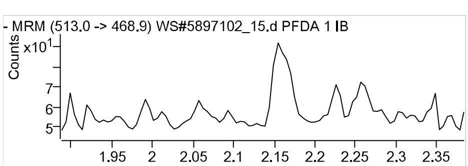


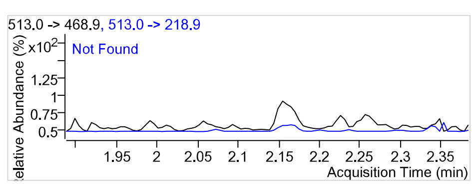
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	0.000 (2.002)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



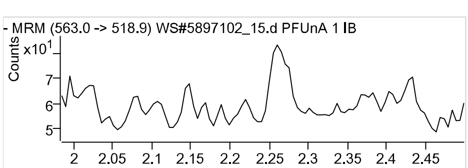


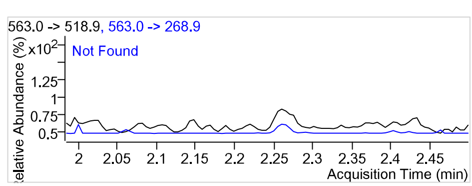
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	0.000 (2.053)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample





PFDA 1	513.0 -> 468.9
RT (Exp. RT):	0.000 (2.165)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample





PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	0.000 (2.260)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

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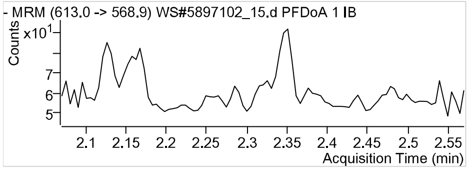
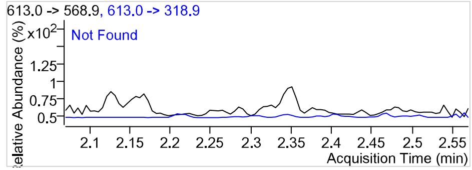
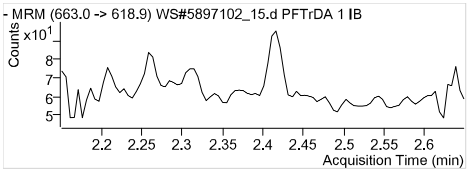
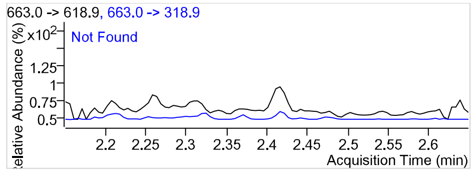


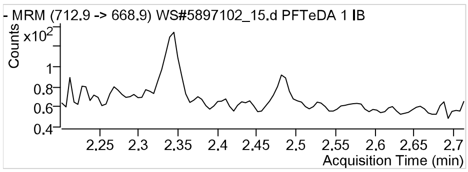


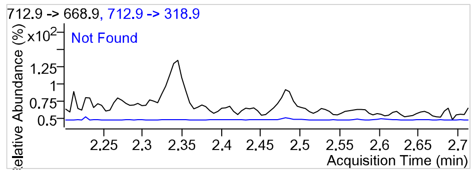
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.346)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



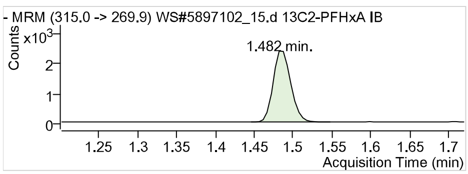


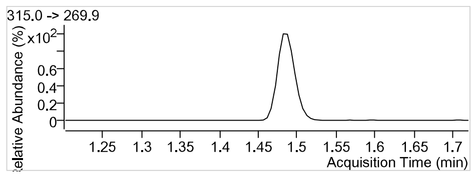
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	0.000 (2.416)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



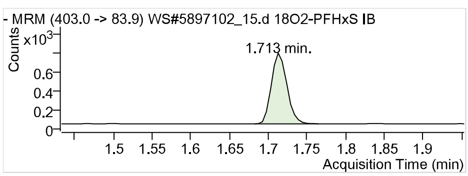


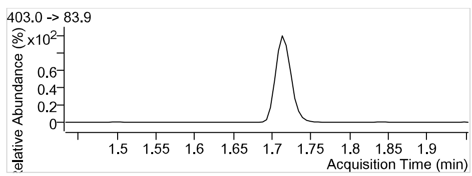
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.481)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



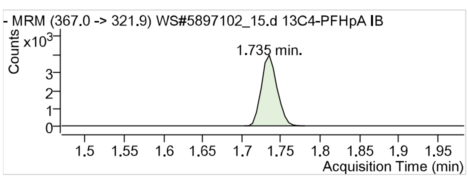


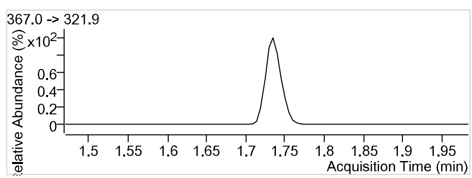
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.482 (1.487)
Calc. conc.	97.38 µg/L
Area ratio:	0.26140
Sample type:	Sample



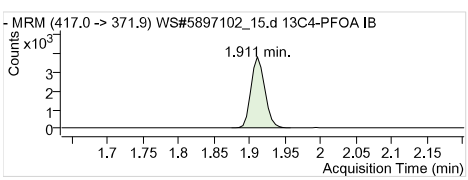


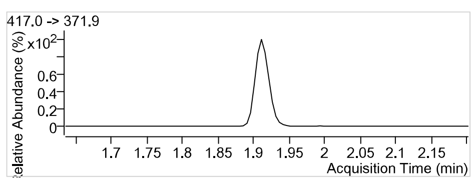
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	100.43 µg/L
Area ratio:	0.07179
Sample type:	Sample



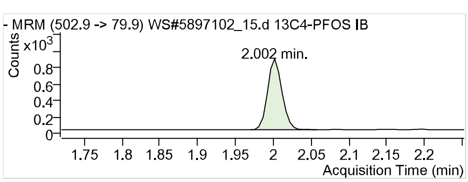


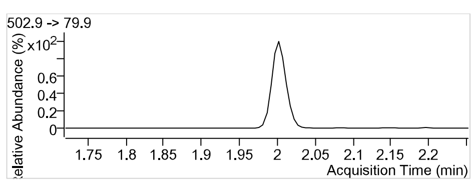
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	96.19 µg/L
Area ratio:	0.38089
Sample type:	Sample



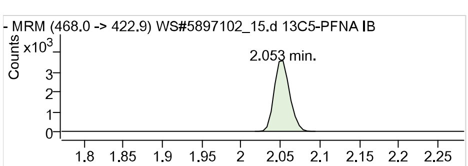


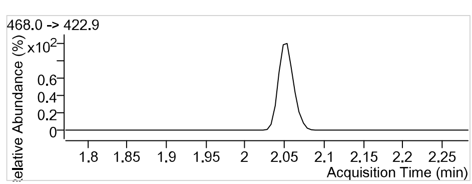
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	96.84 µg/L
Area ratio:	0.35205
Sample type:	Sample



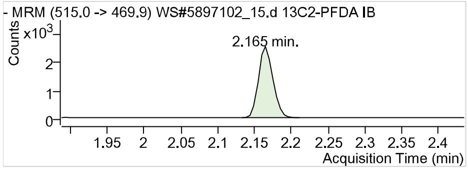


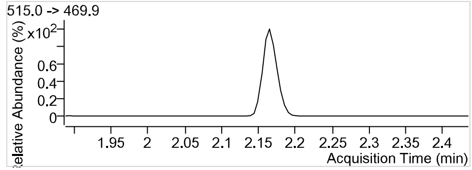
13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	99.43 µg/L
Area ratio:	0.07864
Sample type:	Sample



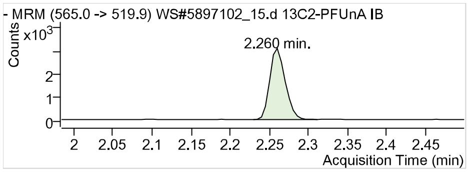


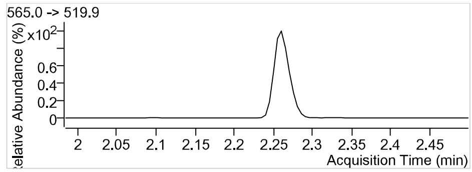
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	101.28 µg/L
Area ratio:	0.33997
Sample type:	Sample



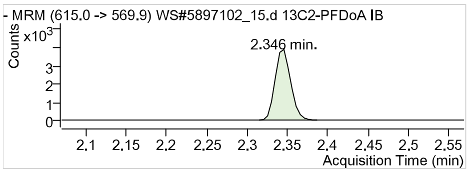


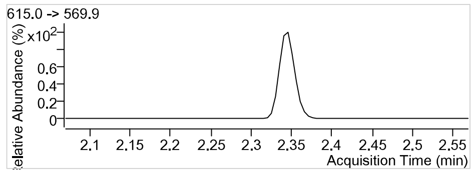
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	100.13 µg/L
Area ratio:	0.20408
Sample type:	Sample



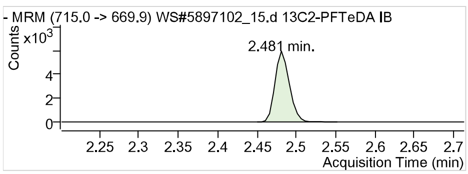


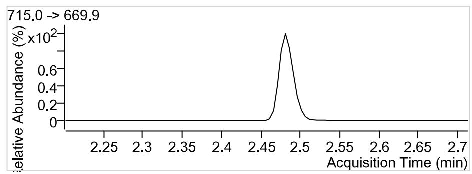
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	104.81 µg/L
Area ratio:	0.24916
Sample type:	Sample



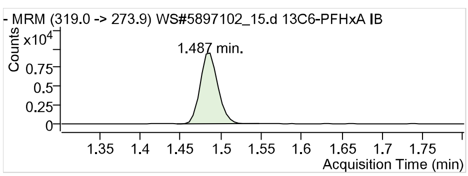


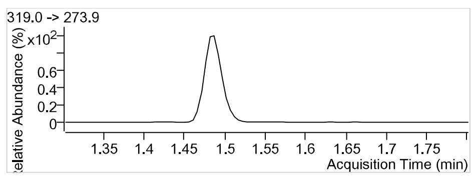
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	99.73 µg/L
Area ratio:	0.30630
Sample type:	Sample



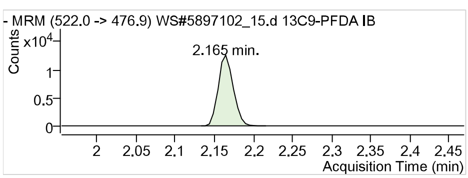


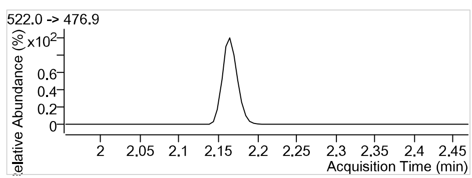
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	100.28 µg/L
Area ratio:	0.44235
Sample type:	Sample





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.34 µg/L
Area ratio:	0
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.35 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

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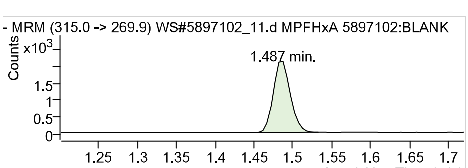
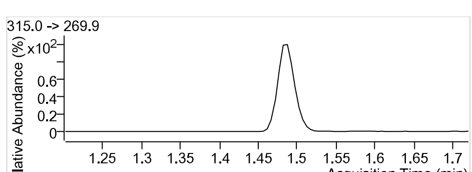
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	**5897102:BLANK**	**Instrument**	LCMS04
Data File	WS#5897102_11.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-B1
Acq. Date	2018/12/21 8:11:06 PM	**Injection Volume**	Per Method
Sample Annotation	-		

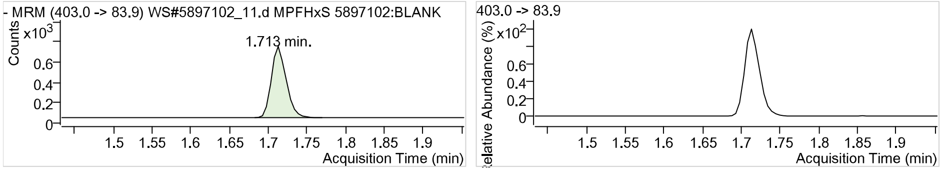
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3199	1.49	1 µg/L		
MPFHxS	922	1.71	1 µg/L		
MPFHpA	4906	1.73	1 µg/L		
MPFOA	4621	1.91	1 µg/L		
MPFOS	978	2.00	1 µg/L		
MPFNA	4083	2.05	1 µg/L		
MPFDA	2780	2.16	1 µg/L		
MPFUnA	3331	2.26	1 µg/L		
MPFDoA	4038	2.35	1 µg/L		
MPFTeDA	5488	2.48	1 µg/L		
13C6-PFHxA IS	15352	1.49	1 µg/L		
13C9-PFDA IS	18298	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3199	1.49	-	77.63 µg/L	-
18O2-PFHxS	922	1.71	-	84.01 µg/L	-
13C4-PFHpA	4906	1.73	-	80.70 µg/L	-
13C4-PFOA	4621	1.91	-	82.80 µg/L	-
13C4-PFOS	978	2.00	-	80.55 µg/L	-
13C5-PFNA	4083	2.05	-	79.23 µg/L	-
13C2-PFDA	2780	2.16	-	74.54 µg/L	-
13C2-PFUnA	3331	2.26	-	76.58 µg/L	-
13C2-PFDoA	4038	2.35	-	71.85 µg/L	-
13C2-PFTeDA	5488	2.48	-	67.99 µg/L	-
13C6-PFHxA	15352	1.49	-	2.51 µg/L	-
13C9-PFDA	18298	2.16	-	2.54 µg/L	-

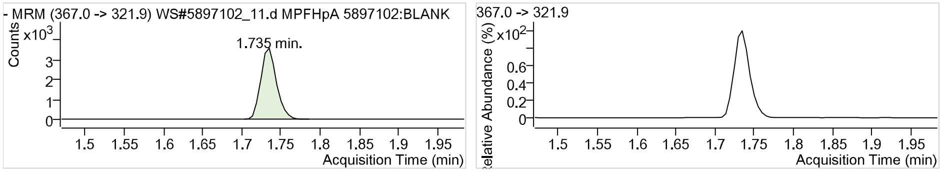




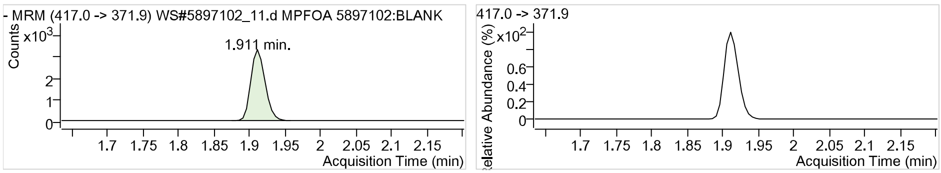
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



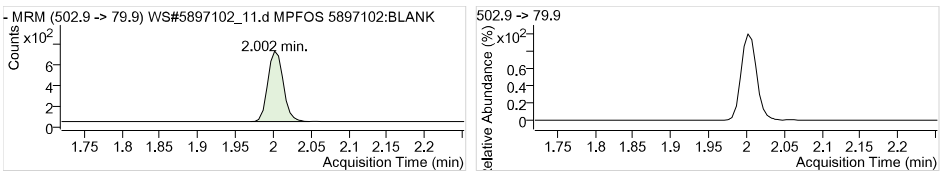
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: Sample



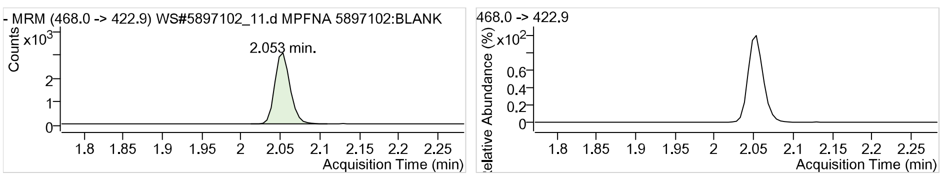
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: Sample



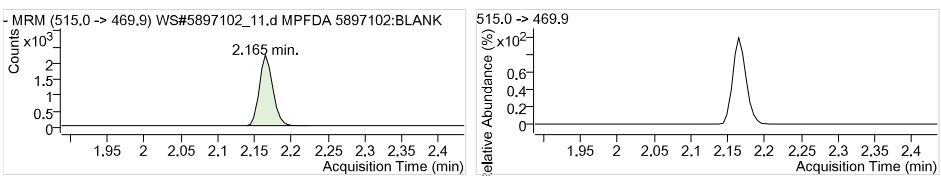
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: Sample



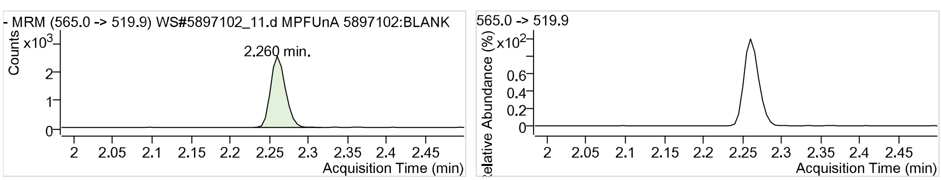
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: Sample



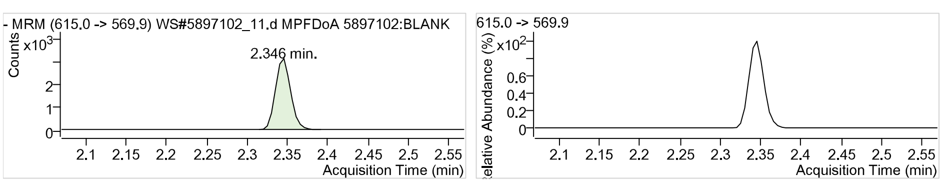
MPFNA Internal Standard
RT (Exp. RT): 2.053 (2.053)
Concentration: 1 µg/L
Sample type: Sample



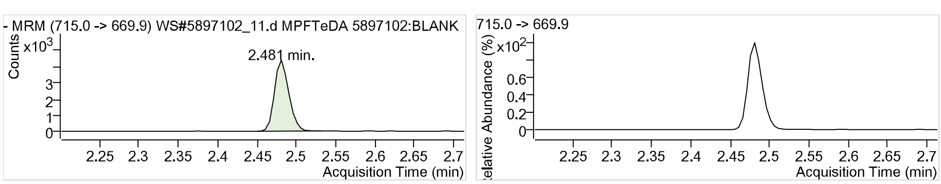
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



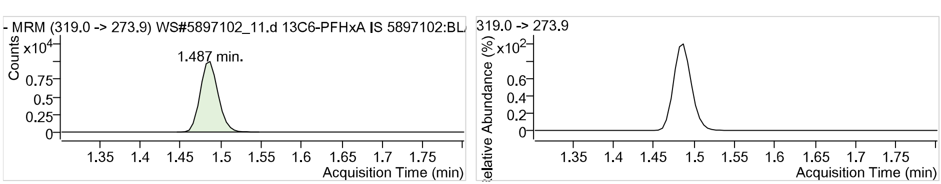
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: Sample



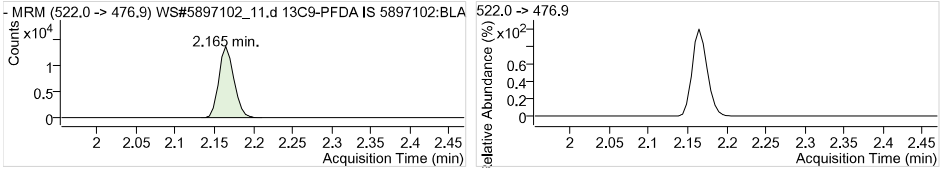
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: Sample



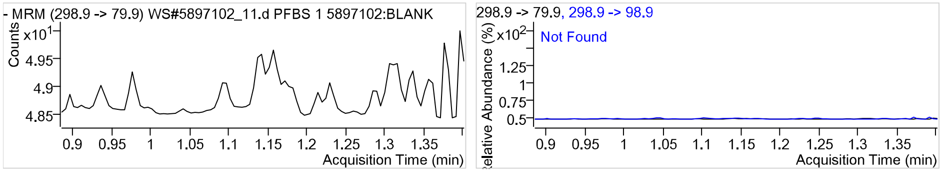
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: Sample



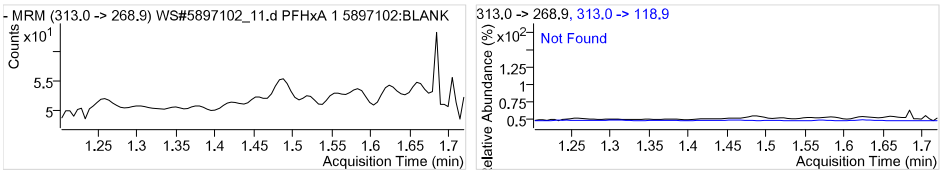
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.487 (1.487)
Concentration: 1 µg/L
Sample type: Sample



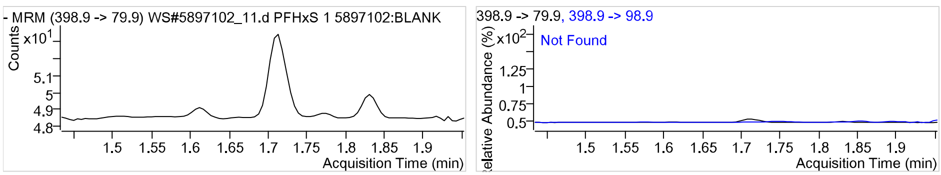
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



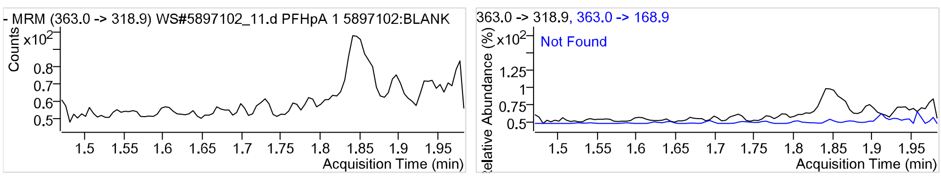
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.162)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



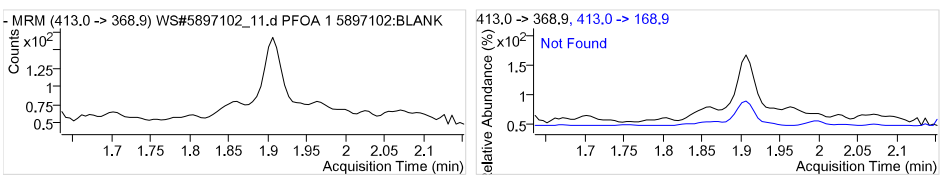
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.488)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



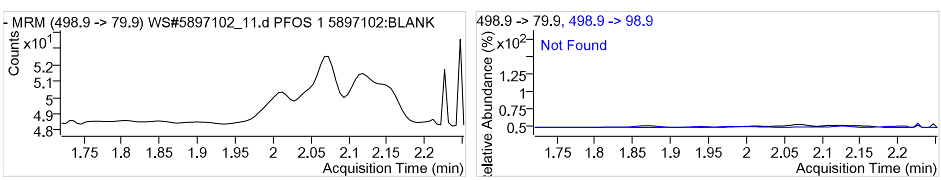
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.713)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



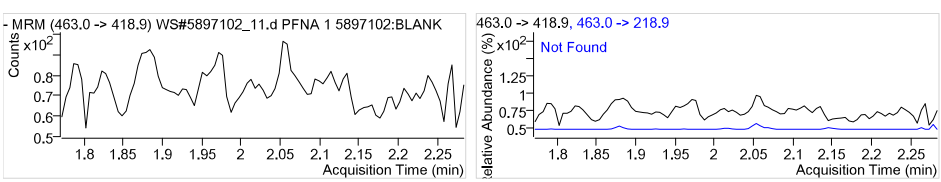
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.735)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



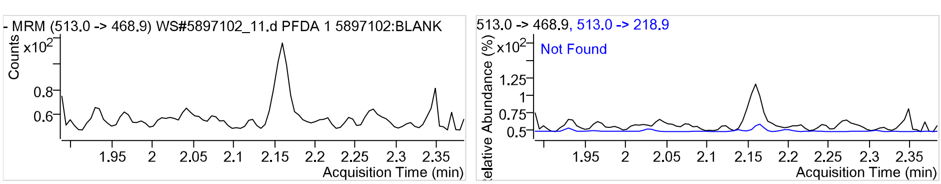
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.912)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



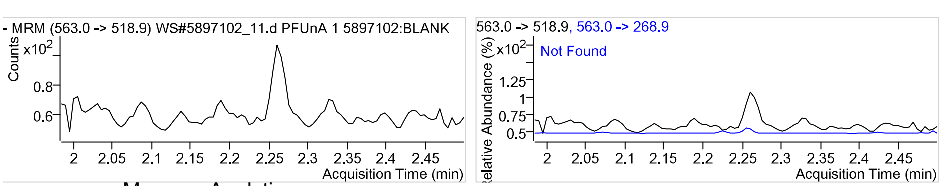
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 0.000 (2.002)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



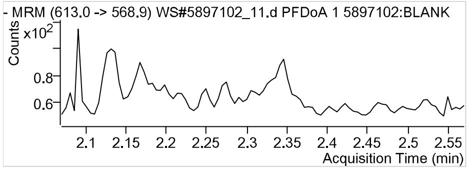
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.053)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample

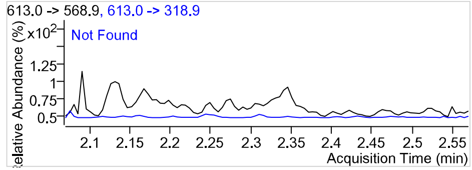


PFDA 1 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.165)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample

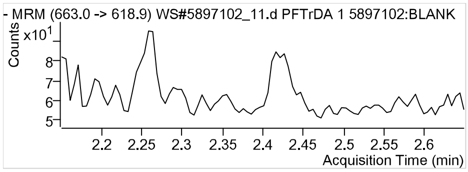


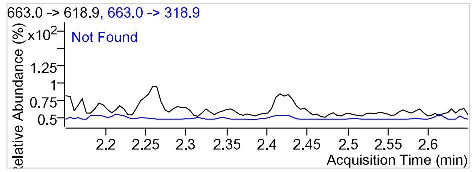
PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.260)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



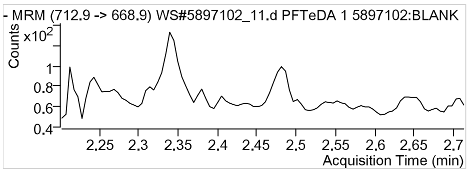


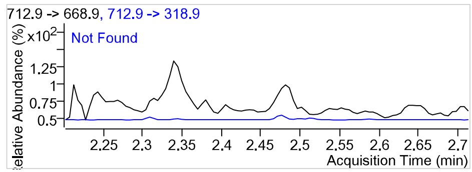
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.346)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



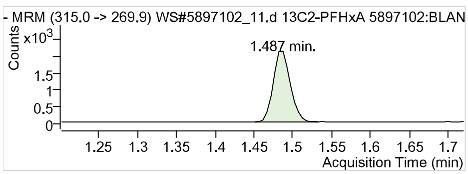


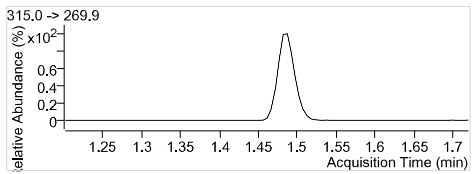
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	0.000 (2.416)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



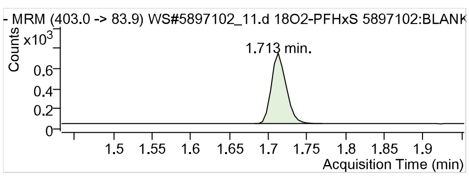


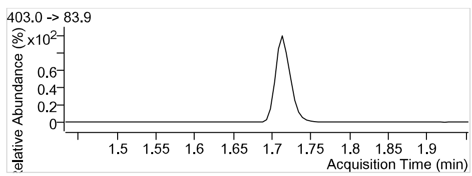
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.481)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



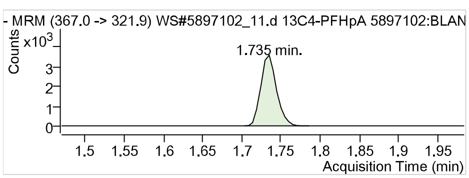


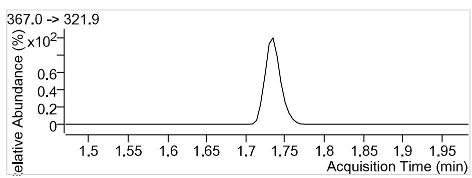
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	77.63 µg/L
Area ratio:	0.20838
Sample type:	Sample



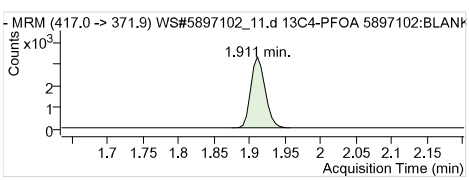


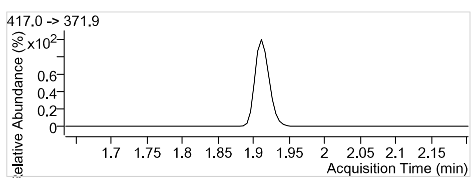
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	84.01 µg/L
Area ratio:	0.06006
Sample type:	Sample



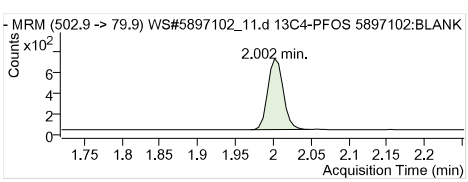


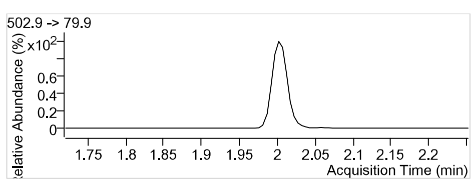
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	80.70 µg/L
Area ratio:	0.31957
Sample type:	Sample



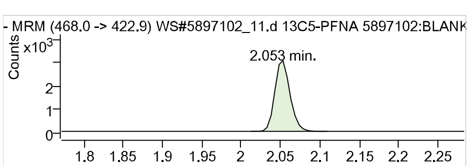


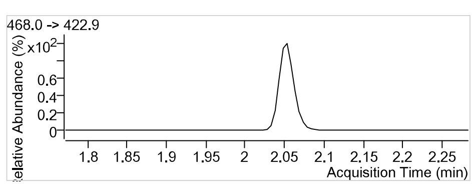
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	82.80 µg/L
Area ratio:	0.30100
Sample type:	Sample



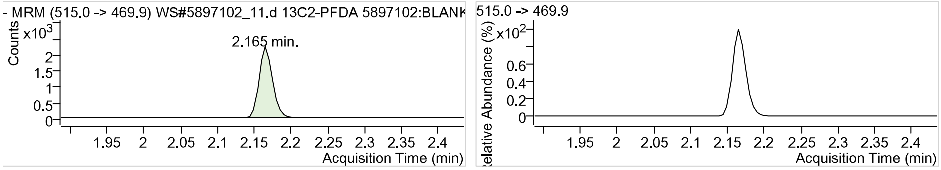


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	80.55 µg/L
Area ratio:	0.06371
Sample type:	Sample

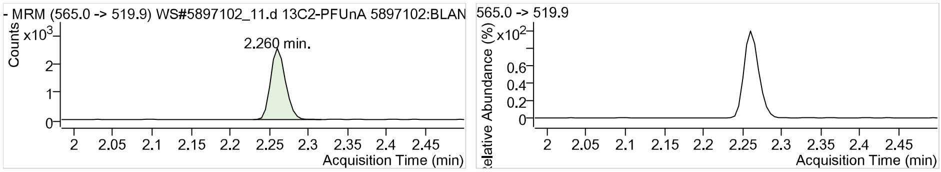




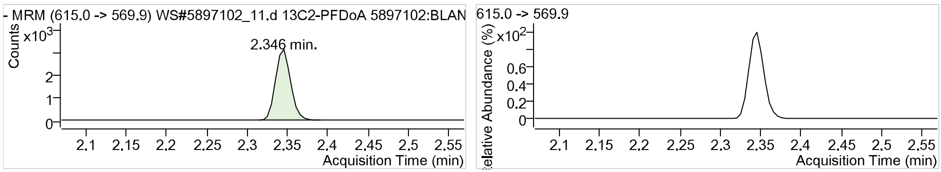
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	79.23 µg/L
Area ratio:	0.26596
Sample type:	Sample



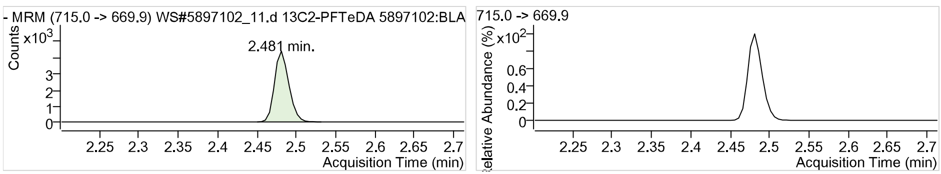
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	74.54 µg/L
Area ratio:	0.15193
Sample type:	Sample



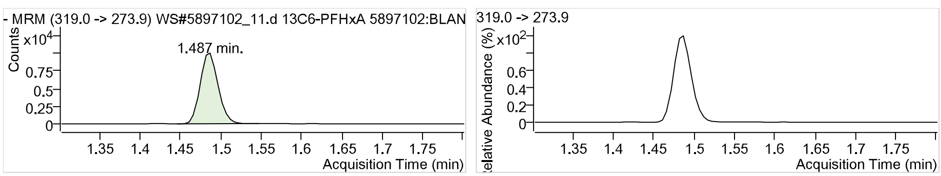
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	76.58 µg/L
Area ratio:	0.18204
Sample type:	Sample



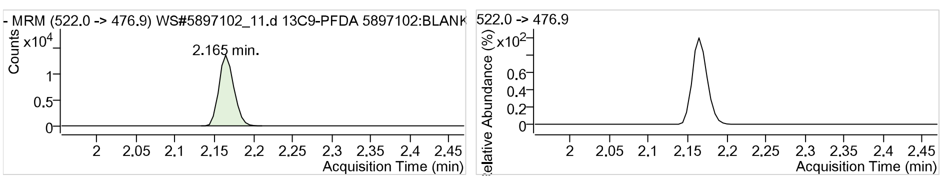
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	71.85 µg/L
Area ratio:	0.22068
Sample type:	Sample



13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	67.99 µg/L
Area ratio:	0.29992
Sample type:	Sample



13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.51 µg/L
Area ratio:	0
Sample type:	Sample



13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.54 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

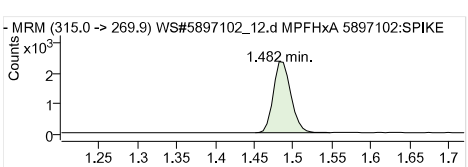
Agilent Technologies

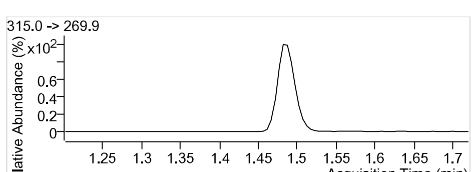
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	**5897102:SPIKE**	**Instrument**	LCMS04
Data File	WS#5897102_12.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-B2
Acq. Date	2018/12/21 8:16:01 PM	**Injection Volume**	Per Method
Sample Annotation	-		

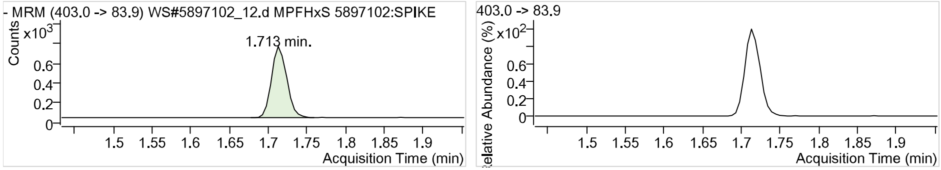
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3664	1.48	1 µg/L		
MPFHxS	969	1.71	1 µg/L		
MPFHpA	5214	1.73	1 µg/L		
MPFOA	4961	1.91	1 µg/L		
MPFOS	1001	2.00	1 µg/L		
MPFNA	4705	2.05	1 µg/L		
MPFDA	3280	2.16	1 µg/L		
MPFUnA	3833	2.26	1 µg/L		
MPFDoA	4463	2.34	1 µg/L		
MPFTeDA	6246	2.48	1 µg/L		
13C6-PFHxA IS	15277	1.49	1 µg/L		
13C9-PFDA IS	17855	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	12139	1.15	20.80	0.50 µg/L	100.46
PFHxA 1	35487	1.49	20.80	0.51 µg/L	102.73
PFHxS 1	9440	1.71	20.80	0.52 µg/L	103.36
PFHpA 1	50039	1.74	20.80	0.54 µg/L	107.62
PFOA 1	47662	1.91	20.80	0.52 µg/L	104.16
PFOS 1	9376	2.00	20.80	0.54 µg/L	109.01
PFNA 1	36485	2.05	20.80	0.50 µg/L	99.40
PFDA 1	40059	2.16	20.80	0.51 µg/L	101.78
PFUnA 1	36004	2.26	20.80	0.50 µg/L	99.47
PFDoA 1	40211	2.34	20.80	0.55 µg/L	109.55
PFTrDA 1	48773	2.42	20.80	0.54 µg/L	107.80
PFTeDA 1	50422	2.48	20.80	0.53 µg/L	106.64
13C2-PFHxA	3664	1.48	100.00	89.35 µg/L	89.35
18O2-PFHxS	969	1.71	100.00	88.73 µg/L	88.73
13C4-PFHpA	5214	1.73	100.00	86.19 µg/L	86.19
13C4-PFOA	4961	1.91	100.00	89.33 µg/L	89.33
13C4-PFOS	1001	2.00	100.00	82.85 µg/L	82.85
13C5-PFNA	4705	2.05	100.00	91.75 µg/L	91.75
13C2-PFDA	3280	2.16	100.00	90.13 µg/L	90.13
13C2-PFUnA	3833	2.26	100.00	90.30 µg/L	90.30
13C2-PFDoA	4463	2.34	100.00	81.38 µg/L	81.38
13C2-PFTeDA	6246	2.48	100.00	79.30 µg/L	79.30
13C6-PFHxA	15277	1.49	100.00	2.50 µg/L	104.06
13C9-PFDA	17855	2.16	100.00	2.48 µg/L	103.31

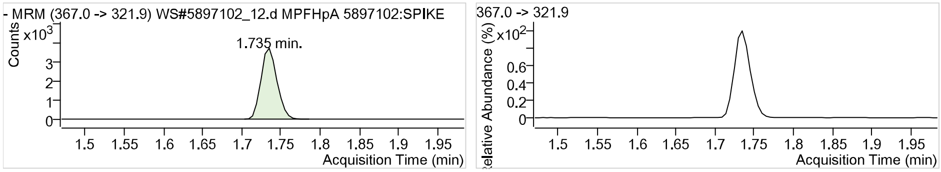




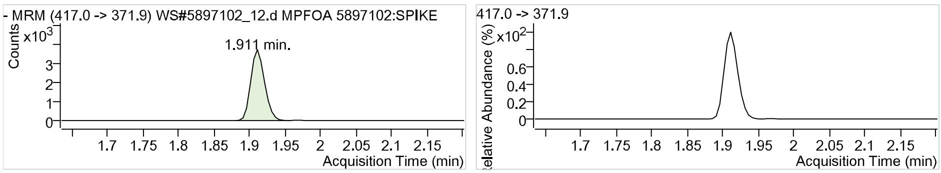
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	QC



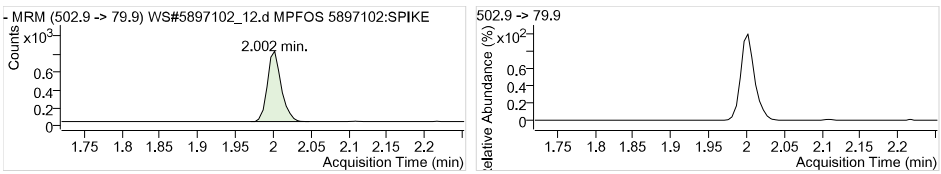
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	QC



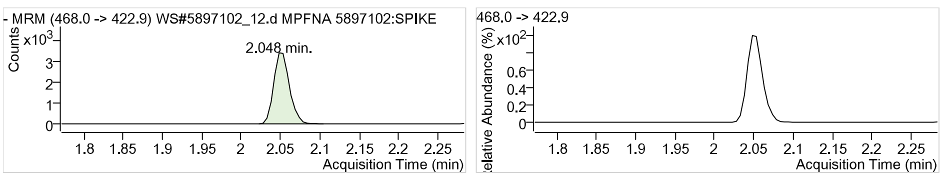
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	QC



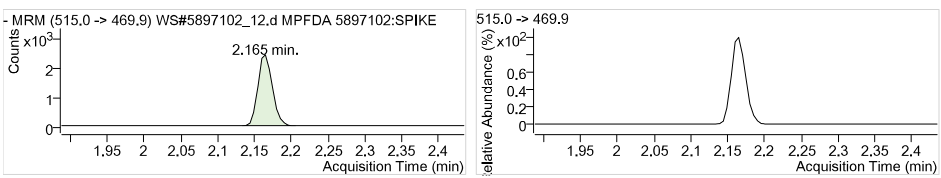
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	QC



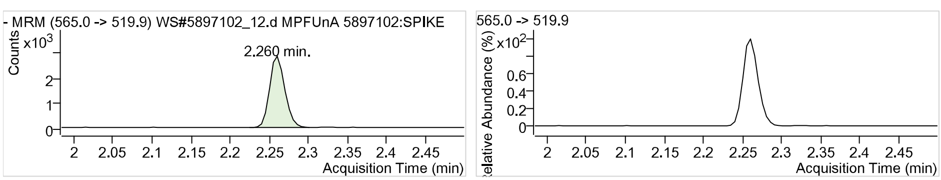
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	QC



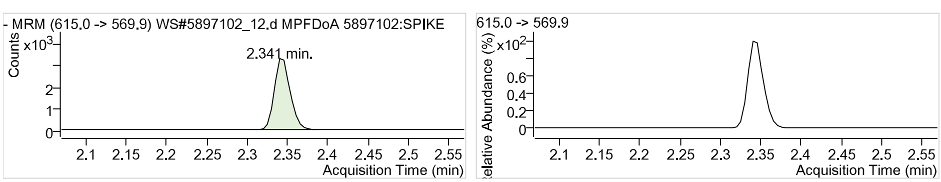
MPFNA	Internal Standard
RT (Exp. RT):	2.048 (2.053)
Concentration:	1 µg/L
Sample type:	QC



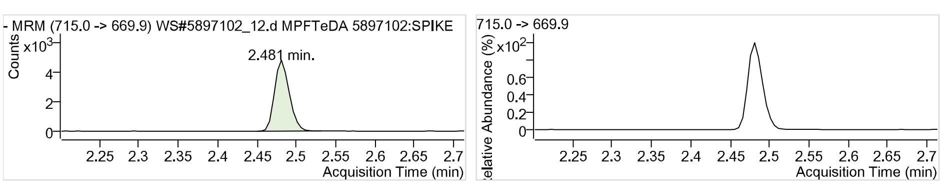
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	QC



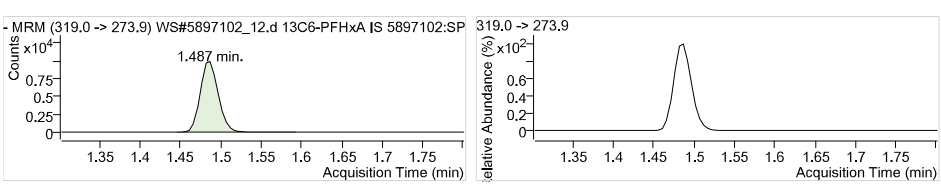
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	QC



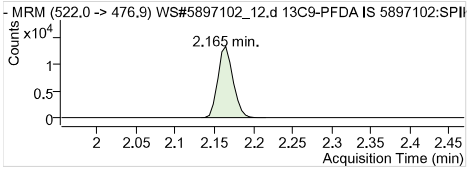
MPFDoA	Internal Standard
RT (Exp. RT):	2.341 (2.346)
Concentration:	1 µg/L
Sample type:	QC

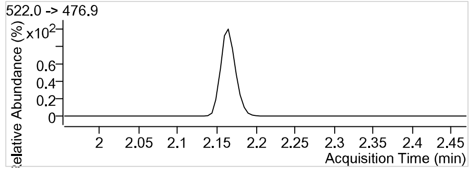


MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	QC

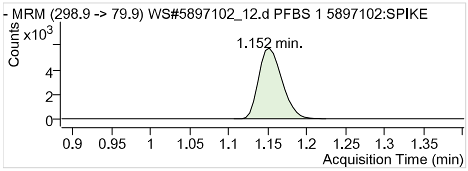


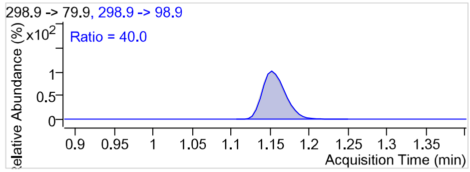
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	QC



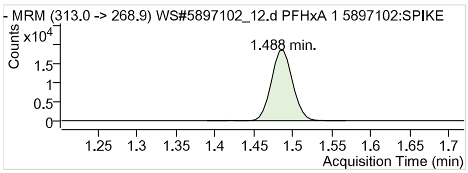


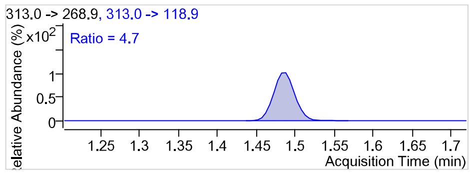
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



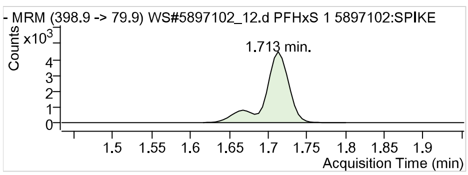


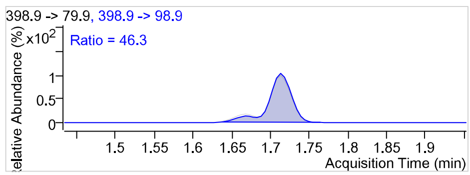
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 1.152 (1.162)
Calc. conc. 0.50 µg/L
Area ratio: 12.52735
Sample type: QC



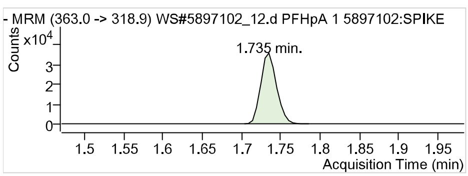


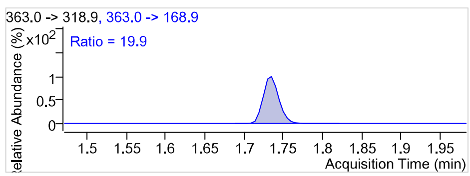
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 1.488 (1.488)
Calc. conc. 0.51 µg/L
Area ratio: 9.68532
Sample type: QC



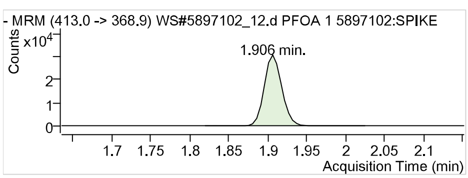


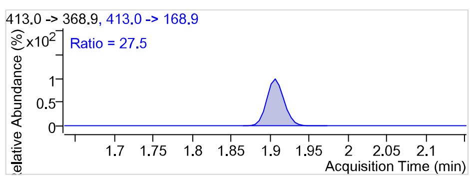
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 0.52 µg/L
Area ratio: 9.74200
Sample type: QC



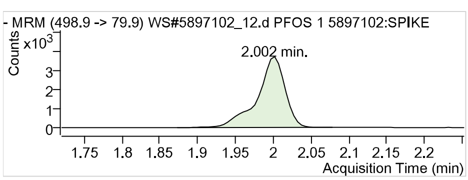


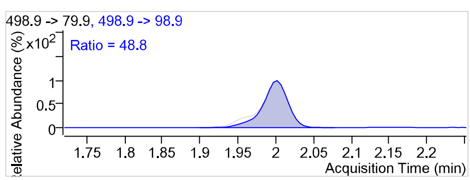
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 0.54 µg/L
Area ratio: 9.59705
Sample type: QC



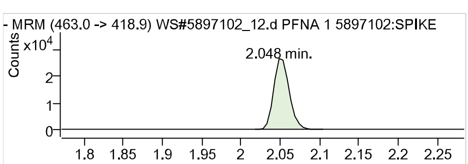


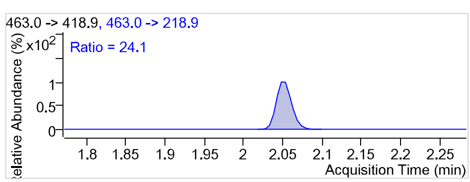
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 1.906 (1.912)
Calc. conc. 0.52 µg/L
Area ratio: 9.60734
Sample type: QC



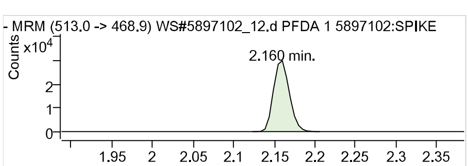


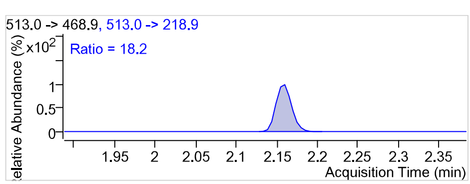
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 0.54 µg/L
Area ratio: 9.36663
Sample type: QC



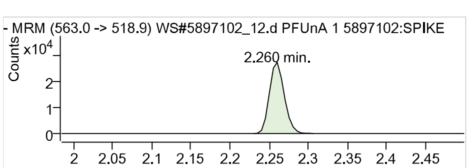


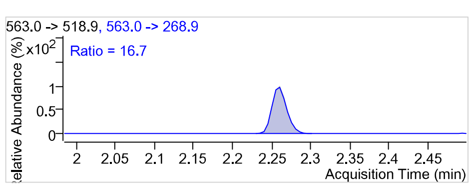
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 2.048 (2.053)
Calc. conc. 0.50 µg/L
Area ratio: 7.75452
Sample type: QC



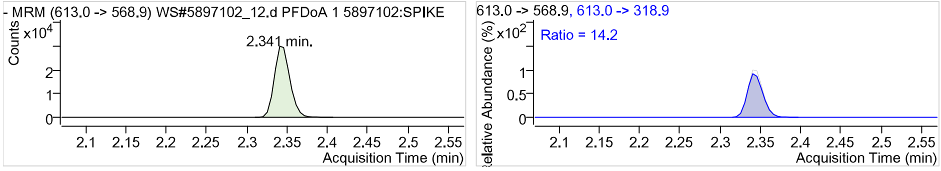


PFDA 1 513.0 -> 468.9
RT (Exp. RT): 2.160 (2.165)
Calc. conc. 0.51 µg/L
Area ratio: 12.21311
Sample type: QC

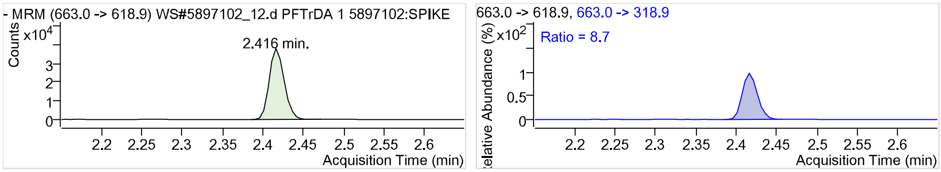




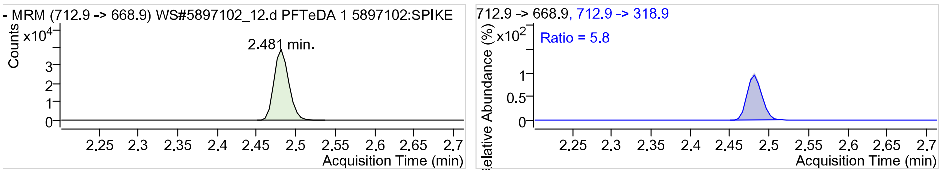
PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 0.50 µg/L
Area ratio: 9.39316
Sample type: QC



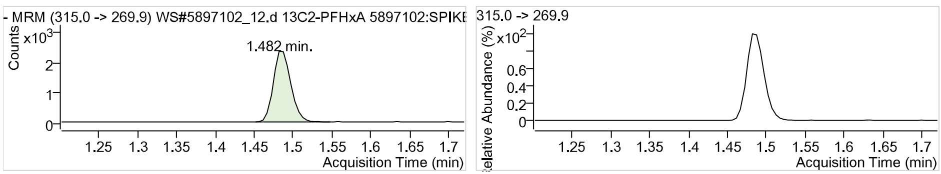
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	2.341 (2.346)
Calc. conc.	0.55 µg/L
Area ratio:	9.00986
Sample type:	QC



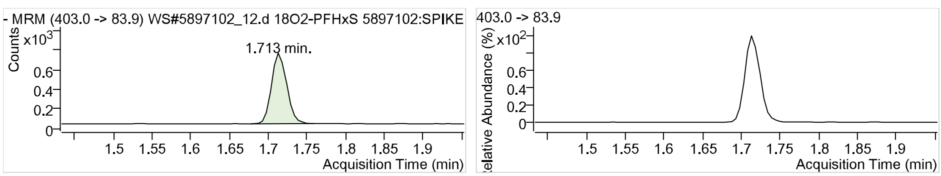
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	2.416 (2.416)
Calc. conc.	0.54 µg/L
Area ratio:	7.80868
Sample type:	QC



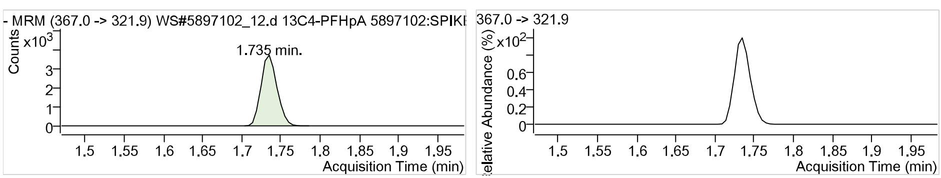
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	0.53 µg/L
Area ratio:	8.07269
Sample type:	QC



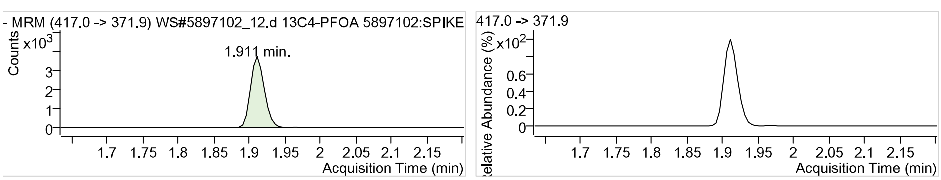
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.482 (1.487)
Calc. conc.	89.35 µg/L
Area ratio:	0.23984
Sample type:	QC



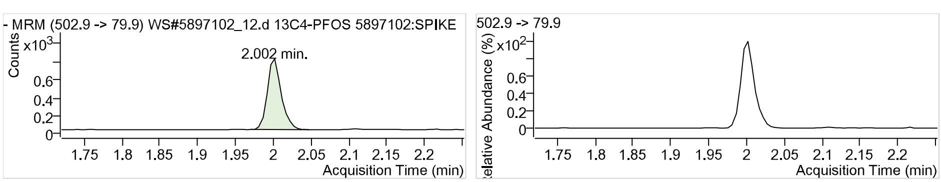
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	88.73 µg/L
Area ratio:	0.06343
Sample type:	QC



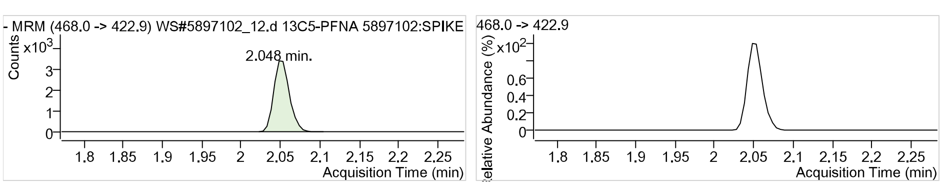
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	86.19 µg/L
Area ratio:	0.34130
Sample type:	QC



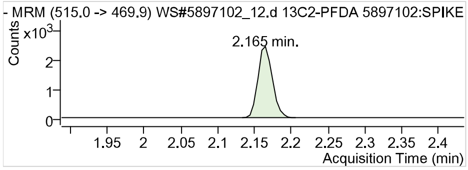
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	89.33 µg/L
Area ratio:	0.32474
Sample type:	QC

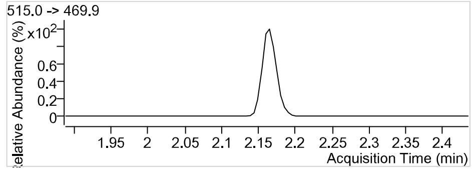


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	82.85 µg/L
Area ratio:	0.06552
Sample type:	QC

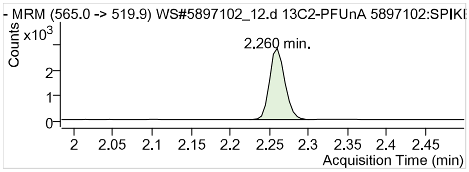


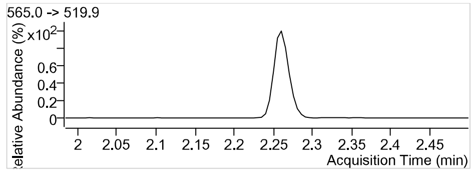
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.048 (2.053)
Calc. conc.	91.75 µg/L
Area ratio:	0.30798
Sample type:	QC



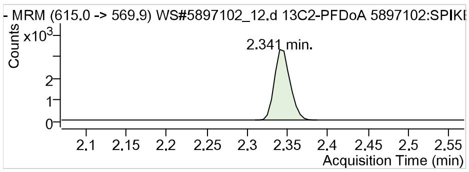


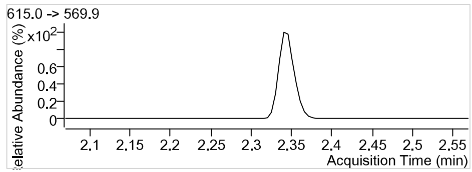
13C2-PFDA 515.0 -> 469.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 90.13 µg/L
Area ratio: 0.18370
Sample type: QC



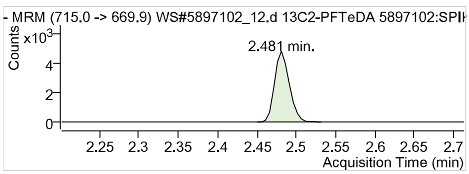


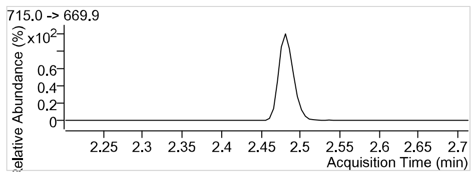
13C2-PFUnA 565.0 -> 519.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 90.30 µg/L
Area ratio: 0.21467
Sample type: QC



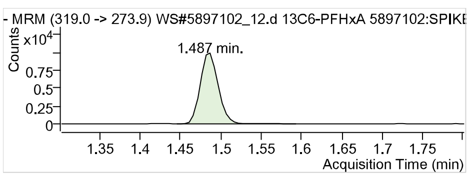


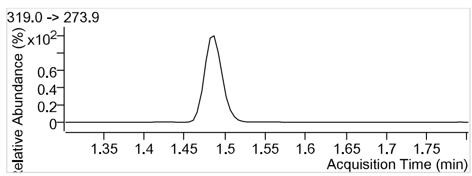
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.341 (2.346)
Calc. conc. 81.38 µg/L
Area ratio: 0.24996
Sample type: QC



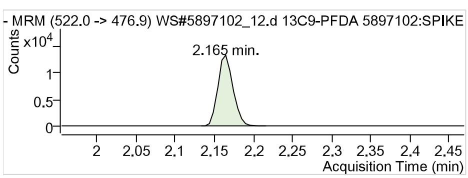


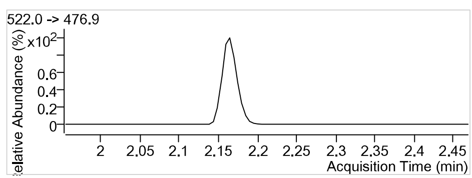
13C2-PFTeDA 715.0 -> 669.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 79.30 µg/L
Area ratio: 0.34982
Sample type: QC





13C6-PFHxA 319.0 -> 273.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 2.50 µg/L
Area ratio: 0
Sample type: QC





13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 2.48 µg/L
Area ratio: 0
Sample type: QC

Quantitation Results

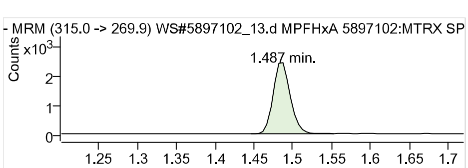
Agilent Technologies

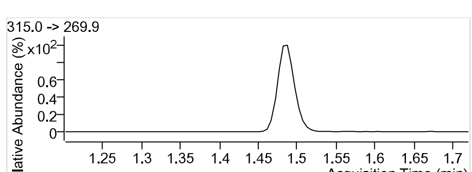
Batch Path T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	**5897102:MTRX SPK**	**Instrument**	LCMS04
Data File	WS#5897102_13.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-B3
Acq. Date	2018/12/21 8:20:55 PM	**Injection Volume**	Per Method
Sample Annotation	IOF254		

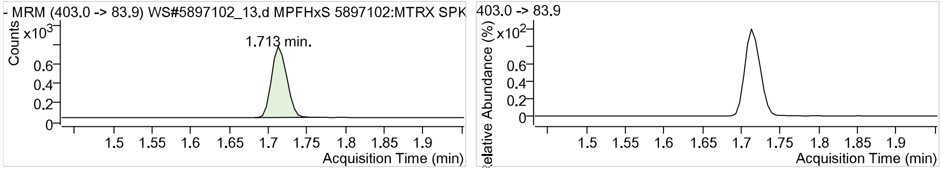
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3670	1.49	1 µg/L		
MPFHxS	981	1.71	1 µg/L		
MPFHpA	5458	1.73	1 µg/L		
MPFOA	5103	1.91	1 µg/L		
MPFOS	1052	2.00	1 µg/L		
MPFNA	4677	2.05	1 µg/L		
MPFDA	3126	2.16	1 µg/L		
MPFUnA	3961	2.26	1 µg/L		
MPFDoA	4384	2.35	1 µg/L		
MPFTeDA	6238	2.48	1 µg/L		
13C6-PFHxA IS	15221	1.49	1 µg/L		
13C9-PFDA IS	18224	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	6232	1.15	10.40	0.25 µg/L	102.12
PFHxA 1	18287	1.49	10.40	0.26 µg/L	105.79
PFHxS 1	4923	1.71	10.40	0.27 µg/L	106.74
PFHpA 1	25172	1.74	10.40	0.26 µg/L	103.97
PFOA 1	24366	1.91	10.40	0.26 µg/L	103.55
PFOS 1	5293	2.00	10.40	0.29 µg/L	117.13
PFNA 1	18004	2.05	10.40	0.25 µg/L	98.87
PFDA 1	20417	2.16	10.40	0.27 µg/L	109.09
PFUnA 1	18661	2.26	10.40	0.25 µg/L	99.67
PFDoA 1	19679	2.34	10.40	0.27 µg/L	108.93
PFTrDA 1	23749	2.42	10.40	0.26 µg/L	105.24
PFTeDA 1	25329	2.48	10.40	0.27 µg/L	107.25
13C2-PFHxA	3670	1.49	100.00	89.83 µg/L	89.83
18O2-PFHxS	981	1.71	100.00	90.16 µg/L	90.16
13C4-PFHpA	5458	1.73	100.00	90.56 µg/L	90.56
13C4-PFOA	5103	1.91	100.00	92.22 µg/L	92.22
13C4-PFOS	1052	2.00	100.00	87.39 µg/L	87.39
13C5-PFNA	4677	2.05	100.00	91.54 µg/L	91.54
13C2-PFDA	3126	2.16	100.00	84.16 µg/L	84.16
13C2-PFUnA	3961	2.26	100.00	91.43 µg/L	91.43
13C2-PFDoA	4384	2.35	100.00	78.33 µg/L	78.33
13C2-PFTeDA	6238	2.48	100.00	77.59 µg/L	77.59
13C6-PFHxA	15221	1.49	100.00	2.49 µg/L	103.68
13C9-PFDA	18224	2.16	100.00	2.53 µg/L	105.44

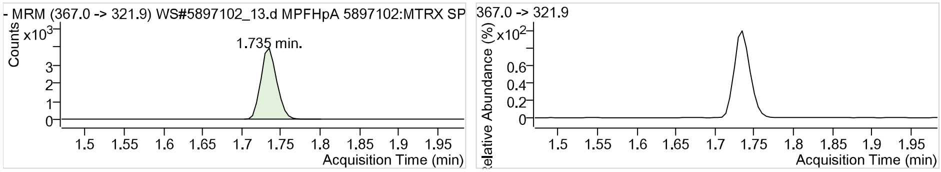




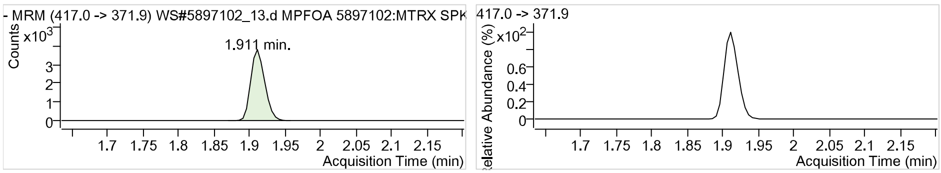
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	QC



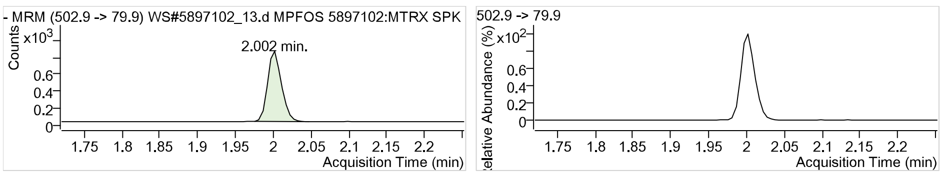
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	QC



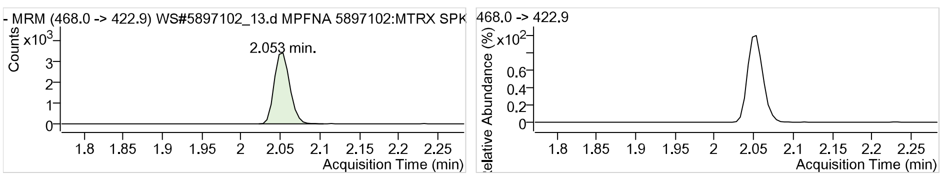
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	QC



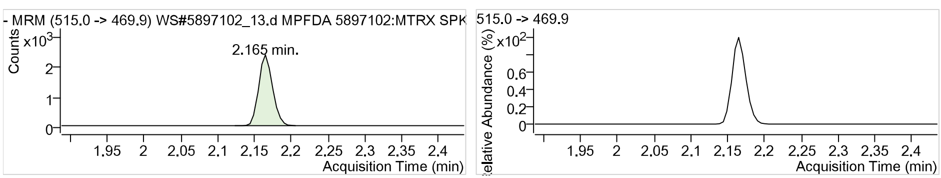
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	QC



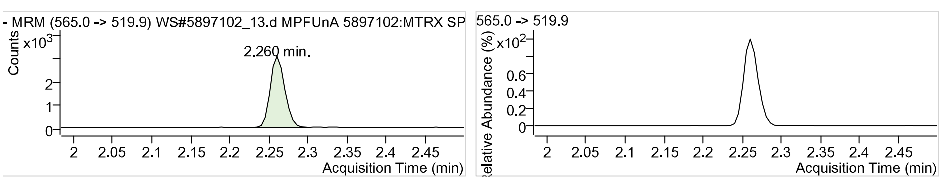
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	QC



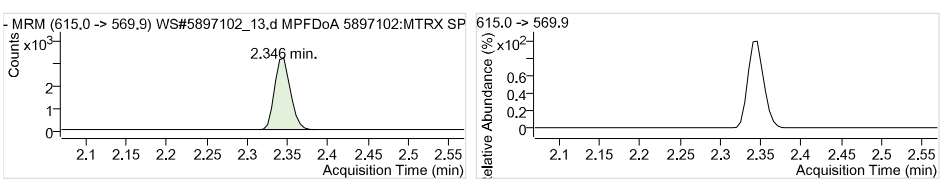
MPFNA	Internal Standard
RT (Exp. RT):	2.053 (2.053)
Concentration:	1 µg/L
Sample type:	QC



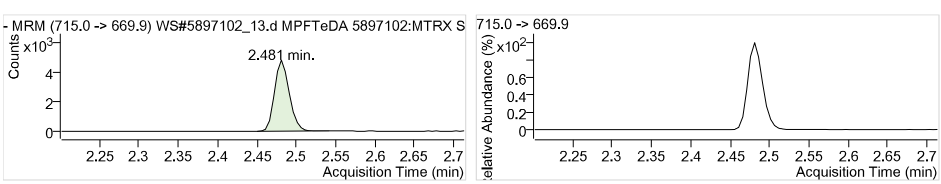
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	QC



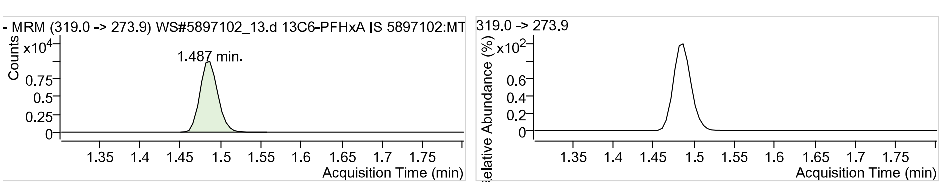
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	QC



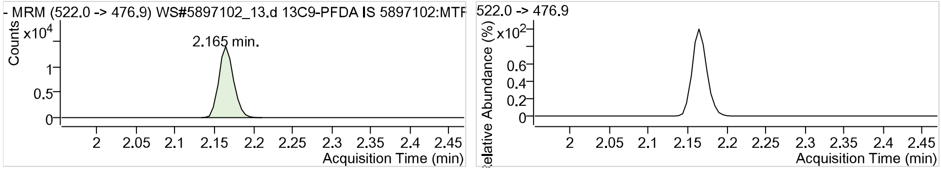
MPFDoA	Internal Standard
RT (Exp. RT):	2.346 (2.346)
Concentration:	1 µg/L
Sample type:	QC



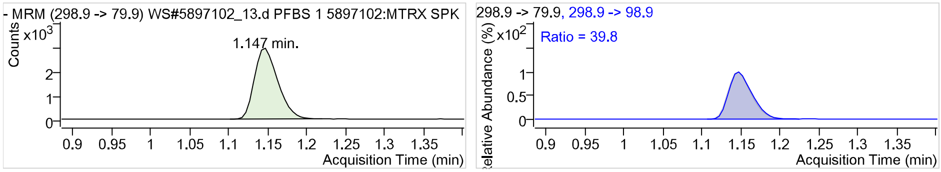
MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	QC



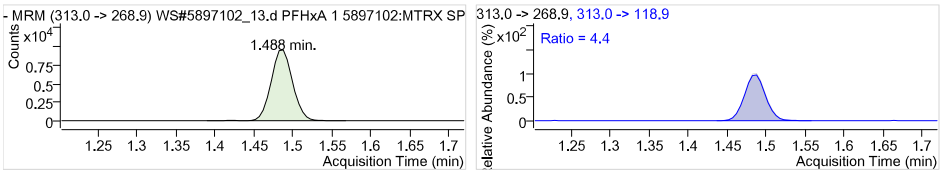
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	QC



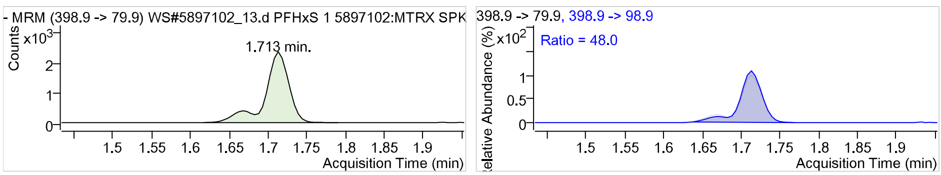
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	QC



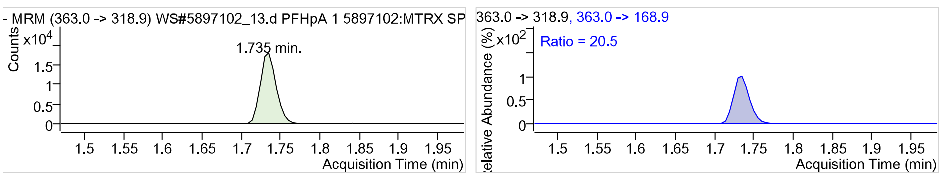
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	1.147 (1.162)
Calc. conc.	0.25 µg/L
Area ratio:	6.35270
Sample type:	QC



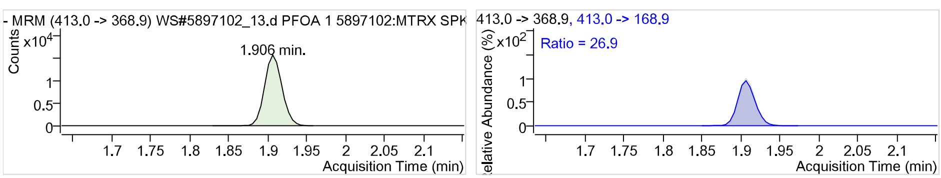
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	1.488 (1.488)
Calc. conc.	0.26 µg/L
Area ratio:	4.98283
Sample type:	QC



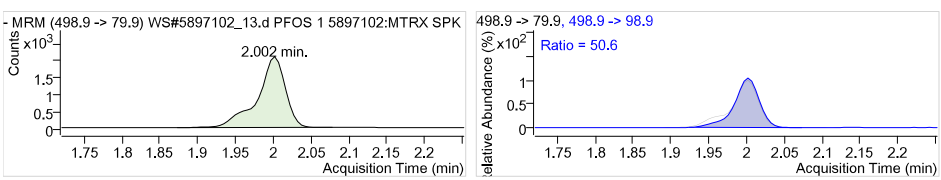
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	0.27 µg/L
Area ratio:	5.01835
Sample type:	QC



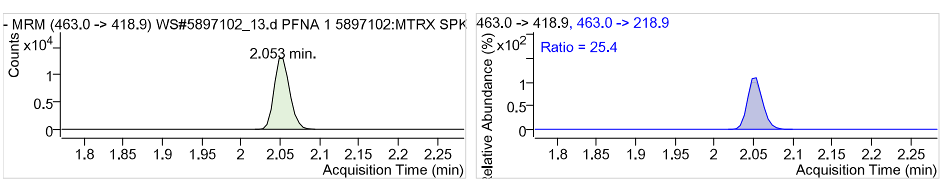
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	0.26 µg/L
Area ratio:	4.61195
Sample type:	QC



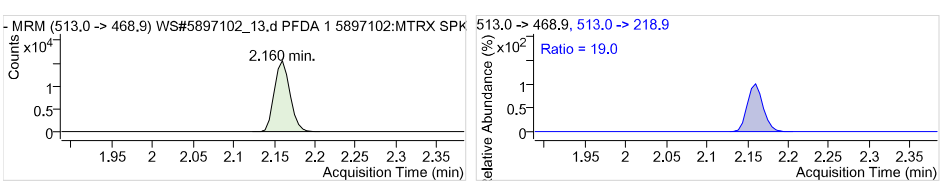
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	1.906 (1.912)
Calc. conc.	0.26 µg/L
Area ratio:	4.77484
Sample type:	QC



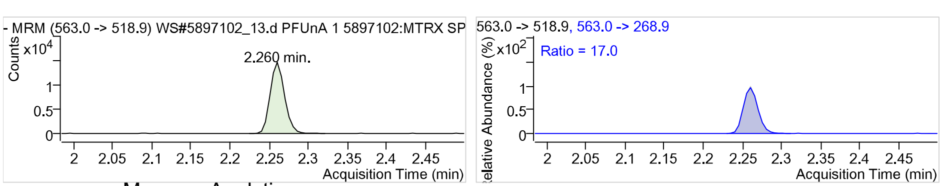
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	0.29 µg/L
Area ratio:	5.03137
Sample type:	QC



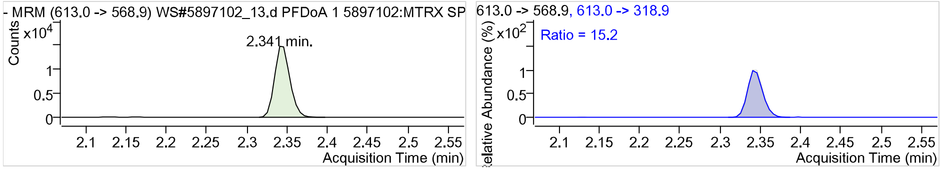
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	0.25 µg/L
Area ratio:	3.84948
Sample type:	QC



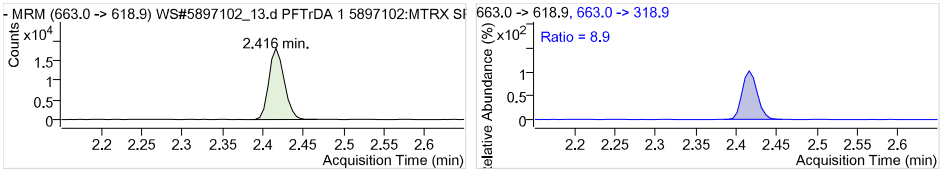
PFDA 1	513.0 -> 468.9
RT (Exp. RT):	2.160 (2.165)
Calc. conc.	0.27 µg/L
Area ratio:	6.53135
Sample type:	QC



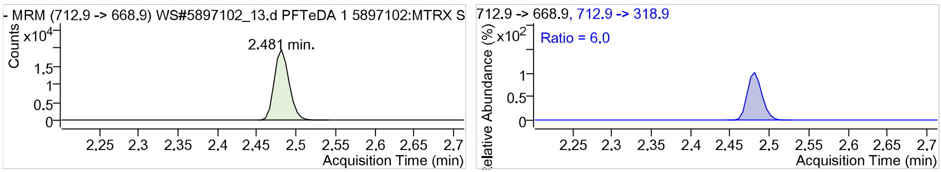
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	0.25 µg/L
Area ratio:	4.71118
Sample type:	QC



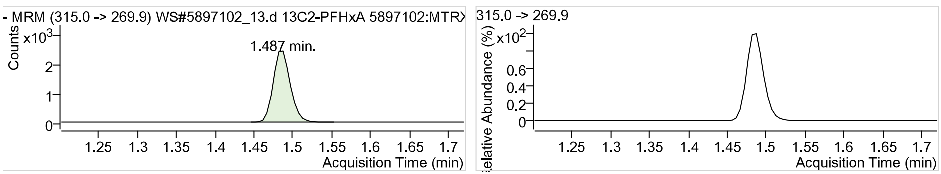
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	2.341 (2.346)
Calc. conc.	0.27 µg/L
Area ratio:	4.48882
Sample type:	QC



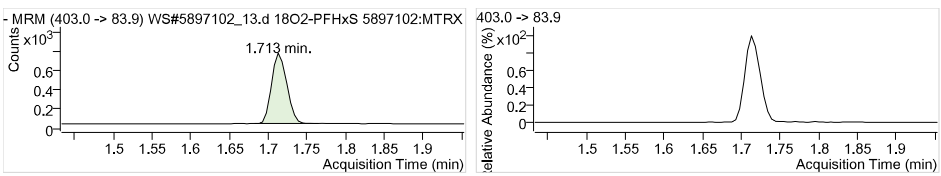
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	2.416 (2.416)
Calc. conc.	0.26 µg/L
Area ratio:	3.80715
Sample type:	QC



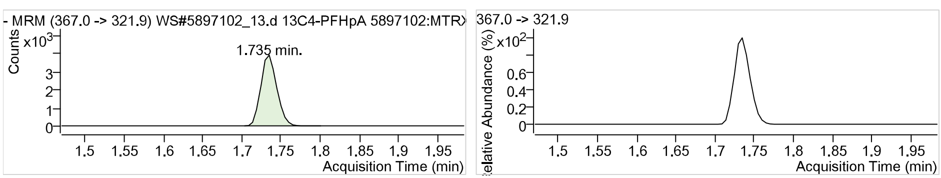
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	0.27 µg/L
Area ratio:	4.06044
Sample type:	QC



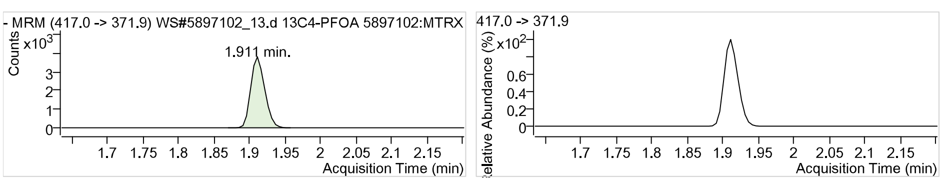
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	89.83 µg/L
Area ratio:	0.24111
Sample type:	QC



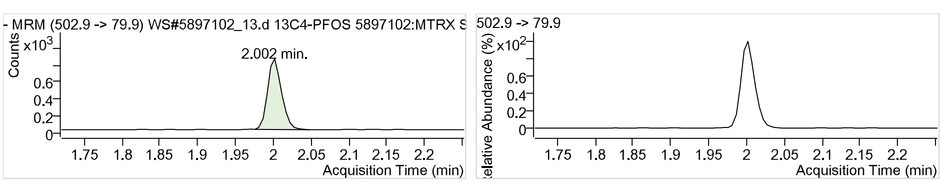
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	90.16 µg/L
Area ratio:	0.06445
Sample type:	QC



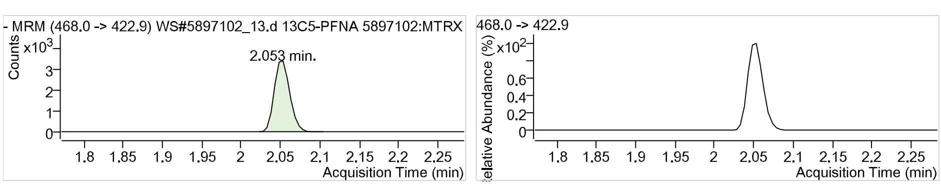
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	90.56 µg/L
Area ratio:	0.35858
Sample type:	QC



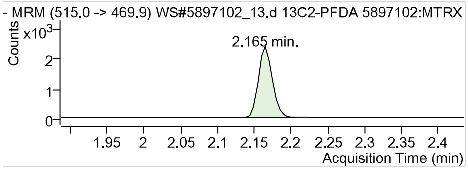
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	92.22 µg/L
Area ratio:	0.33526
Sample type:	QC

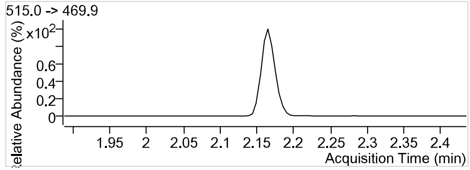


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	87.39 µg/L
Area ratio:	0.06912
Sample type:	QC

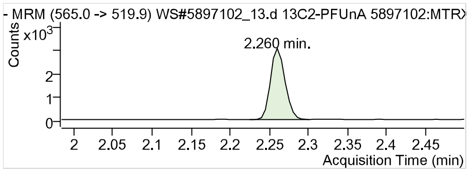


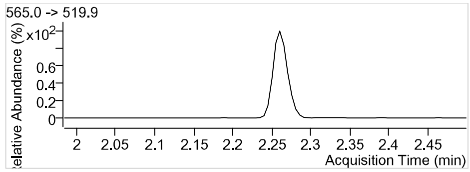
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	91.54 µg/L
Area ratio:	0.30727
Sample type:	QC



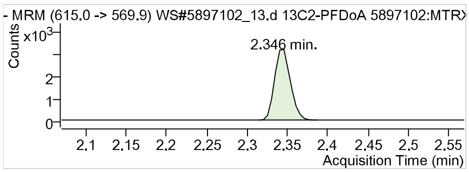


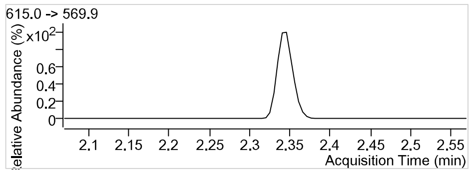
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	84.16 µg/L
Area ratio:	0.17153
Sample type:	QC



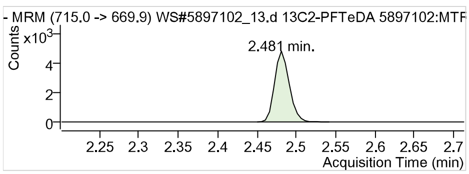


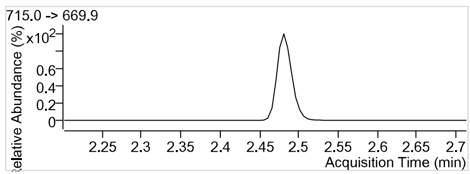
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	91.43 µg/L
Area ratio:	0.21735
Sample type:	QC



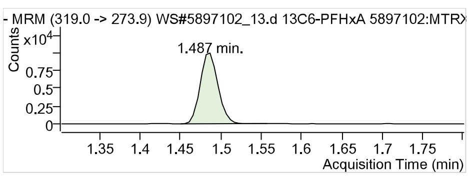


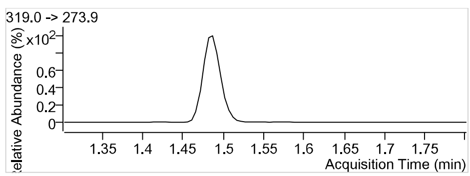
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	78.33 µg/L
Area ratio:	0.24056
Sample type:	QC



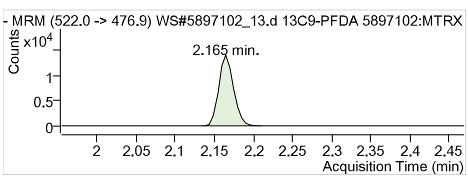


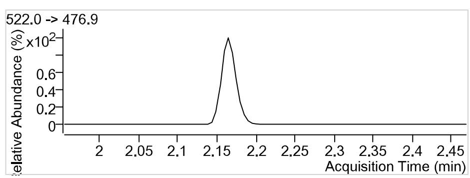
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	77.59 µg/L
Area ratio:	0.34230
Sample type:	QC





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.49 µg/L
Area ratio:	0
Sample type:	QC





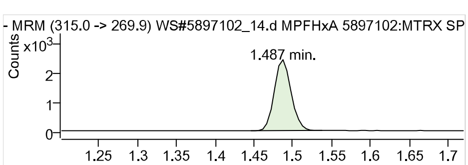
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.53 µg/L
Area ratio:	0
Sample type:	QC

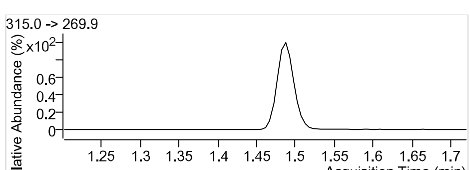
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102\QuantResults\PFC_Water_Low_20181221_WS#5897102_EToxics

Sample Name	**5897102:MTRX SPK:D1**	**Instrument**	LCMS04
Data File	WS#5897102_14.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P2-B4
Acq. Date	2018/12/21 8:25:50 PM	**Injection Volume**	Per Method
Sample Annotation	IOF254		

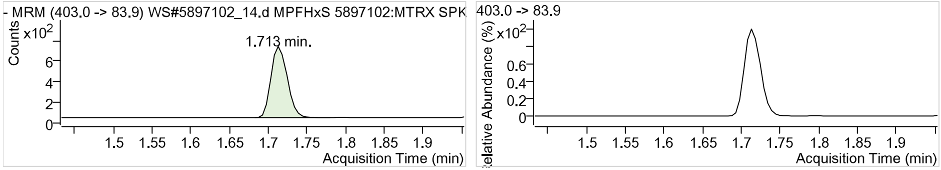
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3634	1.49	1 µg/L		
MPFHxS	997	1.71	1 µg/L		
MPFHpA	5418	1.73	1 µg/L		
MPFOA	5031	1.91	1 µg/L		
MPFOS	1124	2.00	1 µg/L		
MPFNA	4884	2.05	1 µg/L		
MPFDA	3224	2.16	1 µg/L		
MPFUnA	3683	2.26	1 µg/L		
MPFDoA	4695	2.35	1 µg/L		
MPFTeDA	6266	2.48	1 µg/L		
13C6-PFHxA IS	15098	1.49	1 µg/L		
13C9-PFDA IS	17822	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	6303	1.15	10.40	0.25 µg/L	101.63
PFHxA 1	18278	1.49	10.40	0.27 µg/L	106.79
PFHxS 1	5058	1.71	10.40	0.27 µg/L	107.90
PFHpA 1	25230	1.74	10.40	0.26 µg/L	104.97
PFOA 1	25115	1.91	10.40	0.27 µg/L	108.26
PFOS 1	5317	2.00	10.40	0.27 µg/L	110.12
PFNA 1	18586	2.05	10.40	0.24 µg/L	97.75
PFDA 1	20990	2.16	10.40	0.27 µg/L	108.75
PFUnA 1	18498	2.26	10.40	0.27 µg/L	106.27
PFDoA 1	20673	2.35	10.40	0.27 µg/L	106.84
PFTrDA 1	24711	2.42	10.40	0.27 µg/L	109.00
PFTeDA 1	25342	2.48	10.40	0.27 µg/L	106.83
13C2-PFHxA	3634	1.49	100.00	89.67 µg/L	89.67
18O2-PFHxS	997	1.71	100.00	92.38 µg/L	92.38
13C4-PFHpA	5418	1.73	100.00	90.62 µg/L	90.62
13C4-PFOA	5031	1.91	100.00	91.66 µg/L	91.66
13C4-PFOS	1124	2.00	100.00	94.13 µg/L	94.13
13C5-PFNA	4884	2.05	100.00	96.37 µg/L	96.37
13C2-PFDA	3224	2.16	100.00	88.75 µg/L	88.75
13C2-PFUnA	3683	2.26	100.00	86.93 µg/L	86.93
13C2-PFDoA	4695	2.35	100.00	85.77 µg/L	85.77
13C2-PFTeDA	6266	2.48	100.00	79.70 µg/L	79.70
13C6-PFHxA	15098	1.49	100.00	2.47 µg/L	102.84
13C9-PFDA	17822	2.16	100.00	2.47 µg/L	103.12

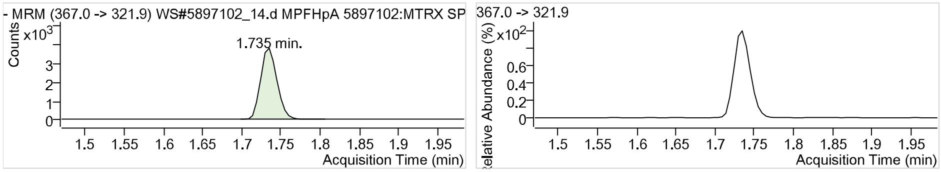




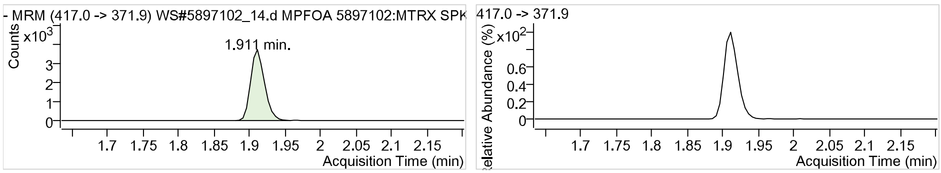
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	QC



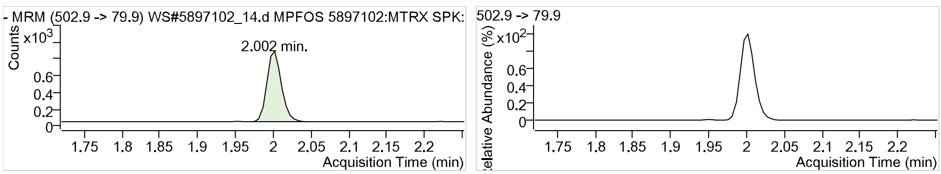
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: QC



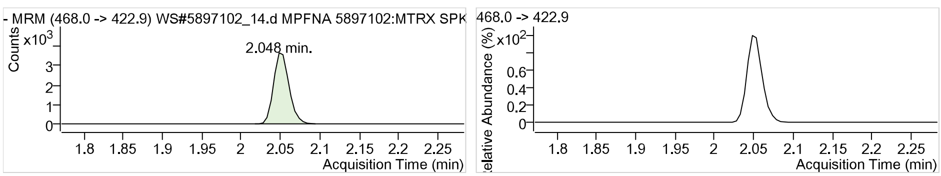
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: QC



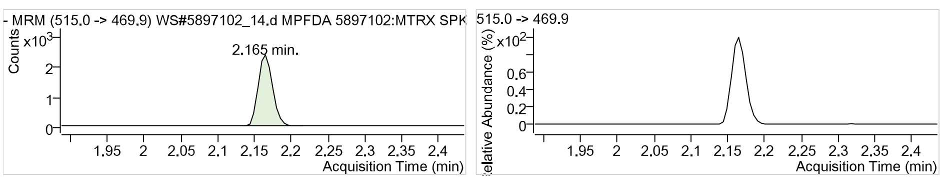
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: QC



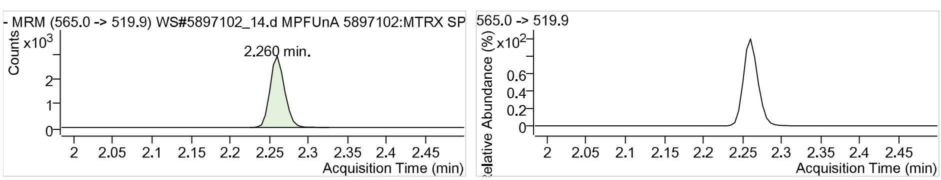
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: QC



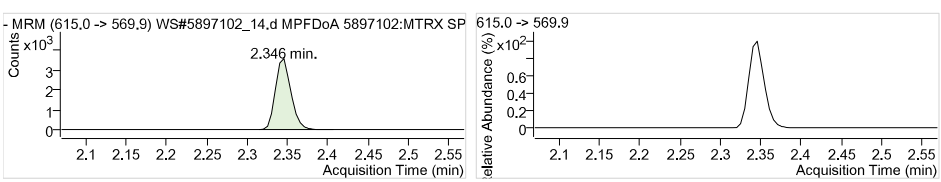
MPFNA Internal Standard
RT (Exp. RT): 2.048 (2.053)
Concentration: 1 µg/L
Sample type: QC



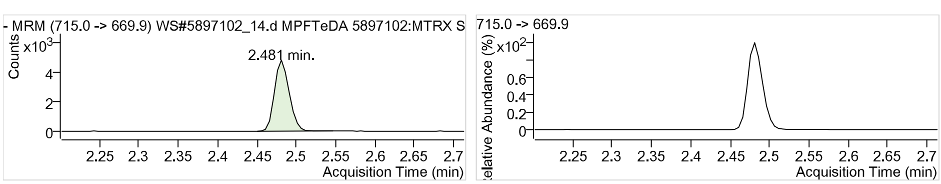
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



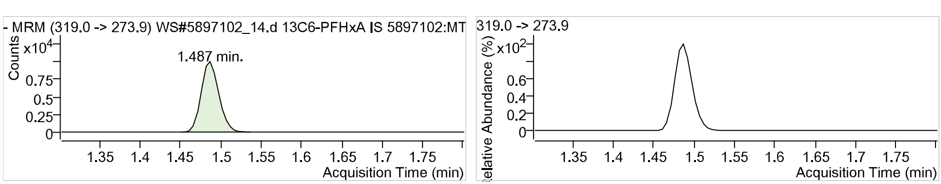
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: QC



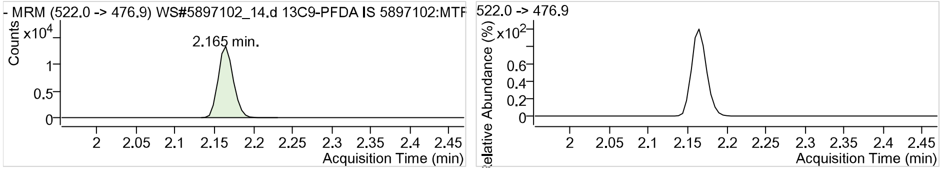
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: QC



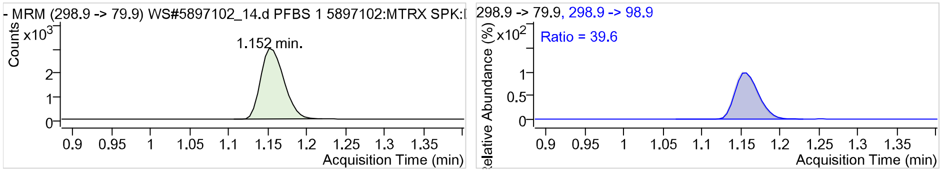
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: QC



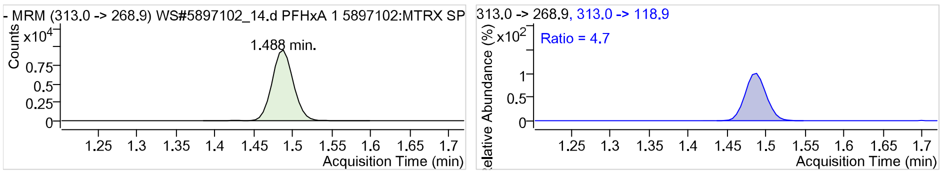
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.487 (1.487)
Concentration: 1 µg/L
Sample type: QC



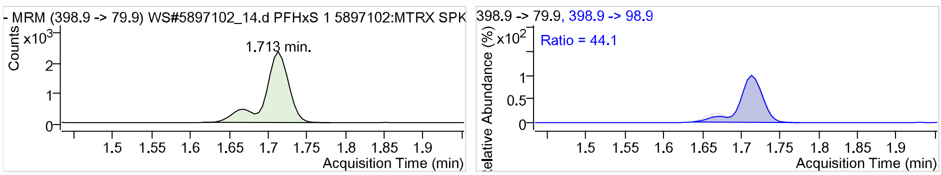
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	QC



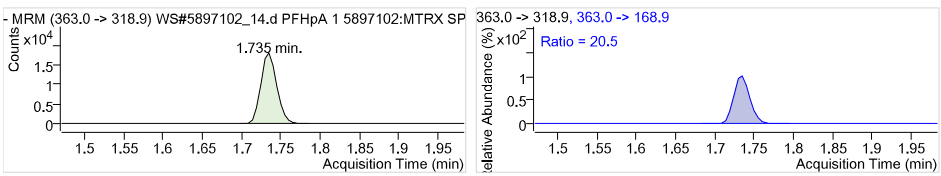
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	1.152 (1.162)
Calc. conc.	0.25 µg/L
Area ratio:	6.32197
Sample type:	QC



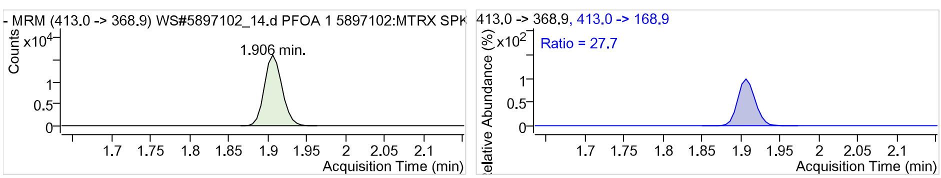
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	1.488 (1.488)
Calc. conc.	0.27 µg/L
Area ratio:	5.02972
Sample type:	QC



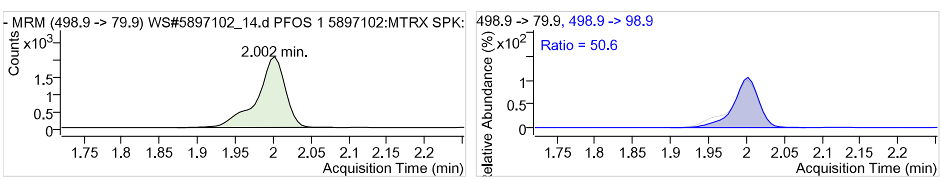
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	0.27 µg/L
Area ratio:	5.07322
Sample type:	QC



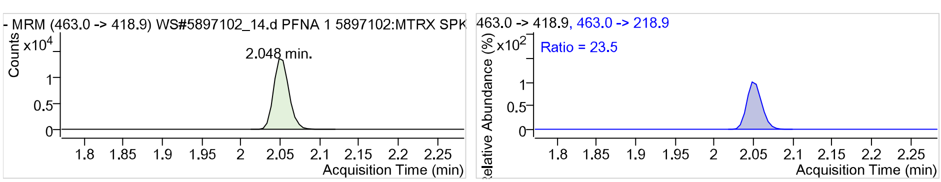
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	0.26 µg/L
Area ratio:	4.65670
Sample type:	QC



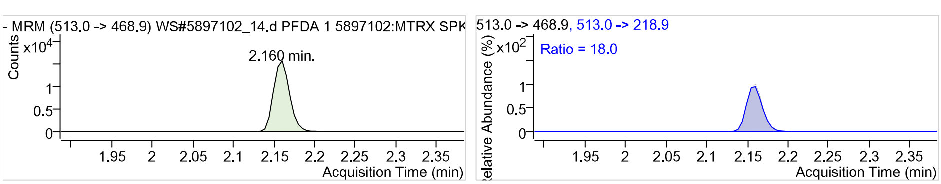
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	1.906 (1.912)
Calc. conc.	0.27 µg/L
Area ratio:	4.99205
Sample type:	QC



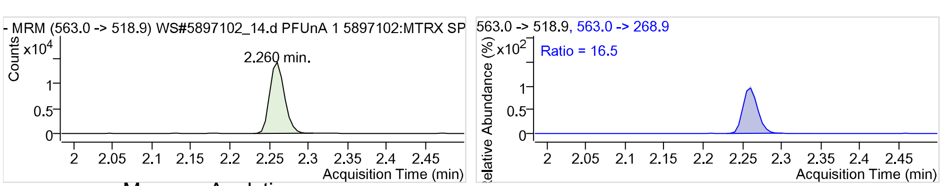
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	0.27 µg/L
Area ratio:	4.73043
Sample type:	QC



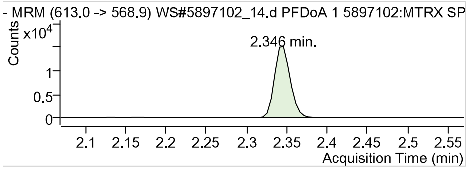
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	2.048 (2.053)
Calc. conc.	0.24 µg/L
Area ratio:	3.80549
Sample type:	QC

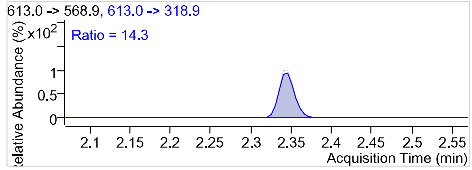


PFDA 1	513.0 -> 468.9
RT (Exp. RT):	2.160 (2.165)
Calc. conc.	0.27 µg/L
Area ratio:	6.51055
Sample type:	QC

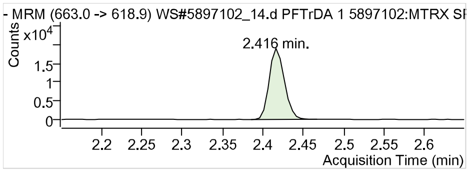


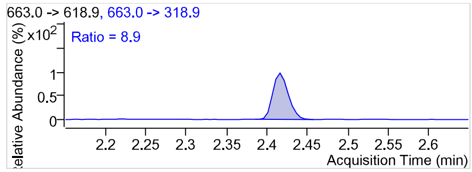
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	0.27 µg/L
Area ratio:	5.02254
Sample type:	QC



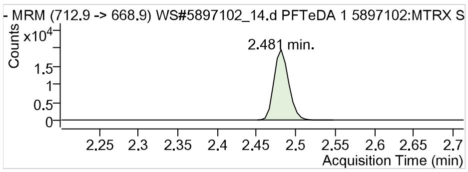


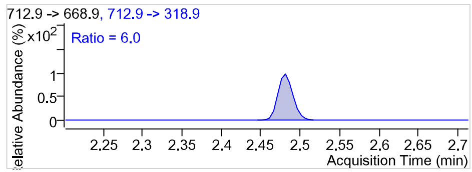
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 0.27 µg/L
Area ratio: 4.40319
Sample type: QC



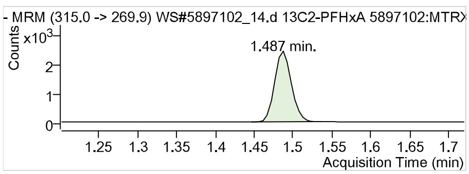


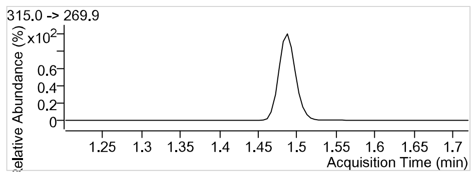
PFTrDA 1 663.0 -> 618.9
RT (Exp. RT): 2.416 (2.416)
Calc. conc. 0.27 µg/L
Area ratio: 3.94366
Sample type: QC



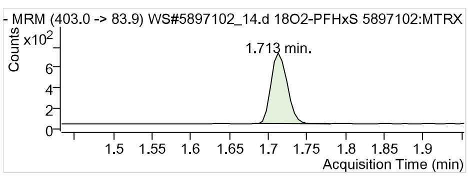


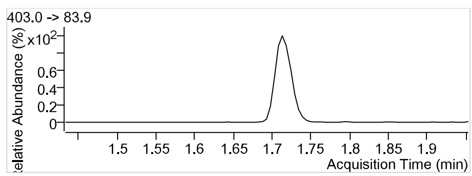
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 0.27 µg/L
Area ratio: 4.04437
Sample type: QC



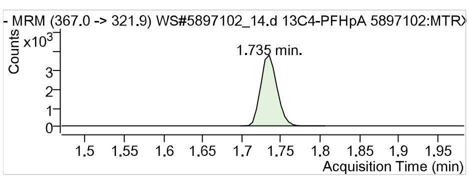


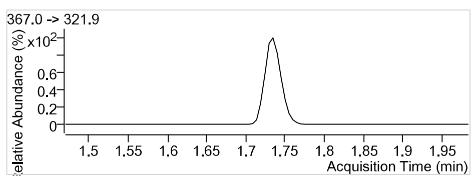
13C2-PFHxA 315.0 -> 269.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 89.67 µg/L
Area ratio: 0.24069
Sample type: QC



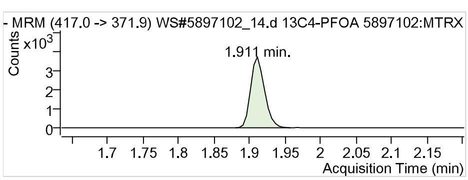


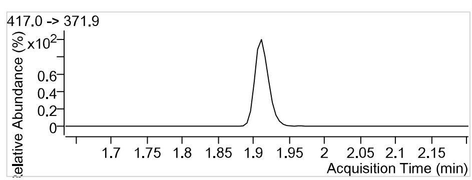
18O2-PFHxS 403.0 -> 83.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 92.38 µg/L
Area ratio: 0.06604
Sample type: QC



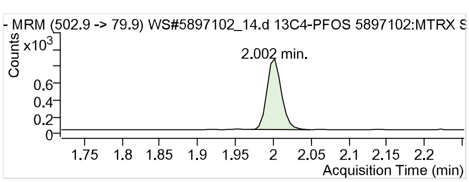


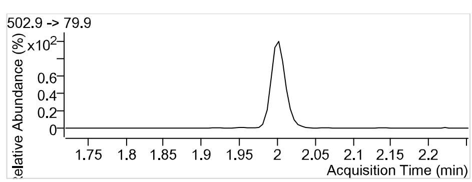
13C4-PFHpA 367.0 -> 321.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 90.62 µg/L
Area ratio: 0.35886
Sample type: QC



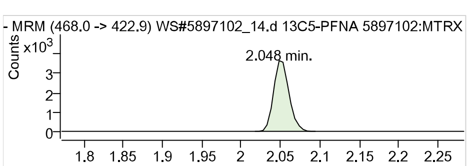


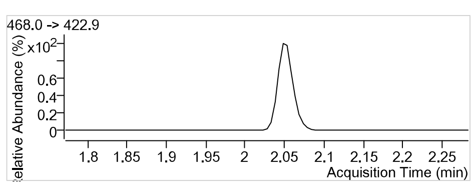
13C4-PFOA 417.0 -> 371.9
RT (Exp. RT): 1.911 (1.911)
Calc. conc. 91.66 µg/L
Area ratio: 0.33322
Sample type: QC



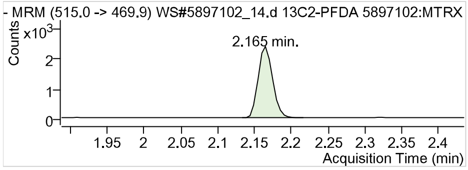


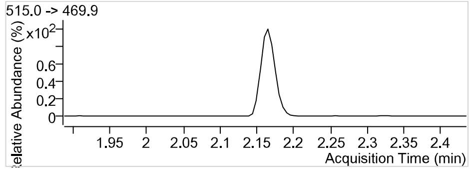
13C4-PFOS 502.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 94.13 µg/L
Area ratio: 0.07445
Sample type: QC



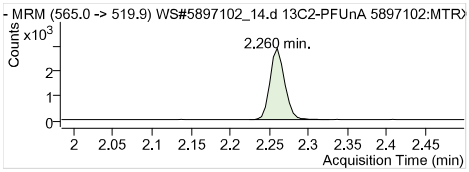


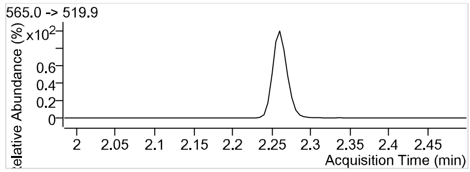
13C5-PFNA 468.0 -> 422.9
RT (Exp. RT): 2.048 (2.053)
Calc. conc. 96.37 µg/L
Area ratio: 0.32349
Sample type: QC



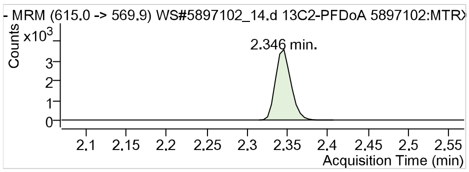


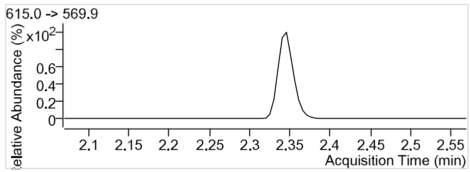
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	88.75 µg/L
Area ratio:	0.18090
Sample type:	QC



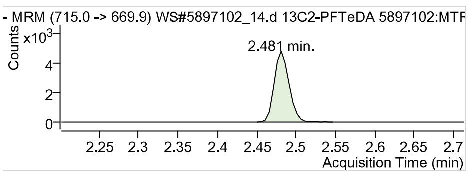


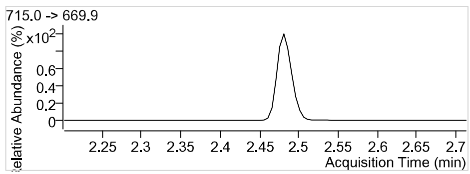
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	86.93 µg/L
Area ratio:	0.20665
Sample type:	QC



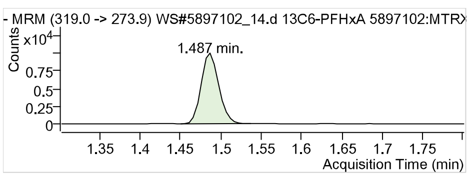


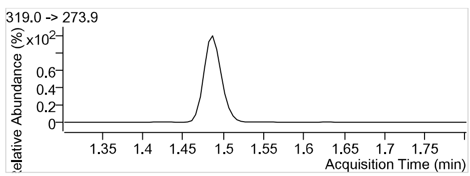
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	85.77 µg/L
Area ratio:	0.26344
Sample type:	QC



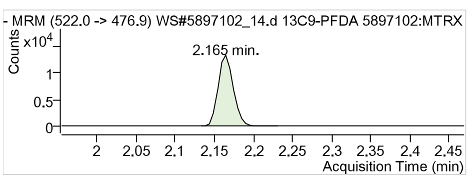


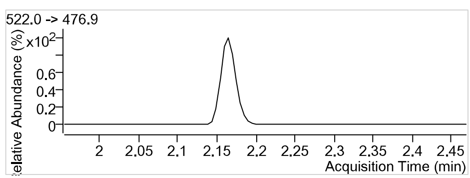
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	79.70 µg/L
Area ratio:	0.35159
Sample type:	QC





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.47 µg/L
Area ratio:	0
Sample type:	QC





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.47 µg/L
Area ratio:	0
Sample type:	QC

Quantitation Results

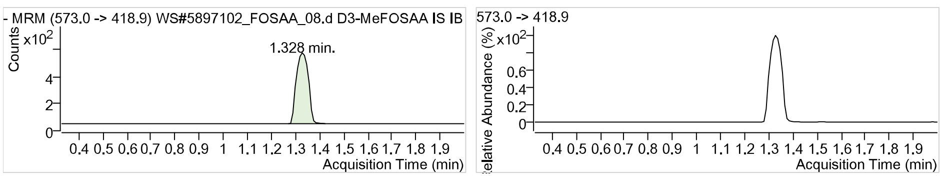
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

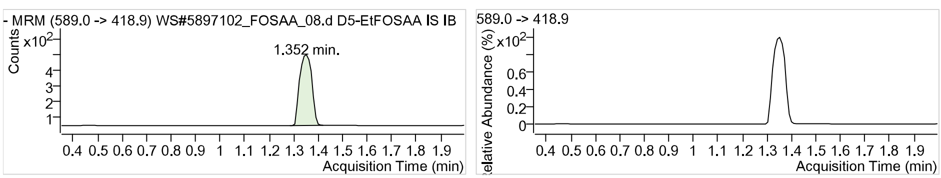
Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_08.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-A8
Acq. Date	2018/12/22 12:45:56 AM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1833	1.33	1 µg/L		
D5-EtFOSAA IS	1557	1.35	1 µg/L		
13C9-PFDA IS	17722	0.98	1 µg/L		

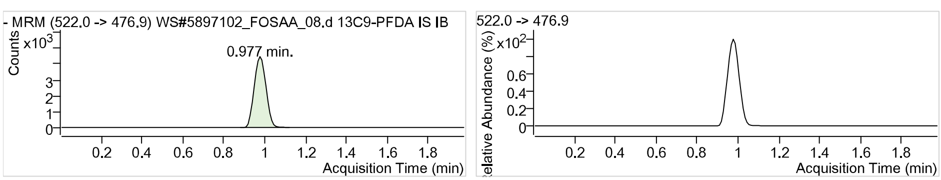
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1837	1.33	-	107.39 µg/L	-
D5-EtFOSAA	1561	1.35	-	100.52 µg/L	-
13C9-PFDA	17770	0.98	-	2.28 µg/L	-



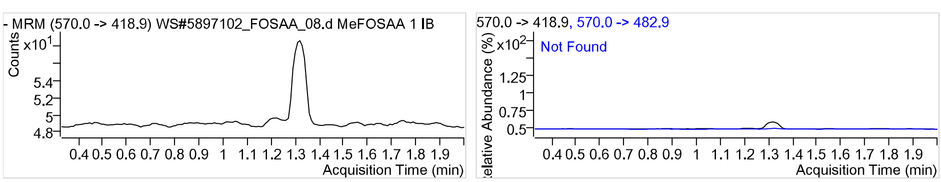
D3-MeFOSAA IS Internal Standard
RT (Exp. RT): 1.328 (1.328)
Concentration: 1 µg/L
Sample type: Sample



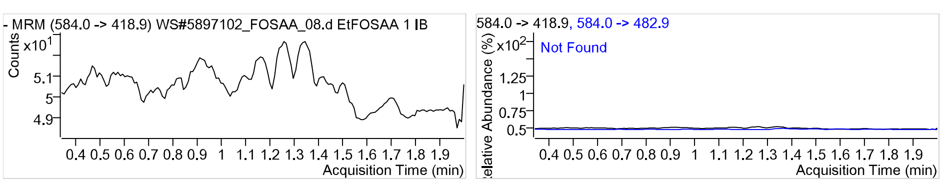
D5-EtFOSAA IS Internal Standard
RT (Exp. RT): 1.352 (1.352)
Concentration: 1 µg/L
Sample type: Sample



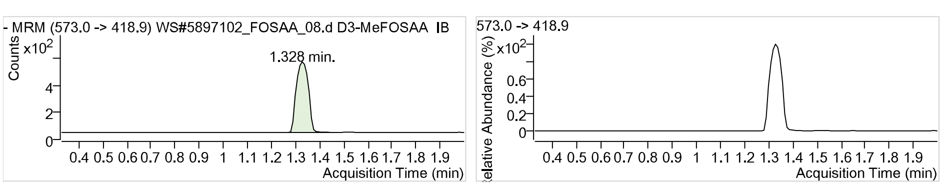
13C9-PFDA IS Internal Standard
RT (Exp. RT): 0.977 (0.977)
Concentration: 1 µg/L
Sample type: Sample



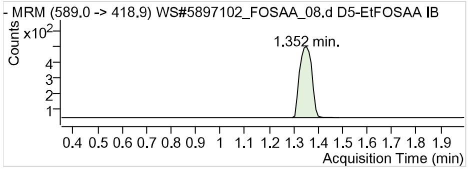
MeFOSAA 1 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.329)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample

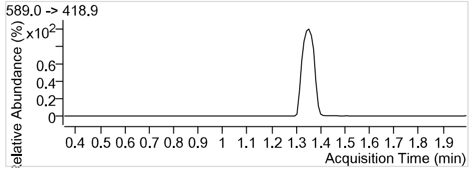


EtFOSAA 1 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.344)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample

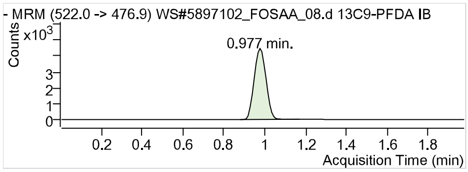


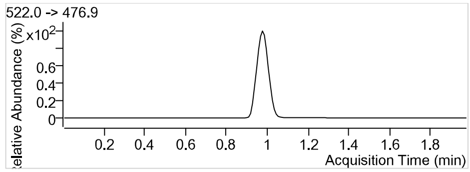
D3-MeFOSAA 573.0 -> 418.9
RT (Exp. RT): 1.328 (1.328)
Calc. conc. 107.39 µg/L
Area ratio: 0.10366
Sample type: Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	100.52 µg/L
Area ratio:	0.08808
Sample type:	Sample





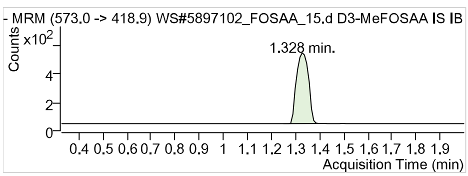
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.977 (0.977)
Calc. conc.	2.28 µg/L
Area ratio:	0
Sample type:	Sample

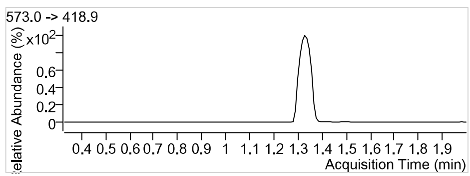
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_15.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-A8
Acq. Date	2018/12/22 1:02:40 AM	**Injection Volume**	Per Method
Sample Annotation	-		

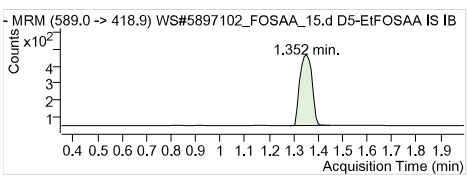
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1727	1.33	1 µg/L		
D5-EtFOSAA IS	1451	1.35	1 µg/L		
13C9-PFDA IS	17582	0.98	1 µg/L		

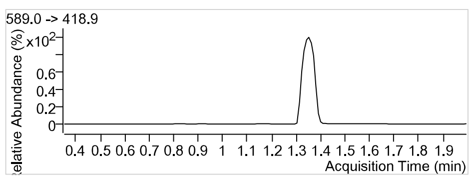
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1732	1.33	-	102.06 µg/L	-
D5-EtFOSAA	1451	1.35	-	94.18 µg/L	-
13C9-PFDA	17616	0.98	-	2.26 µg/L	-



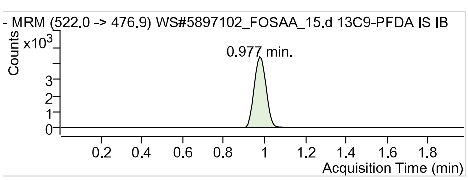


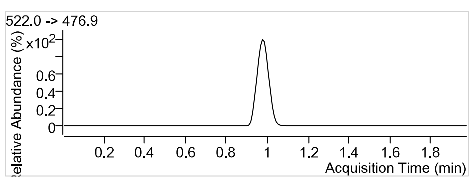
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



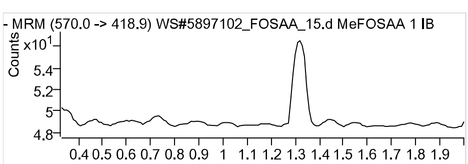


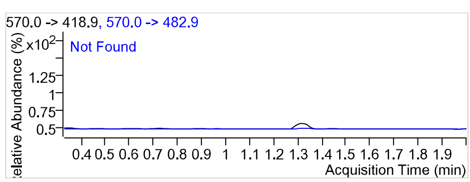
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



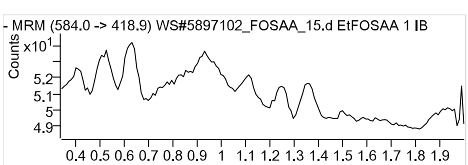


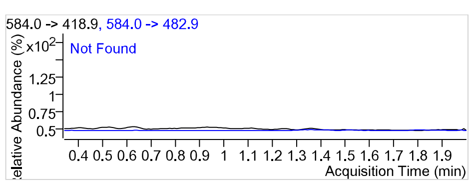
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.977 (0.977)
Concentration:	1 µg/L
Sample type:	Sample



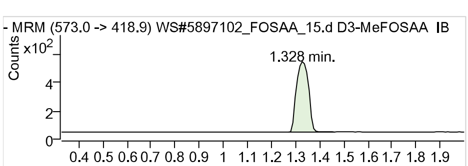


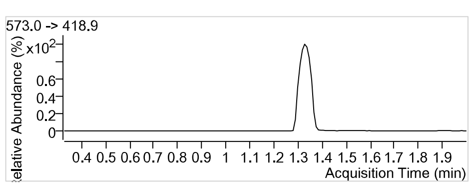
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



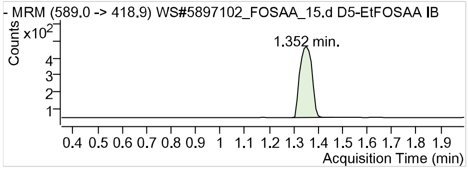


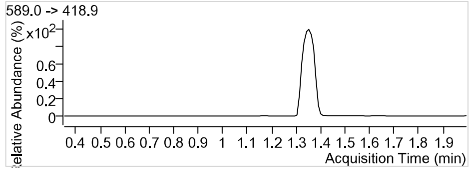
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.344)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



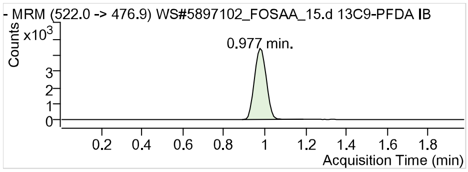


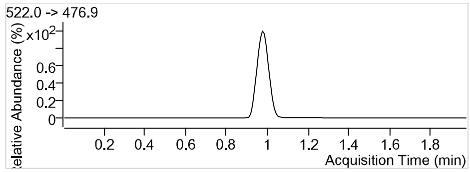
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	102.06 µg/L
Area ratio:	0.09851
Sample type:	Sample





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 94.18 µg/L
Area ratio: 0.08253
Sample type: Sample





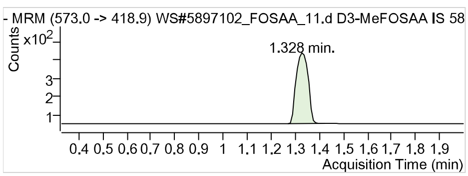
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.977 (0.977)
Calc. conc. 2.26 µg/L
Area ratio: 0
Sample type: Sample

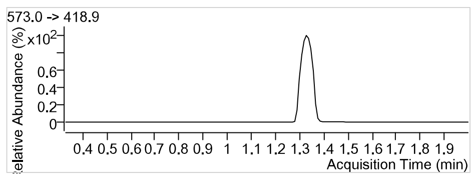
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

Sample Name	**5897102:BLANK**	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_11.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-B1
Acq. Date	2018/12/22 12:53:07 AM	**Injection Volume**	Per Method
Sample Annotation	-		

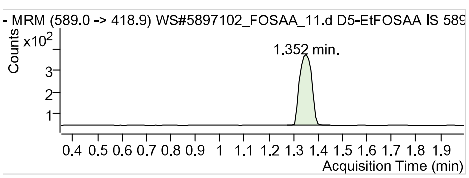
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1357	1.33	1 µg/L		
D5-EtFOSAA IS	1128	1.35	1 µg/L		
13C9-PFDA IS	18824	0.97	1 µg/L		

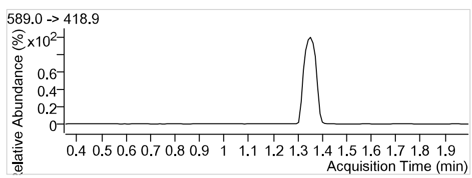
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1356	1.33	-	74.63 µg/L	-
D5-EtFOSAA	1129	1.35	-	68.44 µg/L	-
13C9-PFDA	18864	0.97	-	2.42 µg/L	-



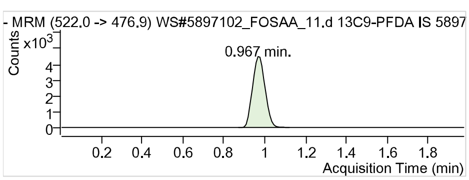


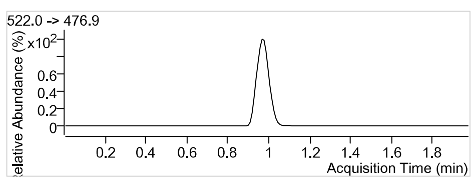
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



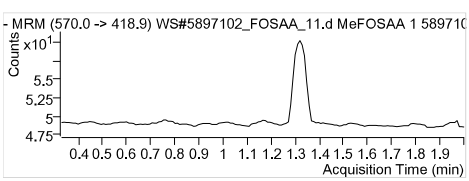


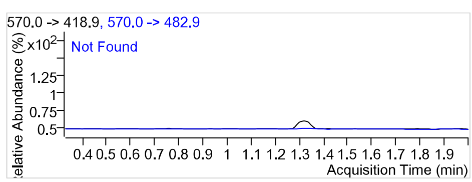
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



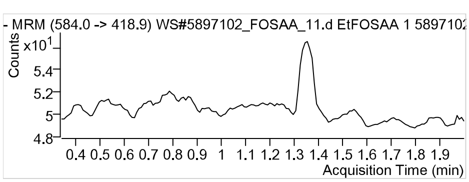


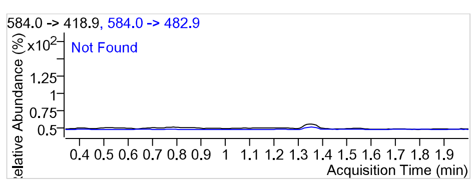
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.967 (0.977)
Concentration:	1 µg/L
Sample type:	Sample



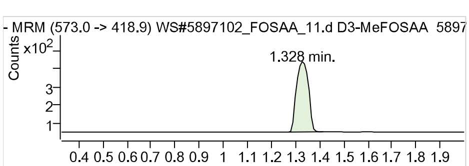


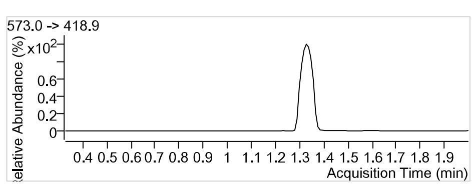
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



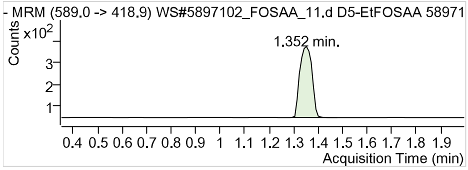


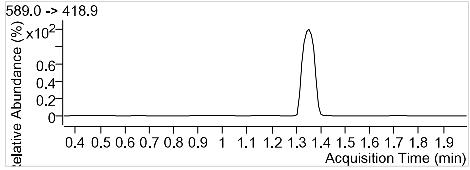
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.344)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



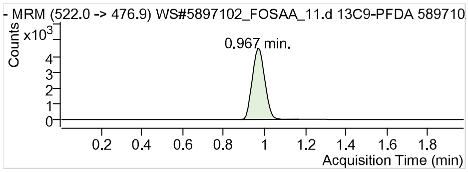


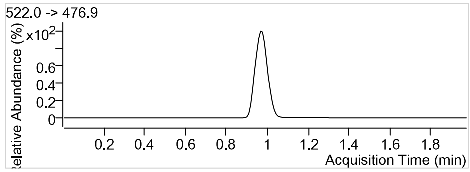
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	74.63 µg/L
Area ratio:	0.07204
Sample type:	Sample





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 68.44 μg/L
Area ratio: 0.05998
Sample type: Sample





13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.967 (0.977)
Calc. conc. 2.42 μg/L
Area ratio: 0
Sample type: Sample

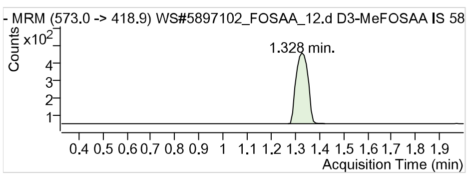
Quantitation Results

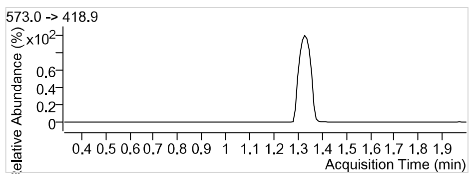
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

Sample Name	**5897102:SPIKE**	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_12.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-B2
Acq. Date	2018/12/22 12:55:30 AM	**Injection Volume**	Per Method
Sample Annotation	-		

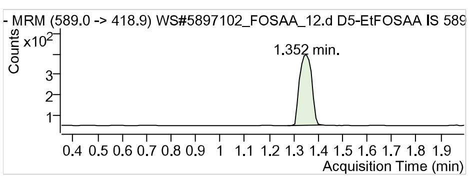
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1412	1.33	1 µg/L		
D5-EtFOSAA IS	1205	1.35	1 µg/L		
13C9-PFDA IS	18507	0.97	1 µg/L		

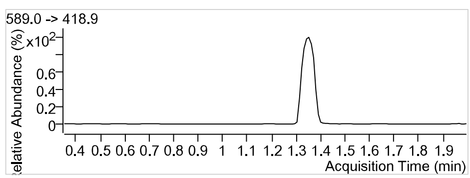
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	10173	1.33	20.80	0.50 µg/L	99.59
EtFOSAA 1	11394	1.34	20.80	0.53 µg/L	105.99
D3-MeFOSAA	1412	1.33	100.00	79.04 µg/L	79.04
D5-EtFOSAA	1212	1.35	100.00	74.73 µg/L	74.73
13C9-PFDA	18546	0.97	100.00	2.38 µg/L	99.07



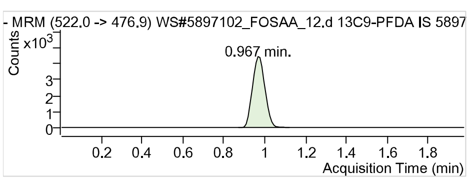


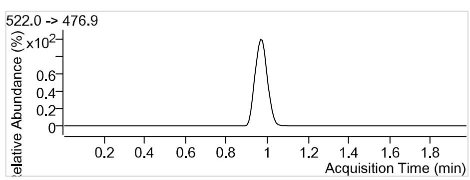
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	QC



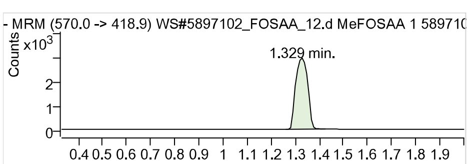


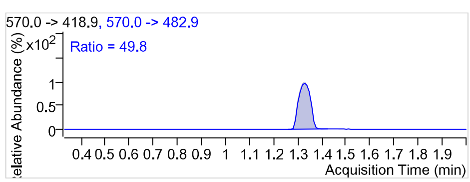
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	QC



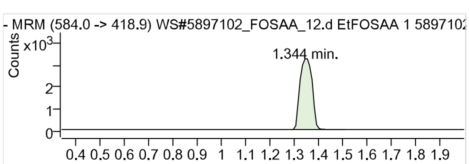


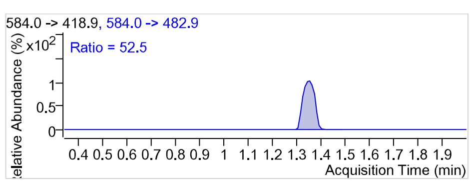
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.967 (0.977)
Concentration:	1 µg/L
Sample type:	QC



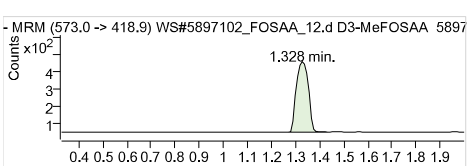


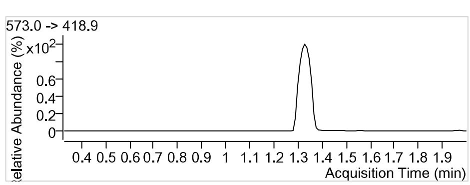
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	1.329 (1.329)
Calc. conc.	0.50 µg/L
Area ratio:	7.20467
Sample type:	QC



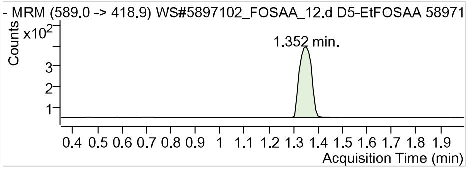


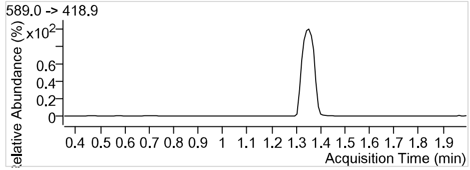
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	1.344 (1.344)
Calc. conc.	0.53 µg/L
Area ratio:	9.45560
Sample type:	QC



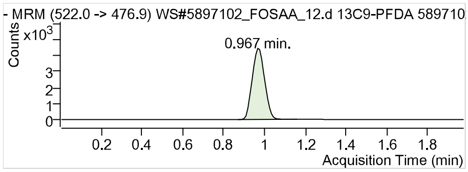


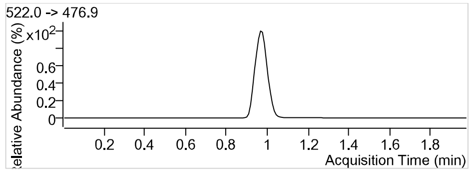
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	79.04 µg/L
Area ratio:	0.07630
Sample type:	QC





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 74.73 µg/L
Area ratio: 0.06549
Sample type: QC





13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.967 (0.977)
Calc. conc. 2.38 µg/L
Area ratio: 0
Sample type: QC

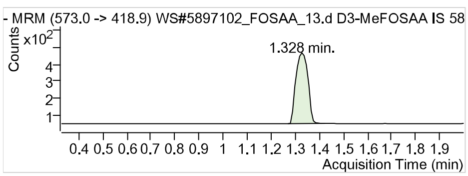
Agilent Technologies

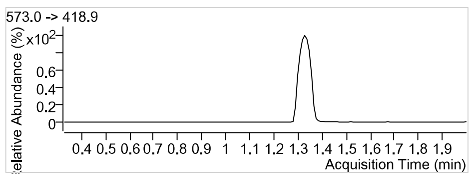
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

Sample Name	**5897102:MTRX SPK**	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_13.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-B3
Acq. Date	2018/12/22 12:57:53 AM	**Injection Volume**	Per Method
Sample Annotation	IOF254		

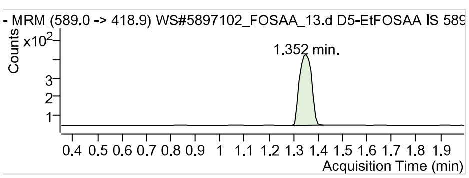
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1453	1.33	1 µg/L		
D5-EtFOSAA IS	1299	1.35	1 µg/L		
13C9-PFDA IS	18533	0.96	1 µg/L		

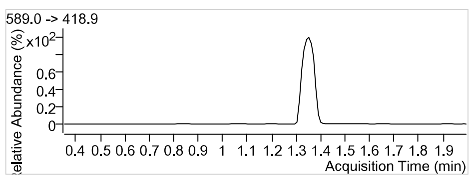
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	5331	1.33	20.80	0.25 µg/L	50.64
EtFOSAA 1	5948	1.34	20.80	0.26 µg/L	51.43
D3-MeFOSAA	1457	1.33	100.00	81.45 µg/L	81.45
D5-EtFOSAA	1302	1.35	100.00	80.17 µg/L	80.17
13C9-PFDA	18554	0.96	100.00	2.38 µg/L	99.12



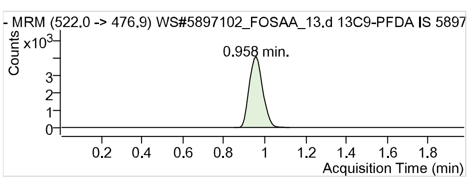


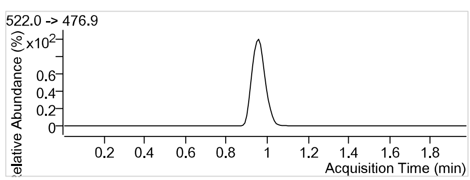
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	QC



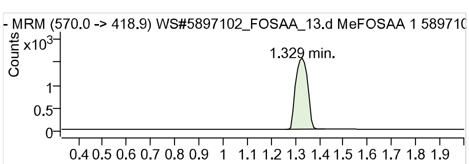


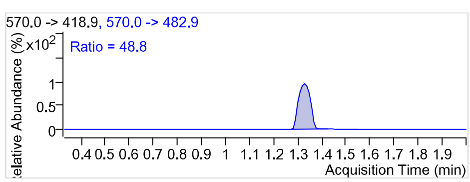
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	QC



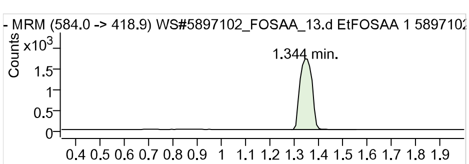


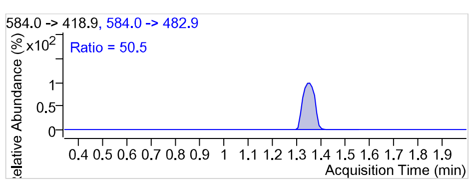
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.958 (0.977)
Concentration:	1 µg/L
Sample type:	QC



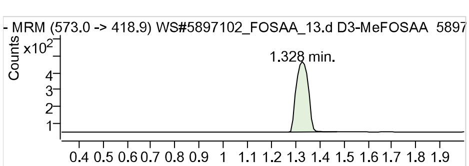


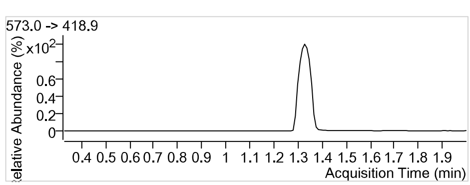
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	1.329 (1.329)
Calc. conc.	0.25 µg/L
Area ratio:	3.66896
Sample type:	QC



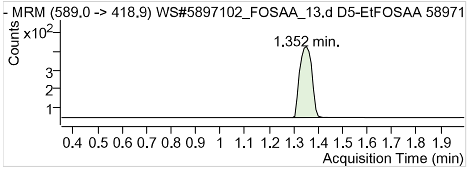


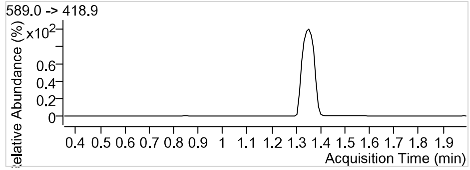
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	1.344 (1.344)
Calc. conc.	0.26 µg/L
Area ratio:	4.57891
Sample type:	QC



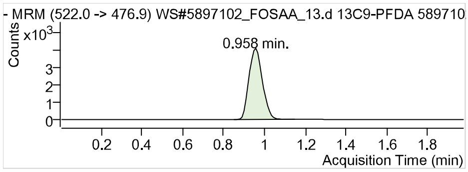


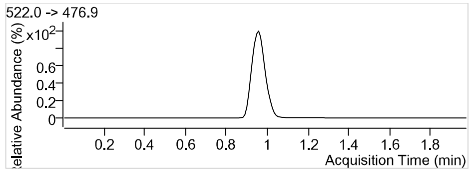
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	81.45 µg/L
Area ratio:	0.07862
Sample type:	QC





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	80.17 µg/L
Area ratio:	0.07025
Sample type:	QC





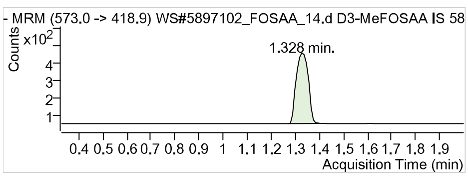
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.958 (0.977)
Calc. conc.	2.38 µg/L
Area ratio:	0
Sample type:	QC

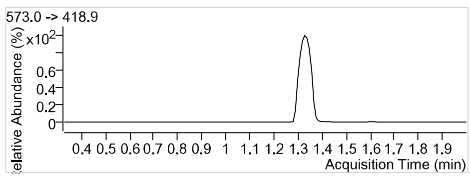
Batch Path	T:\LCMS04\PFC\20181221\WS#5897102_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5897102_FOSAA_EToxics

Sample Name	**5897102:MTRX SPK:D1**	**Instrument**	LCMS04
Data File	WS#5897102_FOSAA_14.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P2-B4
Acq. Date	2018/12/22 1:00:16 AM	**Injection Volume**	Per Method
Sample Annotation	IOF254		

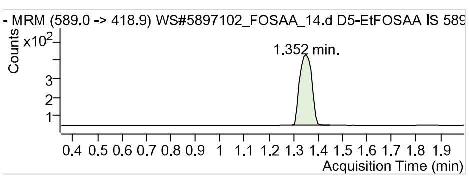
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1418	1.33	1 µg/L		
D5-EtFOSAA IS	1317	1.35	1 µg/L		
13C9-PFDA IS	18093	0.98	1 µg/L		

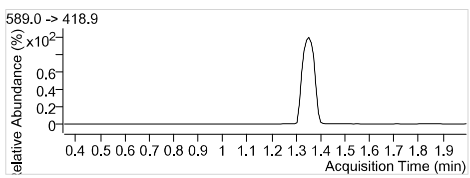
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	5439	1.33	20.80	0.26 µg/L	52.95
EtFOSAA 1	5831	1.35	20.80	0.25 µg/L	49.74
D3-MeFOSAA	1425	1.33	100.00	81.60 µg/L	81.60
D5-EtFOSAA	1317	1.35	100.00	83.07 µg/L	83.07
13C9-PFDA	18217	0.98	100.00	2.34 µg/L	97.32



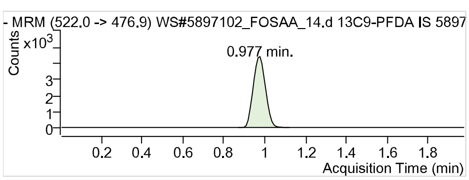


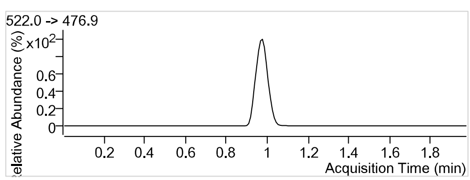
D3-MeFOSAA IS Internal Standard
RT (Exp. RT): 1.328 (1.328)
Concentration: 1 µg/L
Sample type: QC



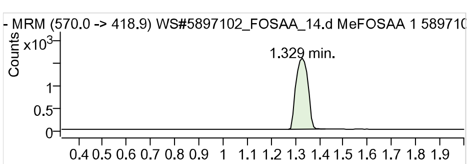


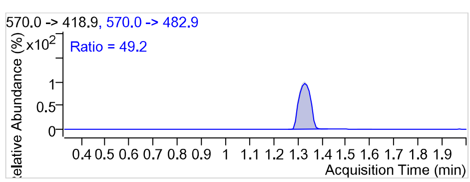
D5-EtFOSAA IS Internal Standard
RT (Exp. RT): 1.352 (1.352)
Concentration: 1 µg/L
Sample type: QC



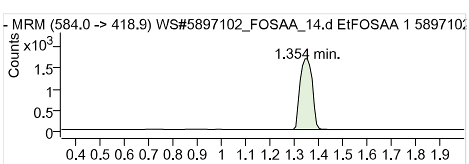


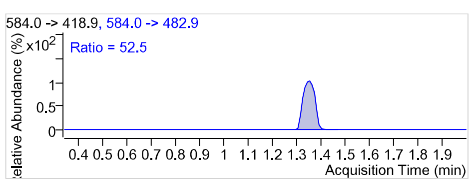
13C9-PFDA IS Internal Standard
RT (Exp. RT): 0.977 (0.977)
Concentration: 1 µg/L
Sample type: QC



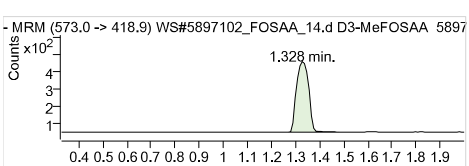


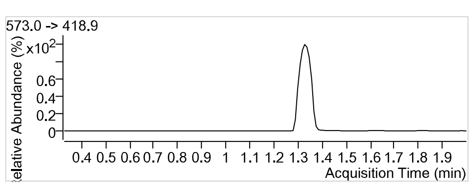
MeFOSAA 1 570.0 -> 418.9
RT (Exp. RT): 1.329 (1.329)
Calc. conc. 0.26 µg/L
Area ratio: 3.83568
Sample type: QC



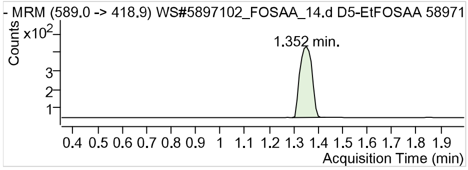


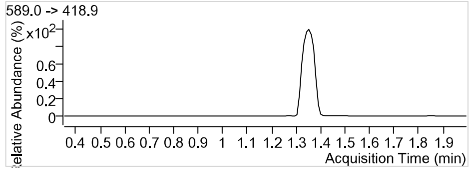
EtFOSAA 1 584.0 -> 418.9
RT (Exp. RT): 1.354 (1.344)
Calc. conc. 0.25 µg/L
Area ratio: 4.42749
Sample type: QC



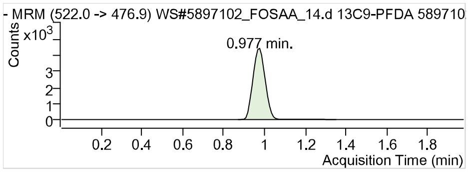


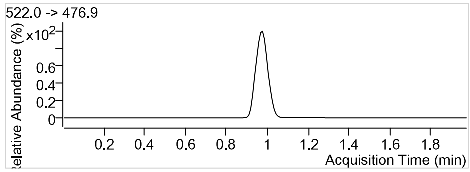
D3-MeFOSAA 573.0 -> 418.9
RT (Exp. RT): 1.328 (1.328)
Calc. conc. 81.60 µg/L
Area ratio: 0.07876
Sample type: QC





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	83.07 µg/L
Area ratio:	0.07279
Sample type:	QC





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.977 (0.977)
Calc. conc.	2.34 µg/L
Area ratio:	0
Sample type:	QC

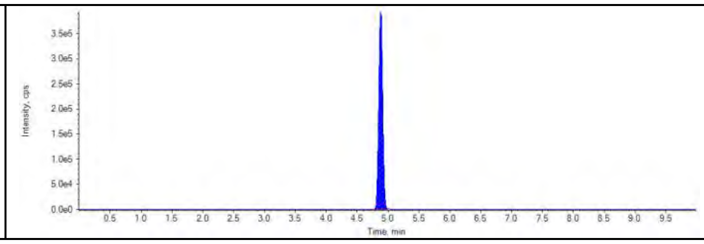
Sample ID	tPFOA	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	9
Acquisition Date	2018/12/21 2:32:32 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181221\WS#5898852.wiff		
Result Table	PFC_Water_181221_5898852_EPA537_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1750000.	4.88	1.00	-
MPFOS	186000.	5.61	1.00	-
D3-MeFOSAA IS	1660000.	6.43	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFHxA 1	0	0.00	N/A	N/A	N/A
PFHxS 1	0	0.00	N/A	N/A	N/A
PFHpA 1	0	0.00	N/A	N/A	N/A
PFOA 1	2030000	4.89	N/A	8680.	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	0	0.00	N/A	N/A	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	1150	2.97	N/A	5.03	N/A
13C2-PFDA	3030	6.19	N/A	18.1	N/A
D5-EtFOSAA	2000	6.69	N/A	55.7	N/A

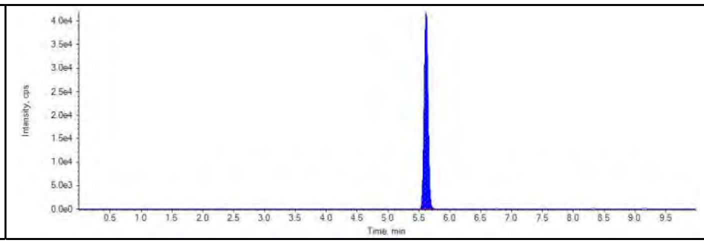
MPFOA (Internal Standard)

RT (Exp. RT): 4.88(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



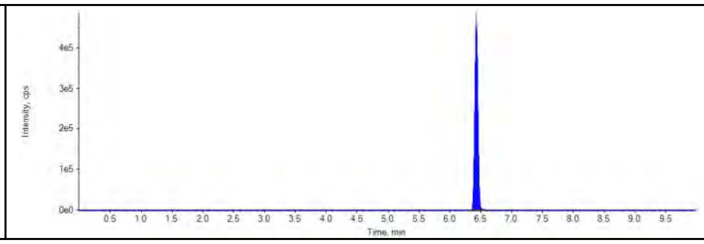
MPFOS (Internal Standard)

RT (Exp. RT): 5.61(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.43(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



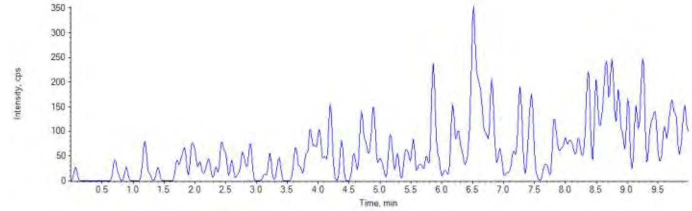
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



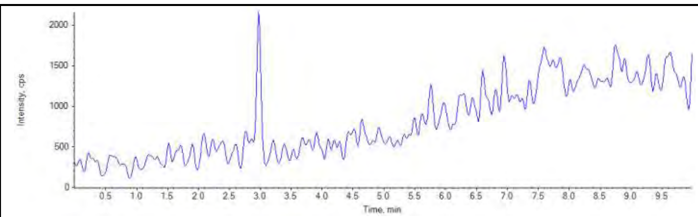
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 0.00 (2.97) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



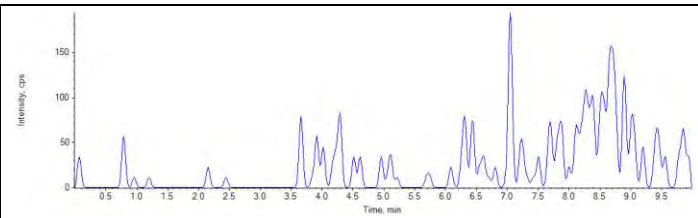
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 0.00 (4.05) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



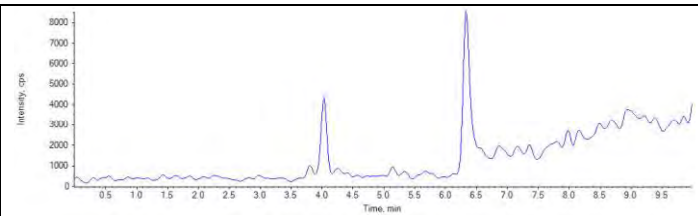
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 0.00 (3.91) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Unknown)



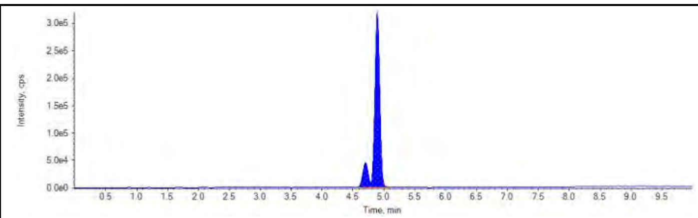
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.89 (4.89) min

Calculated Conc: 8680. ng/L

Area Ratio: 1.16

Sample Type: (Unknown)



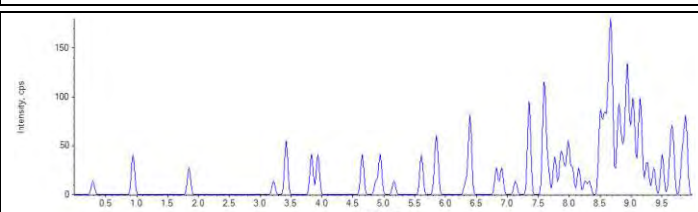
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.38) min

Calculated Conc: N/A ng/L

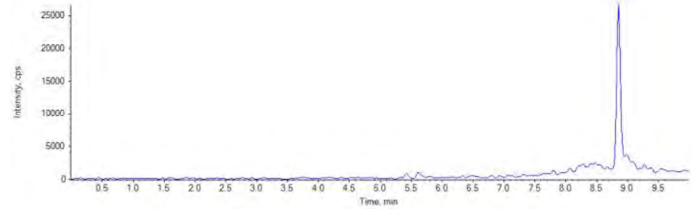
Area Ratio: 0.00

Sample Type: (Unknown)



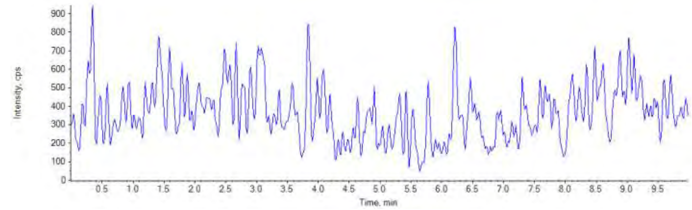
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



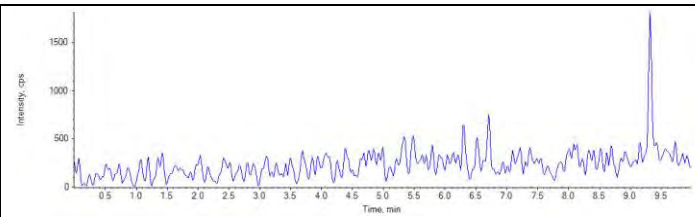
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



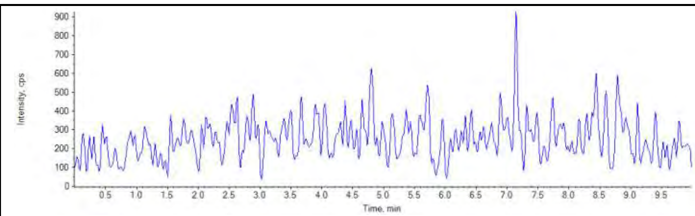
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



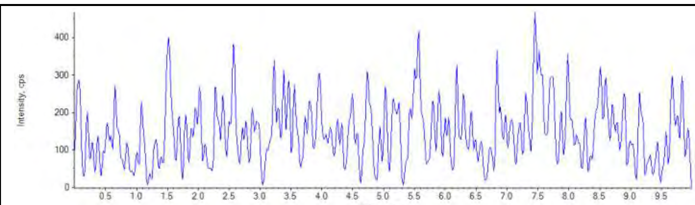
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



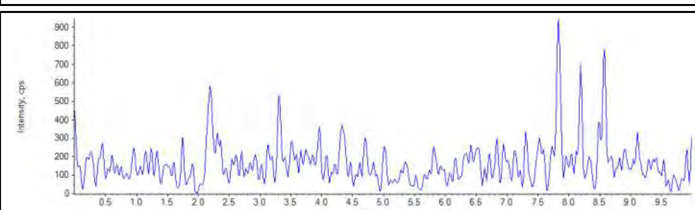
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



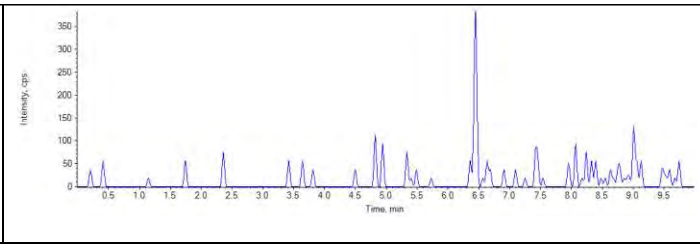
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.64) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



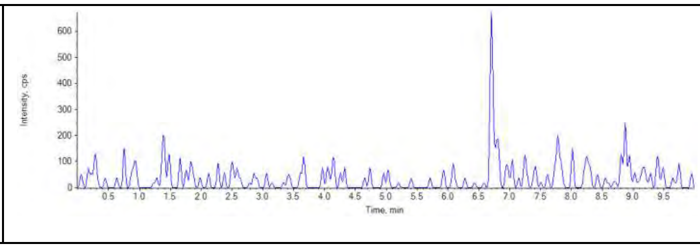
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



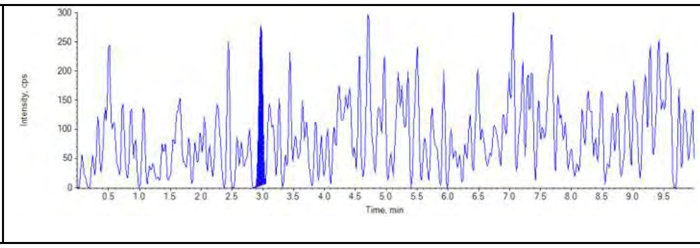
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



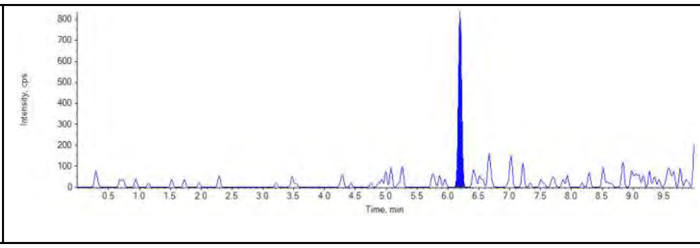
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.97 (2.96) min
Calculated Conc: 5.03 ng/L
Area Ratio: 0.000659
Sample Type: (Unknown)



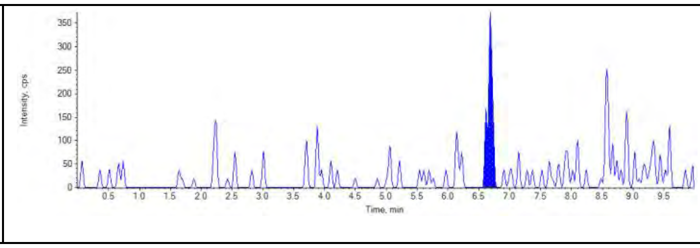
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.19 (6.19) min
Calculated Conc: 18.1 ng/L
Area Ratio: 0.00173
Sample Type: (Unknown)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.69 (6.68) min
Calculated Conc: 55.7 ng/L
Area Ratio: 0.00121
Sample Type: (Unknown)



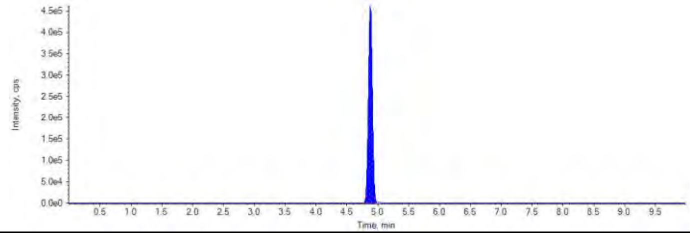
Sample ID	5898852~BLANK	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	10
Acquisition Date	2018/12/21 2:48:07 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181221\WS#5898852.wiff		
Result Table	PFC_Water_181221_5898852_EPA537_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2060000.	4.88	1.00	-
MPFOS	231000.	5.61	1.00	-
D3-MeFOSAA IS	1830000.	6.43	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	0.00	N/A	N/A
PFHxA 1	0	0.00	0.00	N/A	N/A
PFHxS 1	0	0.00	0.00	N/A	N/A
PFHpA 1	0	0.00	0.00	N/A	N/A
PFOA 1	0	0.00	0.00	N/A	N/A
PFOS 1	0	0.00	0.00	N/A	N/A
PFNA 1	0	0.00	0.00	N/A	N/A
PFDA 1	0	0.00	0.00	N/A	N/A
PFUnA 1	0	0.00	0.00	N/A	N/A
PFDoA 1	0	0.00	0.00	N/A	N/A
PFTrDA 1	0	0.00	0.00	N/A	N/A
PFTeDA 1	0	0.00	0.00	N/A	N/A
MeFOSAA 1	0	0.00	0.00	N/A	N/A
EtFOSAA 1	0	0.00	0.00	N/A	N/A
13C2-PFHxA	65400	2.96	40.0	0.968	2.4
13C2-PFDA	1330000	6.19	40.0	26.9	67.4
D5-EtFOSAA	1150000	6.68	160.	116.	72.2

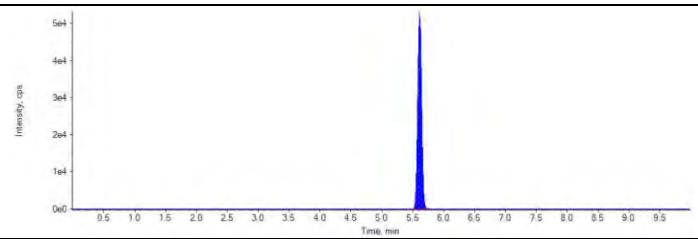
MPFOA (Internal Standard)

RT (Exp. RT): 4.88(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



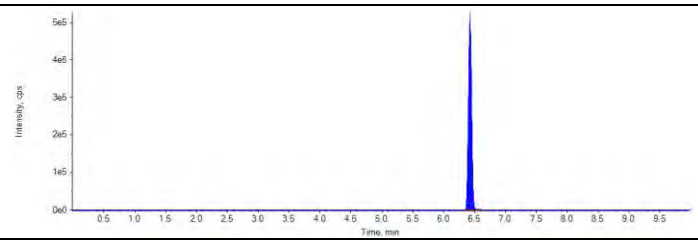
MPFOS (Internal Standard)

RT (Exp. RT): 5.61(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



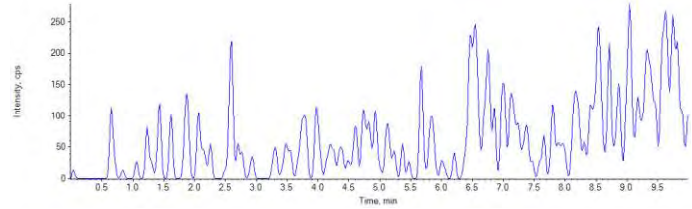
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.43(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



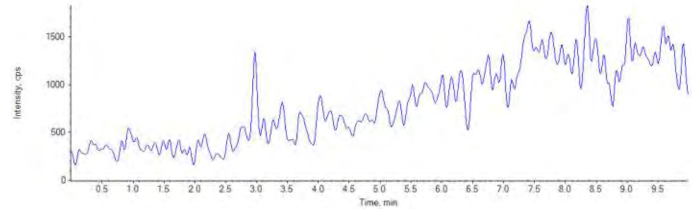
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	0.00 (1.85) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



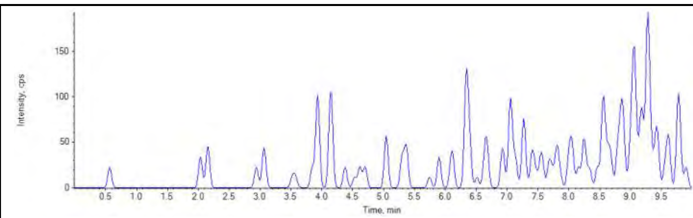
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	0.00 (2.97) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



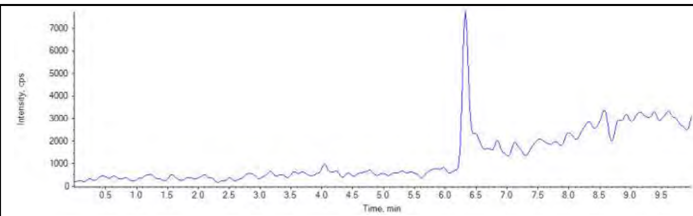
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	0.00 (4.05) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



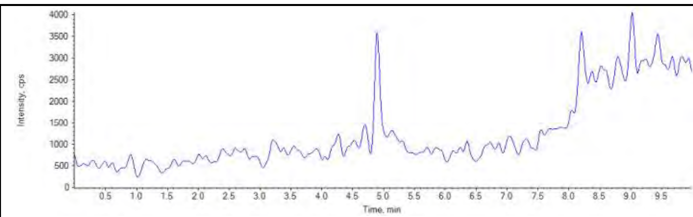
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	0.00 (3.91) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



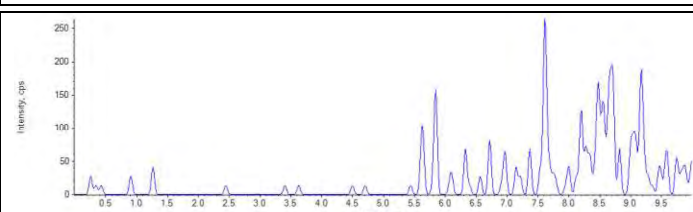
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT):	0.00 (4.89) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	0.00 (5.38) min
Calculated Conc:	N/A ng/L
Area Ratio:	0.00
Sample Type:	(Quality Control)



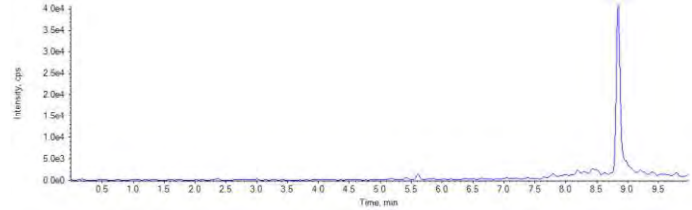
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



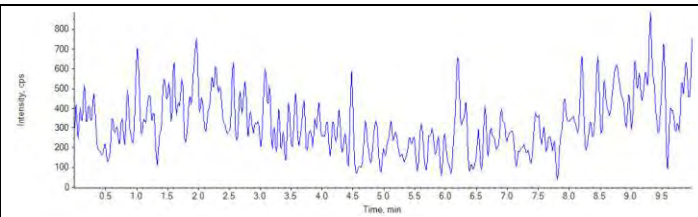
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



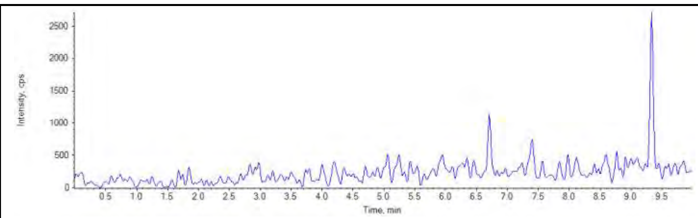
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



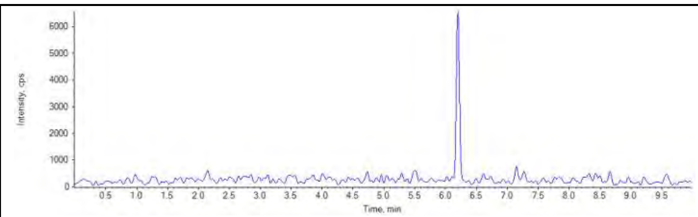
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



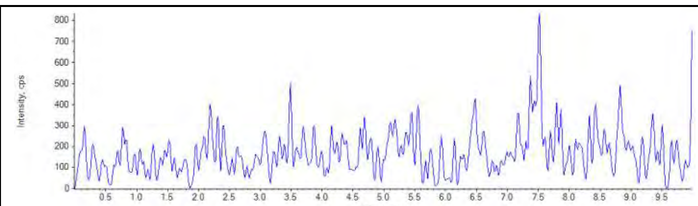
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



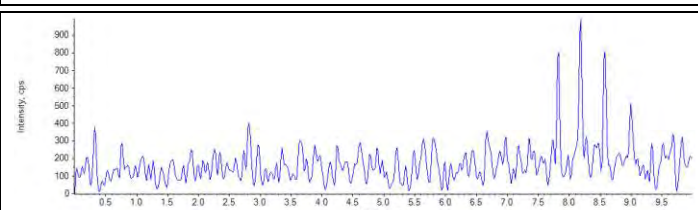
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.64) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



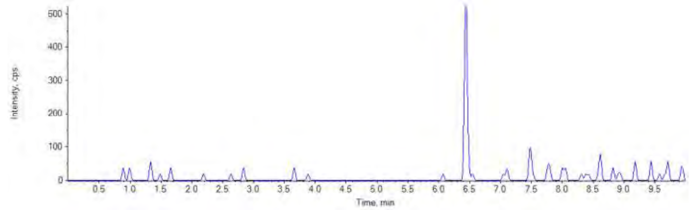
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



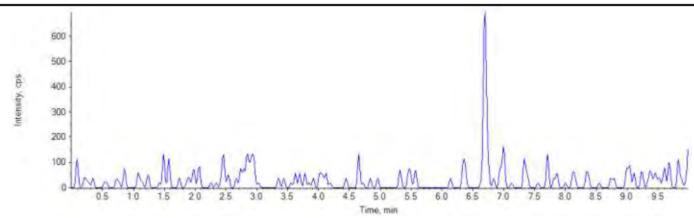
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



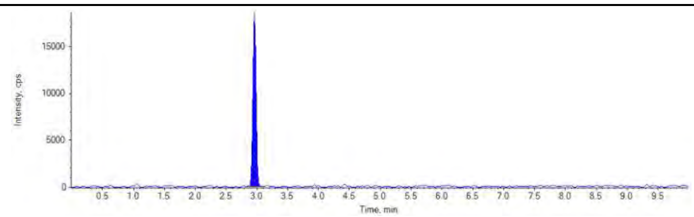
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.96 (2.96) min

Calculated Conc: 0.968 ng/L

Area Ratio: 0.0317

Sample Type: (Quality Control)



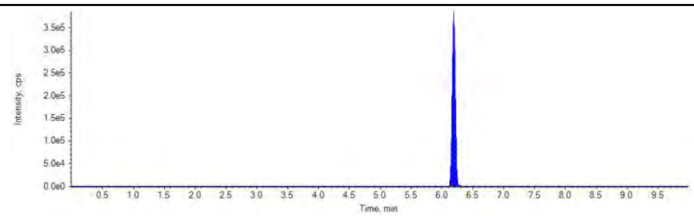
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.19 (6.19) min

Calculated Conc: 26.9 ng/L

Area Ratio: 0.645

Sample Type: (Quality Control)



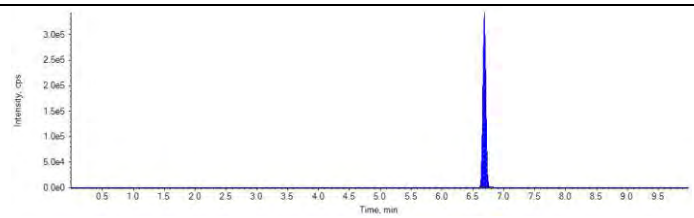
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.68 (6.68) min

Calculated Conc: 116. ng/L

Area Ratio: 0.626

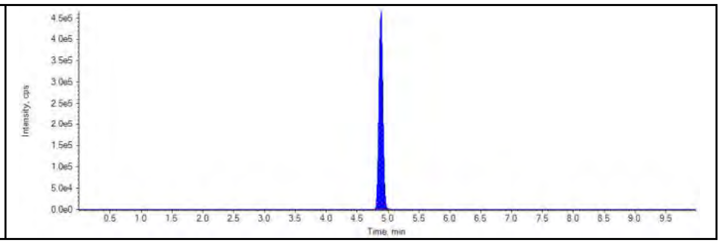
Sample Type: (Quality Control)

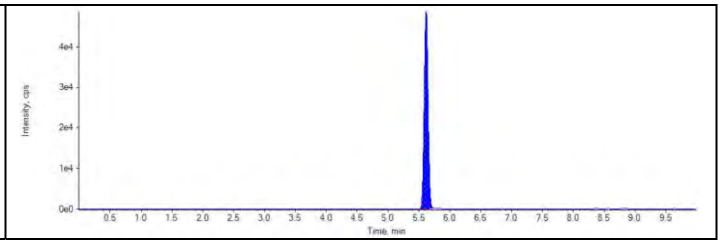


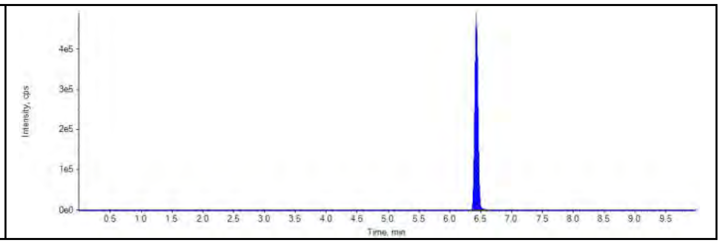
Sample ID	5898852~SPIKE	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	11
Acquisition Date	2018/12/21 3:03:41 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181221\WS#5898852.wiff		
Result Table	PFC_Water_181221_5898852_EPA537_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2050000.	4.88	1.00	-
MPFOS	216000.	5.62	1.00	-
D3-MeFOSAA IS	1690000.	6.43	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	475000	2.07	50.0	17.9	35.8
PFHxA 1	2670000	2.98	50.0	36.6	73.2
PFHxS 1	547000	4.15	50.0	35.9	71.8
PFHpA 1	3130000	4.04	50.0	37.6	75.3
PFOA 1	2670000	4.90	50.0	39.1	78.1
PFOS 1	335000	5.63	50.0	38.6	77.3
PFNA 1	1800000	5.60	50.0	49.1	98.3
PFDA 1	2080000	6.20	50.0	38.8	77.7
PFUnA 1	1980000	6.71	50.0	41.7	83.3
PFDoA 1	2010000	7.14	50.0	36.8	73.5
PFTrDA 1	2030000	7.51	50.0	36.6	73.2
PFTeDA 1	2210000	7.83	50.0	33.9	67.9
MeFOSAA 1	1900000	6.44	200.	150.	74.8
EtFOSAA 1	1680000	6.70	200.	144.	72.2
13C2-PFHxA	1680000	2.97	40.0	25.1	62.7
13C2-PFDA	1550000	6.19	40.0	31.6	79.0
D5-EtFOSAA	1190000	6.69	160.	130.	81.2

MPFOA (Internal Standard)	
RT (Exp. RT):	4.88(4.84) min
Concentration:	1.00 ng/L
Sample Type:	(Quality Control)

MPFOS (Internal Standard)	
RT (Exp. RT):	5.62(5.38) min
Concentration:	1.00 ng/L
Sample Type:	(Quality Control)

D3-MeFOSAA IS (Internal Standard)	
RT (Exp. RT):	6.43(6.43) min
Concentration:	1.00 ng/L
Sample Type:	(Quality Control)

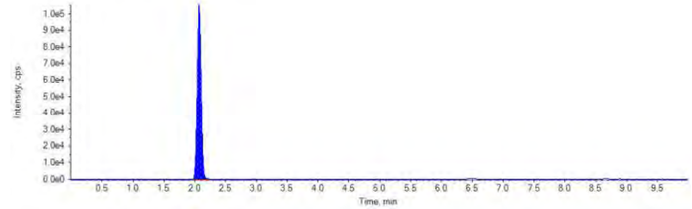
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.07 (1.85) min

Calculated Conc: 17.9 ng/L

Area Ratio: 2.20

Sample Type: (Quality Control)



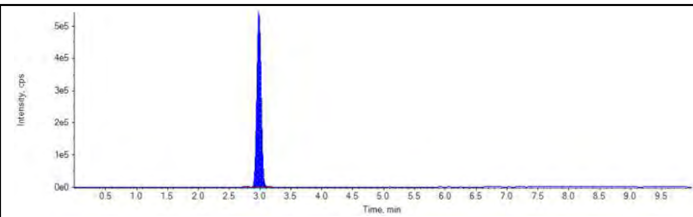
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.98 (2.97) min

Calculated Conc: 36.6 ng/L

Area Ratio: 1.30

Sample Type: (Quality Control)



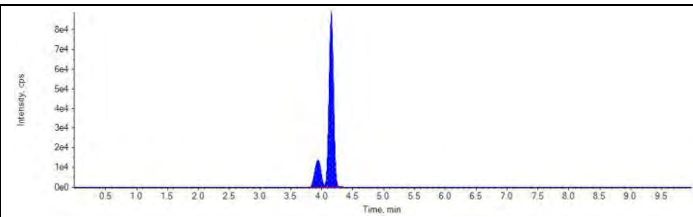
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.15 (4.05) min

Calculated Conc: 35.9 ng/L

Area Ratio: 2.54

Sample Type: (Quality Control)



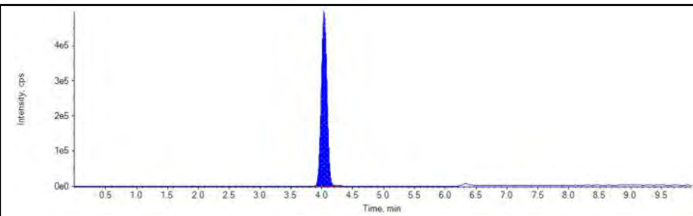
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 4.04 (3.91) min

Calculated Conc: 37.6 ng/L

Area Ratio: 1.53

Sample Type: (Quality Control)



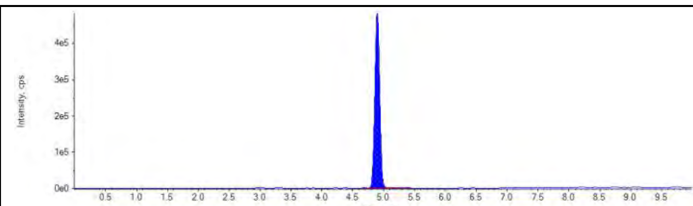
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.90 (4.89) min

Calculated Conc: 39.1 ng/L

Area Ratio: 1.31

Sample Type: (Quality Control)



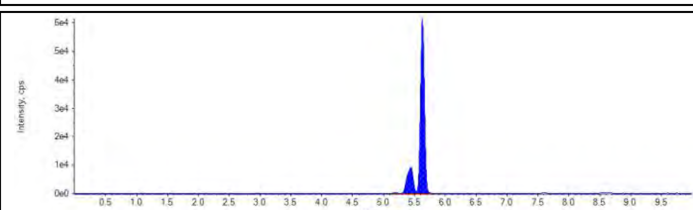
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.63 (5.38) min

Calculated Conc: 38.6 ng/L

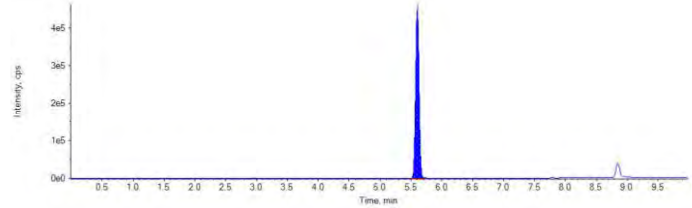
Area Ratio: 1.55

Sample Type: (Quality Control)



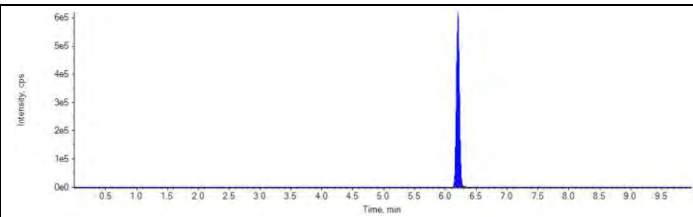
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.60 (5.49) min
Calculated Conc: 49.1 ng/L
Area Ratio: 0.881
Sample Type: (Quality Control)



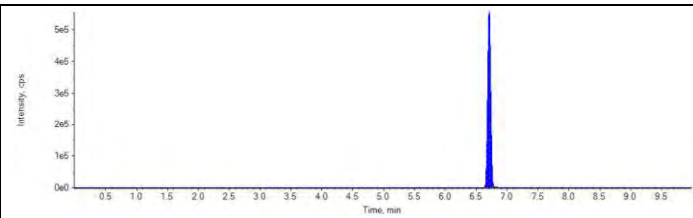
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.20 (6.07) min
Calculated Conc: 38.8 ng/L
Area Ratio: 1.01
Sample Type: (Quality Control)



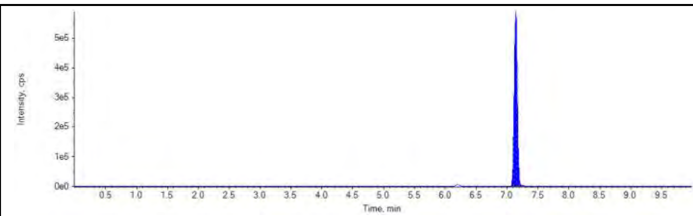
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.71 (6.62) min
Calculated Conc: 41.7 ng/L
Area Ratio: 0.969
Sample Type: (Quality Control)



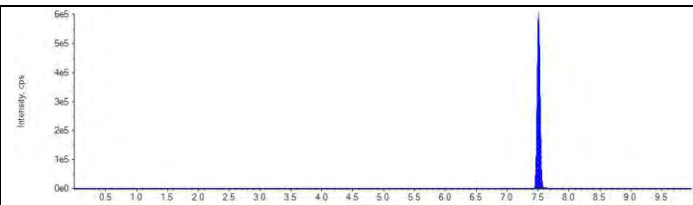
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.14 (7.04) min
Calculated Conc: 36.8 ng/L
Area Ratio: 0.984
Sample Type: (Quality Control)



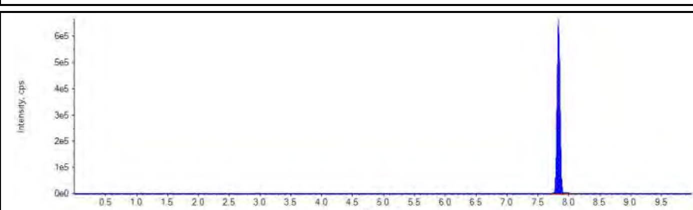
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.51 (7.38) min
Calculated Conc: 36.6 ng/L
Area Ratio: 0.994
Sample Type: (Quality Control)



PFTeDA 1 (713.000/669.000 Da)

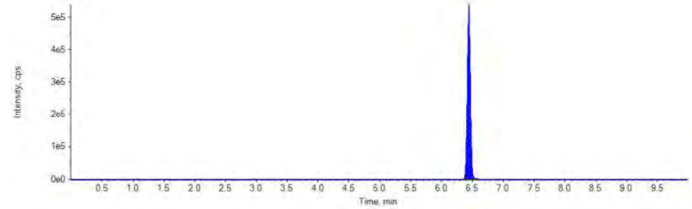
RT (Exp. RT): 7.83 (7.64) min
Calculated Conc: 33.9 ng/L
Area Ratio: 1.08
Sample Type: (Quality Control)



MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 6.44 (6.29) min

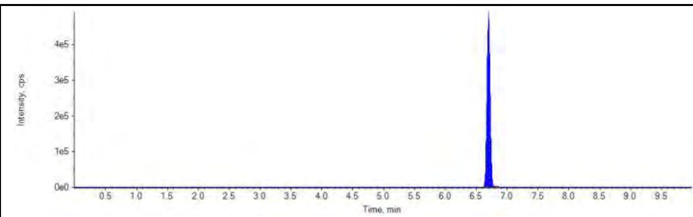
Calculated Conc: 150. ng/L
Area Ratio: 1.13
Sample Type: (Quality Control)



EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 6.70 (6.66) min

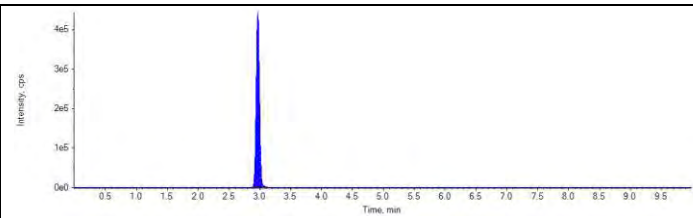
Calculated Conc: 144. ng/L
Area Ratio: 0.998
Sample Type: (Quality Control)



13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.97 (2.96) min

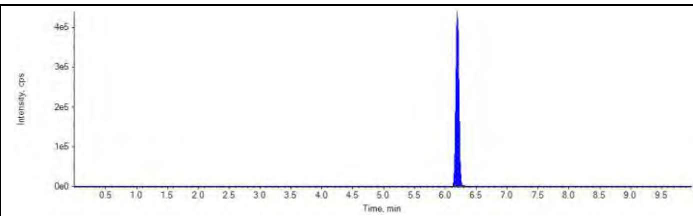
Calculated Conc: 25.1 ng/L
Area Ratio: 0.822
Sample Type: (Quality Control)



13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.19 (6.19) min

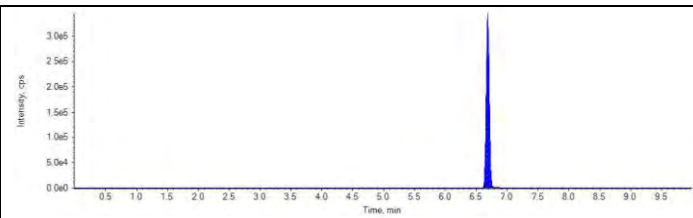
Calculated Conc: 31.6 ng/L
Area Ratio: 0.756
Sample Type: (Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.69 (6.68) min

Calculated Conc: 130. ng/L
Area Ratio: 0.704
Sample Type: (Quality Control)



Sample ID	5898852~MTRX SPK	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	12
Acquisition Date	2018/12/21 3:19:16 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181221\WS#5898852.wiff		
Result Table	PFC_Water_181221_5898852_EPA537_EToxics.rdb		
Samples Annotation	IOF242		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1990000.	4.87	1.00	-
MPFOS	222000.	5.61	1.00	-
D3-MeFOSAA IS	1760000.	6.42	1.00	-

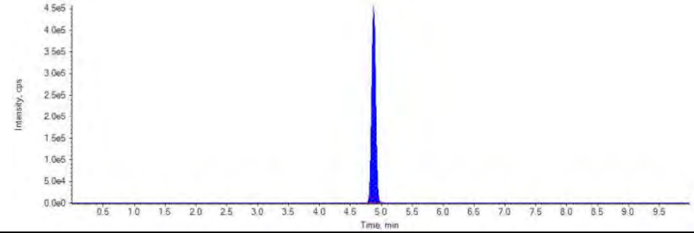
Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	491000	2.06	50.0	18.0	36.1
PFHxA 1	2820000	2.97	50.0	39.9	79.7
PFHxS 1	881000	4.14	50.0	56.2	112.0
PFHpA 1	3150000	4.03	50.0	39.1	78.1
PFOA 1	2520000	4.89	50.0	37.9	75.9
PFOS 1	682000	5.62	50.0	76.5	153.0
PFNA 1	1660000	5.60	50.0	46.6	93.2
PFDA 1	2160000	6.20	50.0	41.6	83.3
PFUnA 1	1770000	6.70	50.0	38.2	76.5
PFDoA 1	1950000	7.13	50.0	36.6	73.1
PFTrDA 1	1910000	7.50	50.0	35.4	70.7
PFTeDA 1	2160000	7.83	50.0	34.2	68.4
MeFOSAA 1	1830000	6.43	200.	138.	69.2
EtFOSAA 1	1650000	6.69	200.	136.	68.1
13C2-PFHxA	1720000	2.96	40.0	26.4	66.0
13C2-PFDA	1490000	6.19	40.0	31.3	78.3
D5-EtFOSAA	1130000	6.68	160.	119.	74.2

MPFOA (Internal Standard)

RT (Exp. RT): 4.87(4.84) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

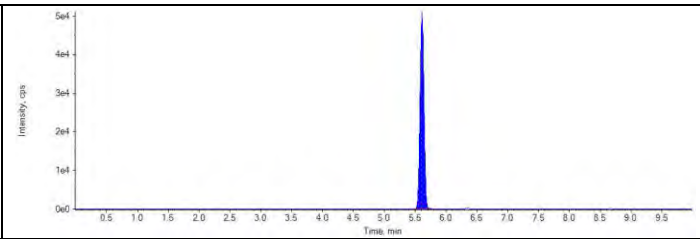


MPFOS (Internal Standard)

RT (Exp. RT): 5.61(5.38) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

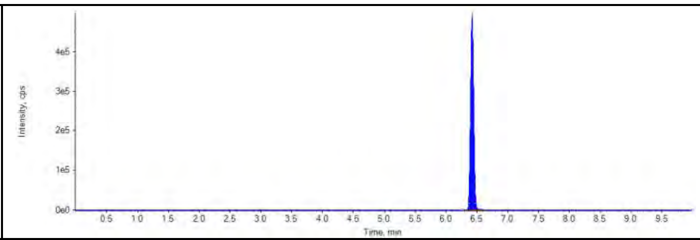


D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.42(6.43) min

Concentration: 1.00 ng/L

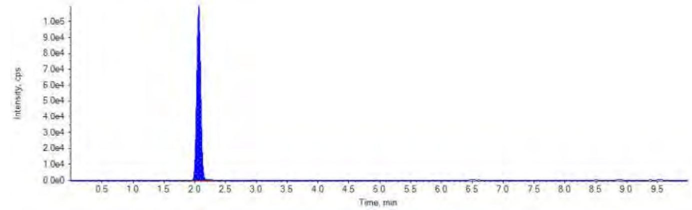
Sample Type: (Quality Control)



PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.06 (1.85) min

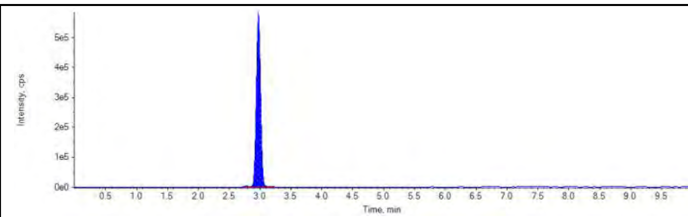
Calculated Conc: 18.0 ng/L
Area Ratio: 2.21
Sample Type: (Quality Control)



PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.97 (2.97) min

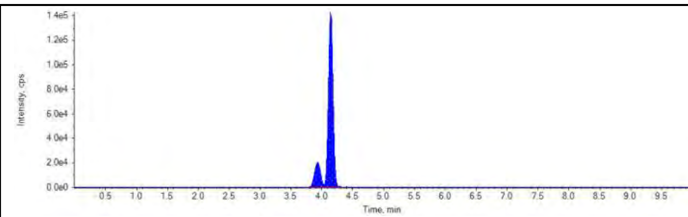
Calculated Conc: 39.9 ng/L
Area Ratio: 1.42
Sample Type: (Quality Control)



PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.14 (4.05) min

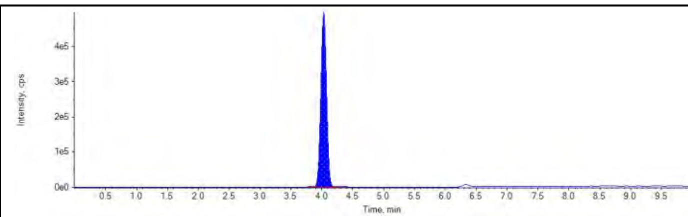
Calculated Conc: 56.2 ng/L
Area Ratio: 3.97
Sample Type: (Quality Control)



PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 4.03 (3.91) min

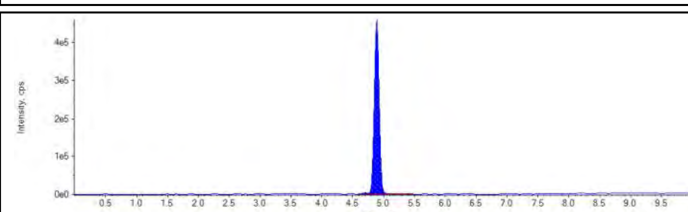
Calculated Conc: 39.1 ng/L
Area Ratio: 1.59
Sample Type: (Quality Control)



PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.89 (4.89) min

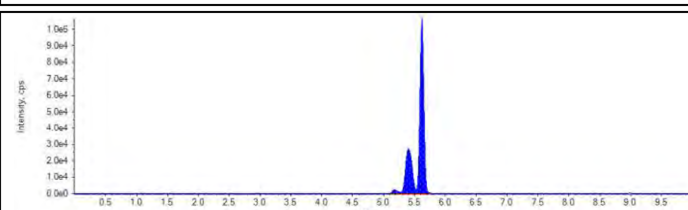
Calculated Conc: 37.9 ng/L
Area Ratio: 1.27
Sample Type: (Quality Control)



PFOS 1 (498.800/79.900 Da)

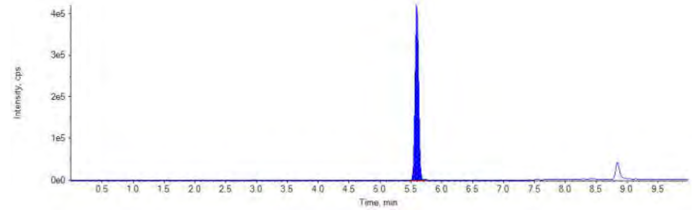
RT (Exp. RT): 5.62 (5.38) min

Calculated Conc: 76.5 ng/L
Area Ratio: 3.08
Sample Type: (Quality Control)



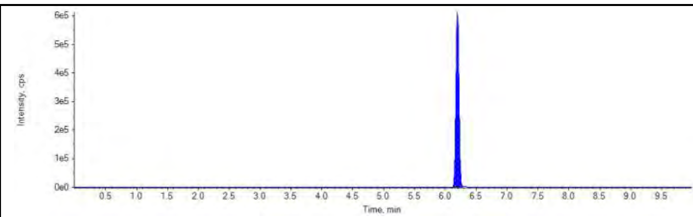
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.60 (5.49) min
Calculated Conc: 46.6 ng/L
Area Ratio: 0.835
Sample Type: (Quality Control)



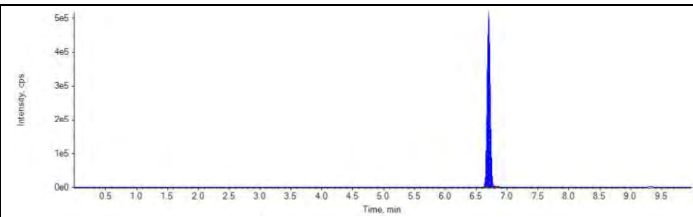
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.20 (6.07) min
Calculated Conc: 41.6 ng/L
Area Ratio: 1.09
Sample Type: (Quality Control)



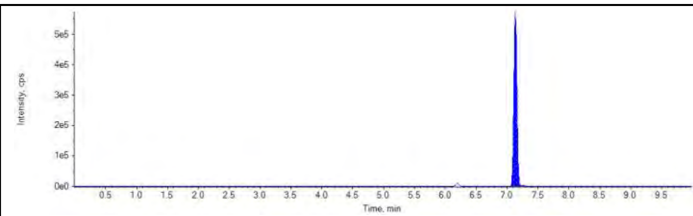
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.70 (6.62) min
Calculated Conc: 38.2 ng/L
Area Ratio: 0.889
Sample Type: (Quality Control)



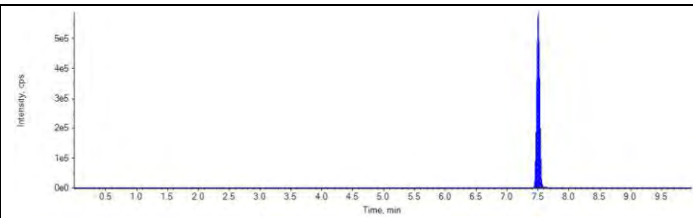
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.13 (7.04) min
Calculated Conc: 36.6 ng/L
Area Ratio: 0.979
Sample Type: (Quality Control)



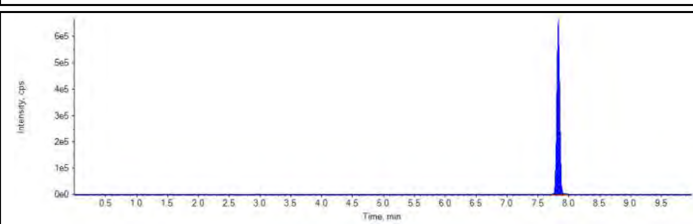
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.50 (7.38) min
Calculated Conc: 35.4 ng/L
Area Ratio: 0.961
Sample Type: (Quality Control)



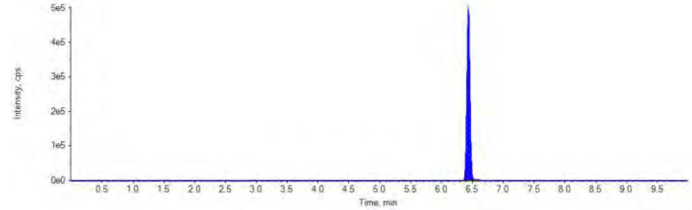
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.83 (7.64) min
Calculated Conc: 34.2 ng/L
Area Ratio: 1.09
Sample Type: (Quality Control)



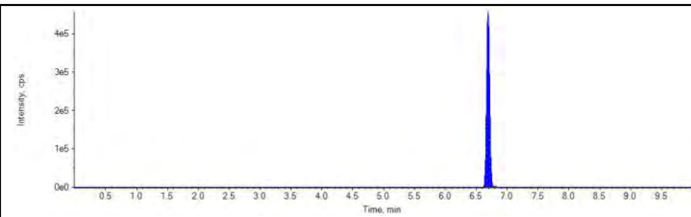
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT):	6.43 (6.29) min
Calculated Conc:	138. ng/L
Area Ratio:	1.04
Sample Type:	(Quality Control)



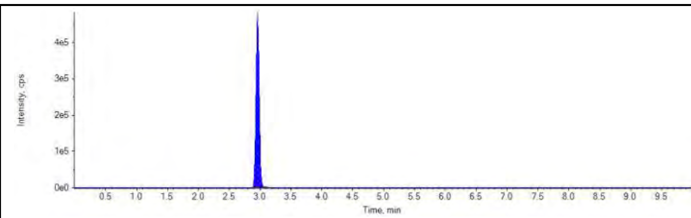
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT):	6.69 (6.66) min
Calculated Conc:	136. ng/L
Area Ratio:	0.942
Sample Type:	(Quality Control)



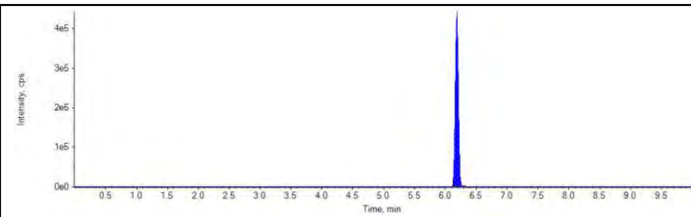
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT):	2.96 (2.96) min
Calculated Conc:	26.4 ng/L
Area Ratio:	0.864
Sample Type:	(Quality Control)



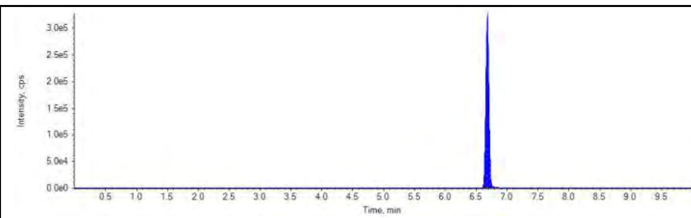
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT):	6.19 (6.19) min
Calculated Conc:	31.3 ng/L
Area Ratio:	0.749
Sample Type:	(Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT):	6.68 (6.68) min
Calculated Conc:	119. ng/L
Area Ratio:	0.644
Sample Type:	(Quality Control)



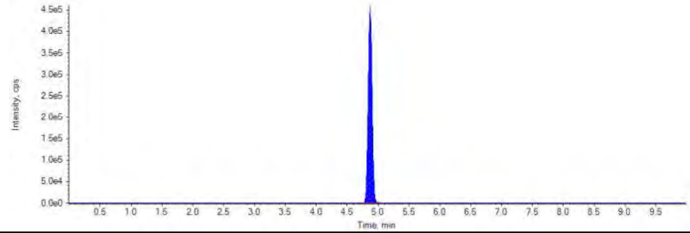
Sample ID	5898852~MTRX SPK:D1	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	13
Acquisition Date	2018/12/21 3:34:50 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181221\WS#5898852.wiff		
Result Table	PFC_Water_181221_5898852_EPA537_EToxics.rdb		
Samples Annotation	IOF242		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1960000.	4.87	1.00	-
MPFOS	234000.	5.61	1.00	-
D3-MeFOSAA IS	1830000.	6.42	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	727000	2.06	50.0	25.3	50.6
PFHxA 1	3090000	2.97	50.0	44.3	88.5
PFHxS 1	829000	4.14	50.0	50.1	100.0
PFHpA 1	3400000	4.02	50.0	42.7	85.4
PFOA 1	2730000	4.88	50.0	41.6	83.1
PFOS 1	629000	5.62	50.0	66.7	133.0
PFNA 1	1600000	5.59	50.0	45.7	91.3
PFDA 1	1930000	6.19	50.0	37.6	75.2
PFUnA 1	1880000	6.70	50.0	41.1	82.3
PFDoA 1	1930000	7.13	50.0	36.7	73.4
PFTrDA 1	1730000	7.50	50.0	32.6	65.1
PFTeDA 1	2040000	7.83	50.0	32.8	65.7
MeFOSAA 1	1970000	6.43	200.	142.	71.2
EtFOSAA 1	1610000	6.69	200.	127.	63.5
13C2-PFHxA	2130000	2.95	40.0	33.2	83.0
13C2-PFDA	1470000	6.18	40.0	31.3	78.2
D5-EtFOSAA	1140000	6.67	160.	115.	71.9

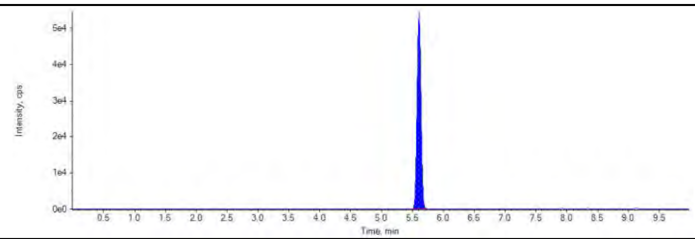
MPFOA (Internal Standard)

RT (Exp. RT): 4.87(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



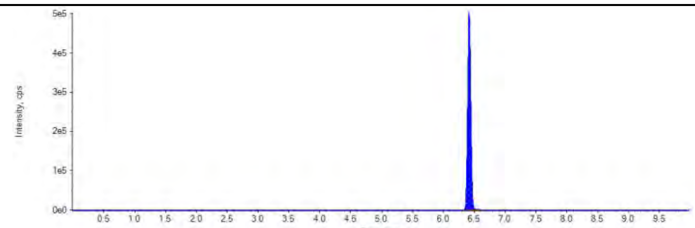
MPFOS (Internal Standard)

RT (Exp. RT): 5.61(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



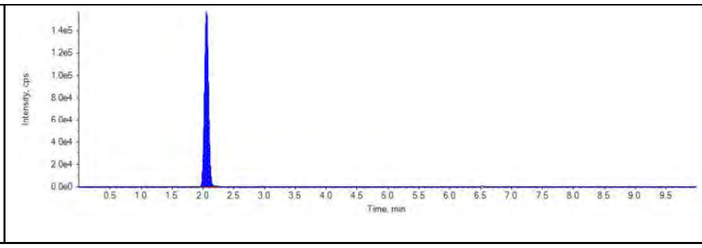
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.42(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



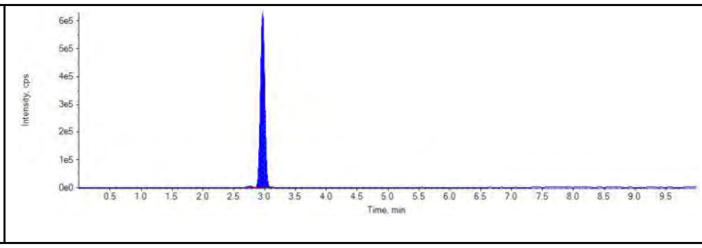
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	2.06 (1.85) min
Calculated Conc:	25.3 ng/L
Area Ratio:	3.10
Sample Type:	(Quality Control)



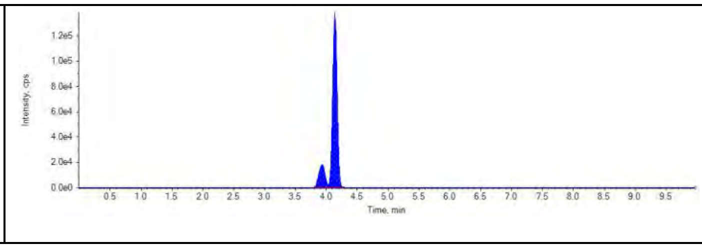
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	2.97 (2.97) min
Calculated Conc:	44.3 ng/L
Area Ratio:	1.58
Sample Type:	(Quality Control)



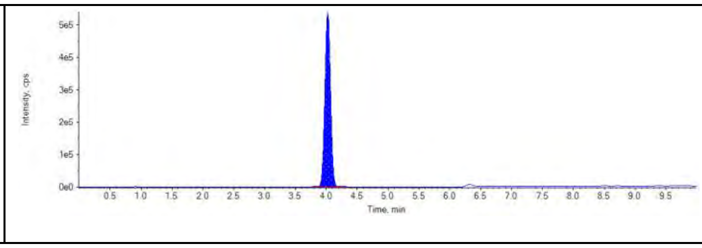
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	4.14 (4.05) min
Calculated Conc:	50.1 ng/L
Area Ratio:	3.54
Sample Type:	(Quality Control)



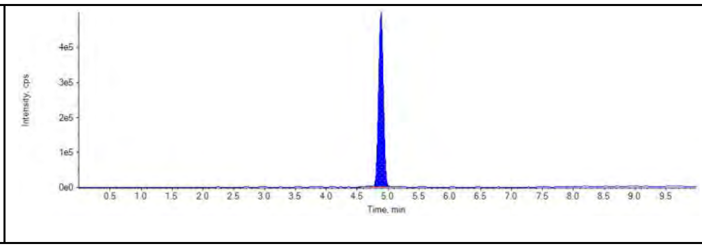
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	4.02 (3.91) min
Calculated Conc:	42.7 ng/L
Area Ratio:	1.73
Sample Type:	(Quality Control)



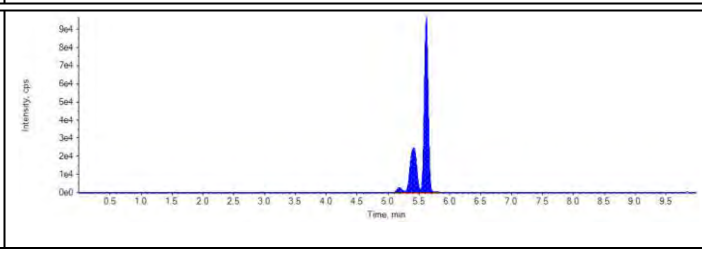
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT):	4.88 (4.89) min
Calculated Conc:	41.6 ng/L
Area Ratio:	1.39
Sample Type:	(Quality Control)



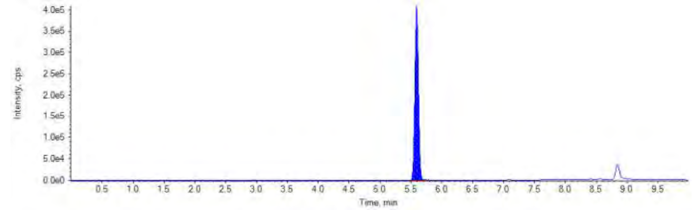
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	5.62 (5.38) min
Calculated Conc:	66.7 ng/L
Area Ratio:	2.68
Sample Type:	(Quality Control)



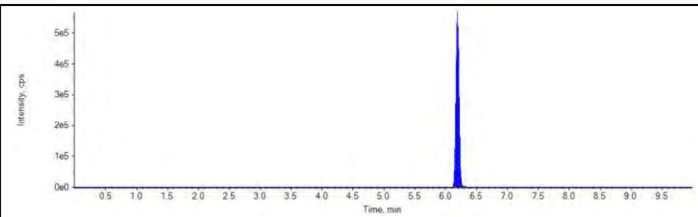
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.59 (5.49) min
Calculated Conc: 45.7 ng/L
Area Ratio: 0.818
Sample Type: (Quality Control)



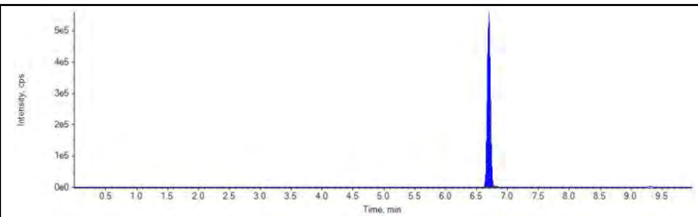
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.19 (6.07) min
Calculated Conc: 37.6 ng/L
Area Ratio: 0.982
Sample Type: (Quality Control)



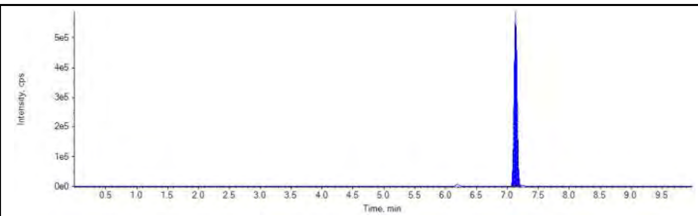
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.70 (6.62) min
Calculated Conc: 41.1 ng/L
Area Ratio: 0.957
Sample Type: (Quality Control)



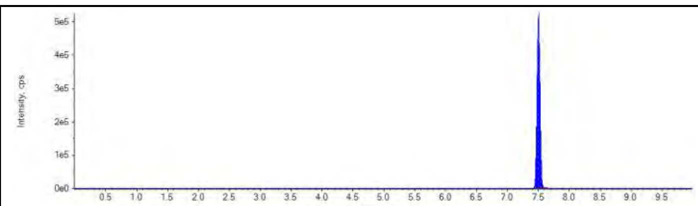
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.13 (7.04) min
Calculated Conc: 36.7 ng/L
Area Ratio: 0.982
Sample Type: (Quality Control)



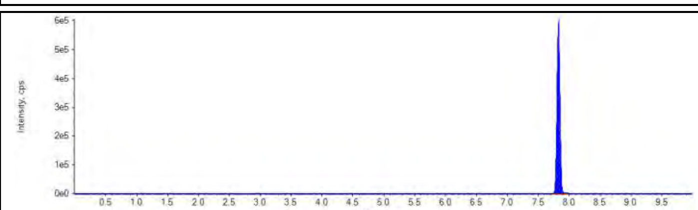
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.50 (7.38) min
Calculated Conc: 32.6 ng/L
Area Ratio: 0.885
Sample Type: (Quality Control)



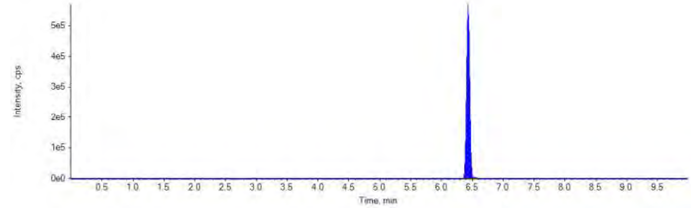
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.83 (7.64) min
Calculated Conc: 32.8 ng/L
Area Ratio: 1.04
Sample Type: (Quality Control)



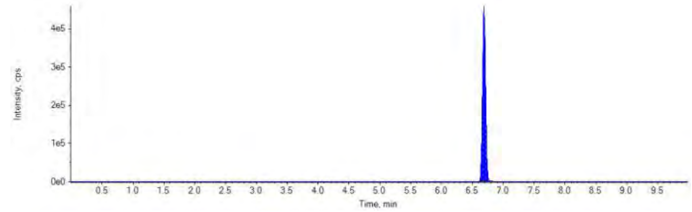
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 6.43 (6.29) min
Calculated Conc: 142. ng/L
Area Ratio: 1.07
Sample Type: (Quality Control)



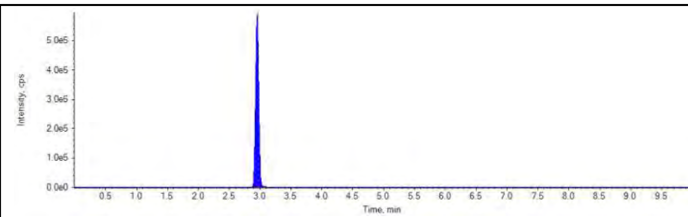
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 6.69 (6.66) min
Calculated Conc: 127. ng/L
Area Ratio: 0.879
Sample Type: (Quality Control)



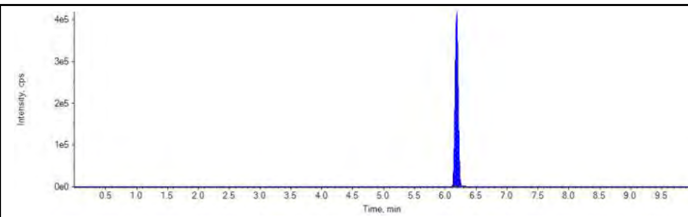
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.95 (2.96) min
Calculated Conc: 33.2 ng/L
Area Ratio: 1.09
Sample Type: (Quality Control)



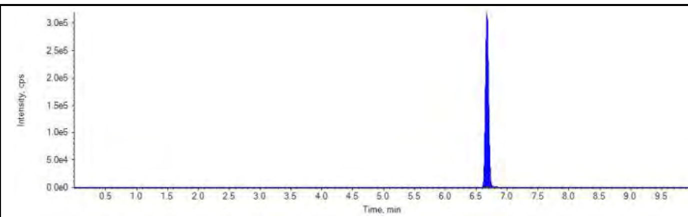
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.18 (6.19) min
Calculated Conc: 31.3 ng/L
Area Ratio: 0.748
Sample Type: (Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.67 (6.68) min
Calculated Conc: 115. ng/L
Area Ratio: 0.623
Sample Type: (Quality Control)



Quantitation Results

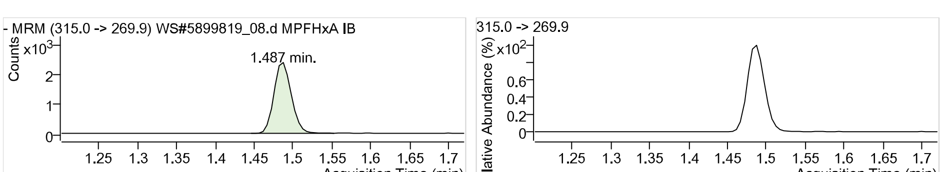
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

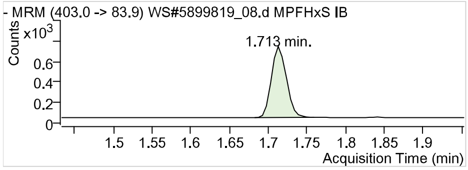
Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5899819_08.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-A8
Acq. Date	2018/12/21 5:09:01 PM	**Injection Volume**	Per Method
Sample Annotation	-		

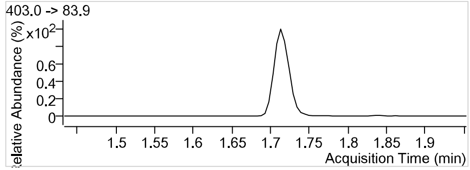
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3657	1.49	1 µg/L		
MPFHxS	924	1.71	1 µg/L		
MPFHpA	5434	1.73	1 µg/L		
MPFOA	5147	1.91	1 µg/L		
MPFOS	1159	2.00	1 µg/L		
MPFNA	4834	2.05	1 µg/L		
MPFDA	3271	2.16	1 µg/L		
MPFUnA	3930	2.26	1 µg/L		
MPFDoA	5020	2.35	1 µg/L		
MPFTeDA	7214	2.48	1 µg/L		
13C6-PFHxA IS	16464	1.49	1 µg/L		
13C9-PFDA IS	20022	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3657	1.49	-	98.30 µg/L	-
18O2-PFHxS	924	1.71	-	96.96 µg/L	-
13C4-PFHpA	5434	1.73	-	101.02 µg/L	-
13C4-PFOA	5147	1.91	-	102.28 µg/L	-
13C4-PFOS	1159	2.00	-	110.28 µg/L	-
13C5-PFNA	4834	2.05	-	100.89 µg/L	-
13C2-PFDA	3271	2.16	-	95.51 µg/L	-
13C2-PFUnA	3930	2.26	-	98.31 µg/L	-
13C2-PFDoA	5020	2.35	-	97.77 µg/L	-
13C2-PFTeDA	7214	2.48	-	96.36 µg/L	-
13C6-PFHxA	16464	1.49	-	2.35 µg/L	-
13C9-PFDA	20022	2.16	-	2.41 µg/L	-

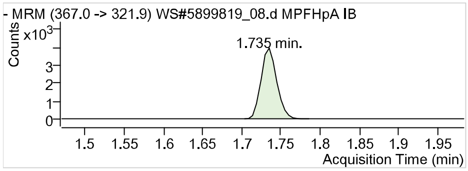


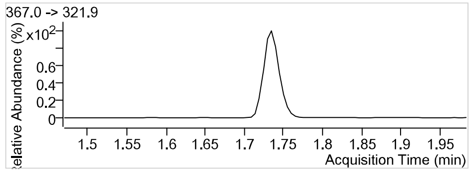
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



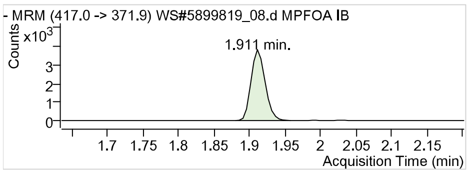


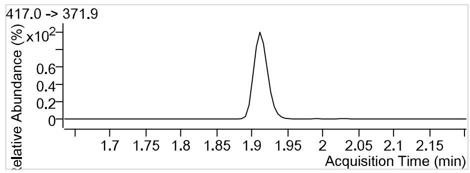
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: Sample



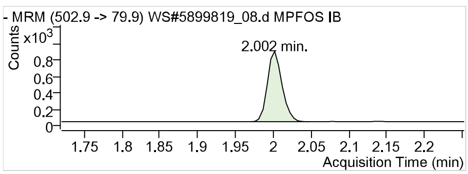


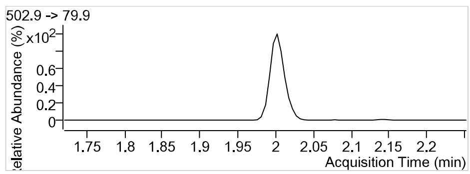
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: Sample



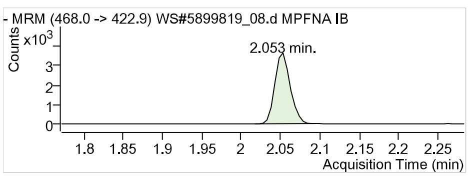


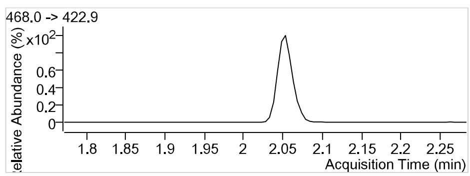
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: Sample



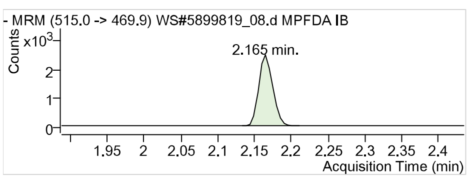


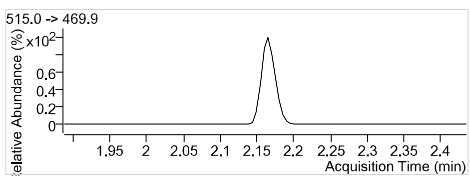
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: Sample



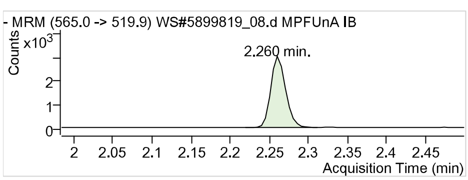


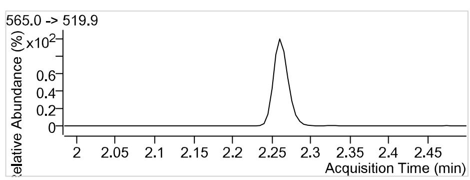
MPFNA Internal Standard
RT (Exp. RT): 2.053 (2.053)
Concentration: 1 µg/L
Sample type: Sample



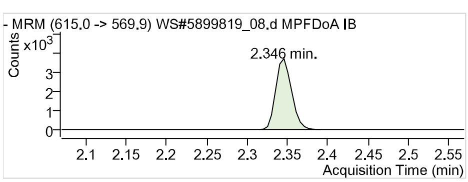


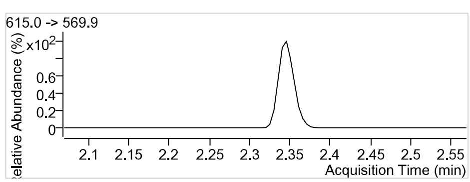
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



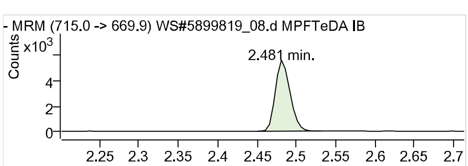


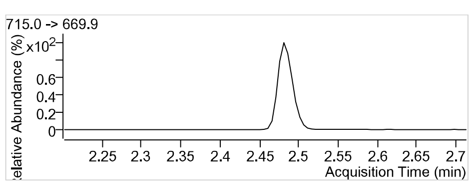
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: Sample



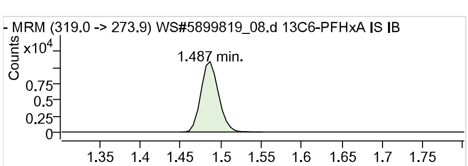


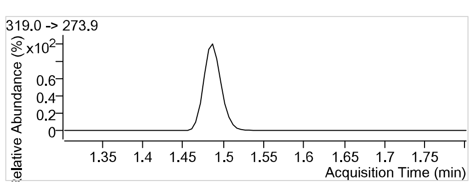
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: Sample



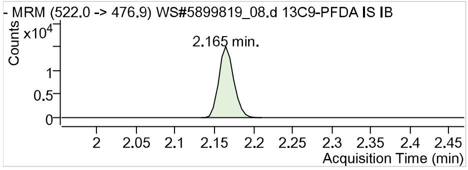


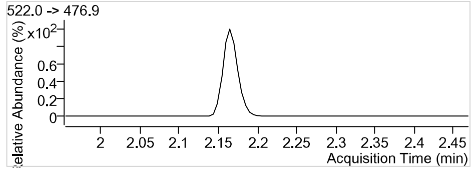
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: Sample



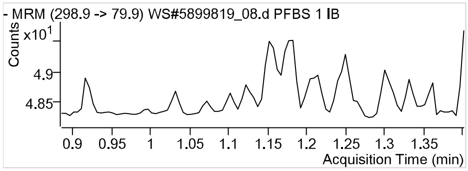


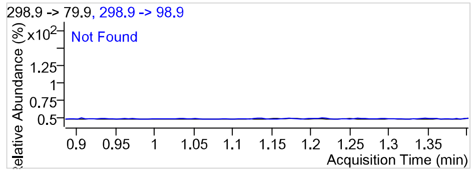
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.487 (1.487)
Concentration: 1 µg/L
Sample type: Sample



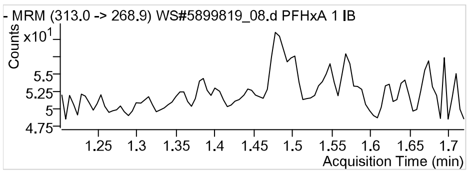


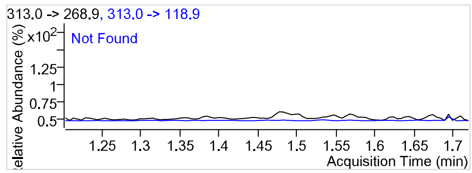
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



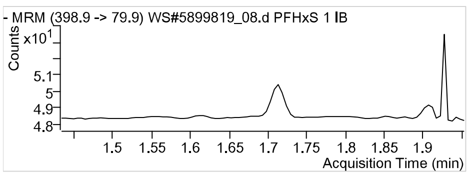


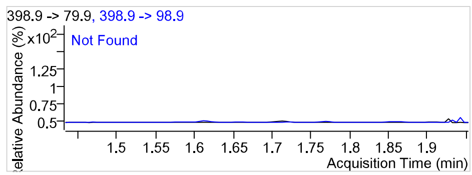
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.162)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



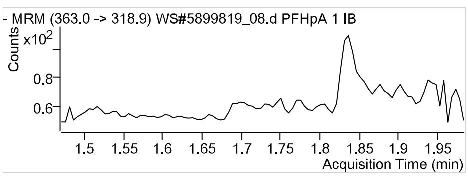


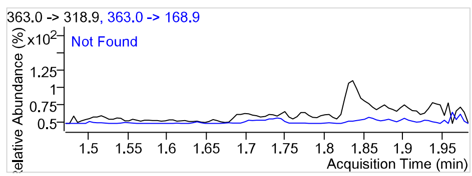
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.488)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



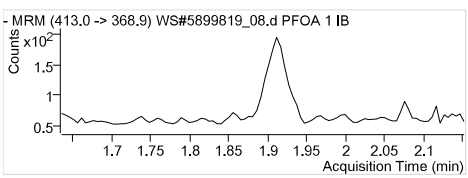


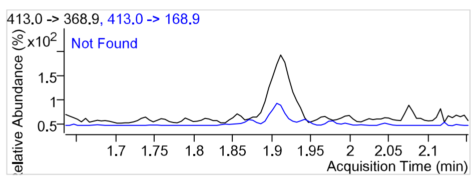
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.713)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



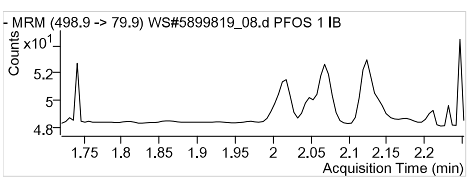


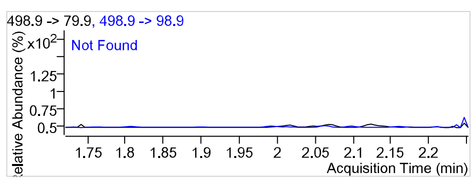
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.735)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



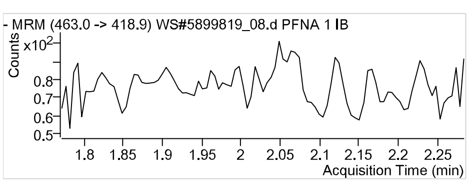


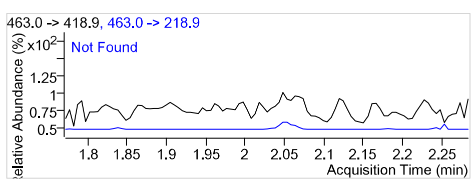
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.912)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



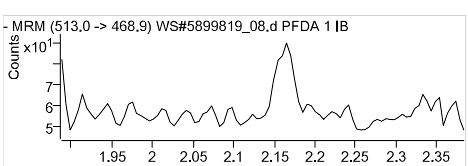


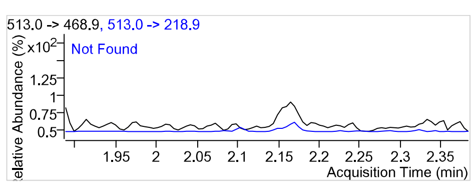
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 0.000 (2.002)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



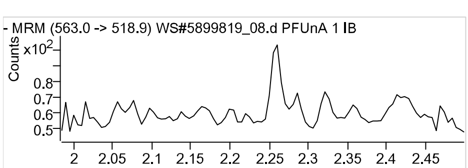


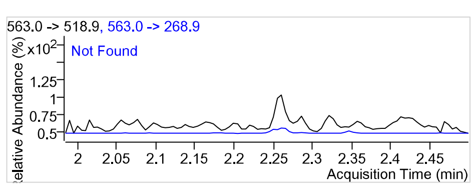
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.053)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



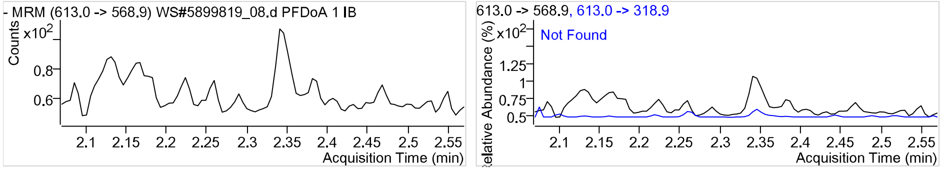


PFDA 1 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.165)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample

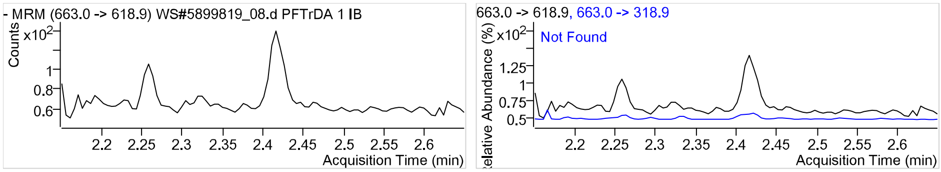




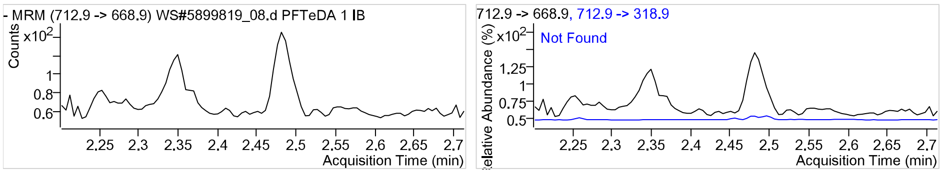
PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.260)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



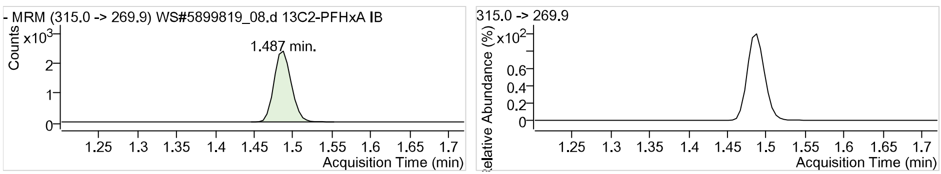
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.346)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



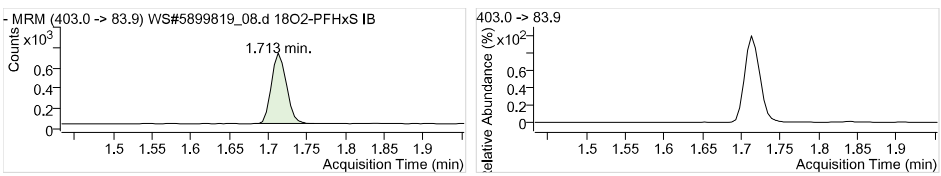
PFTrDA 1 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.416)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



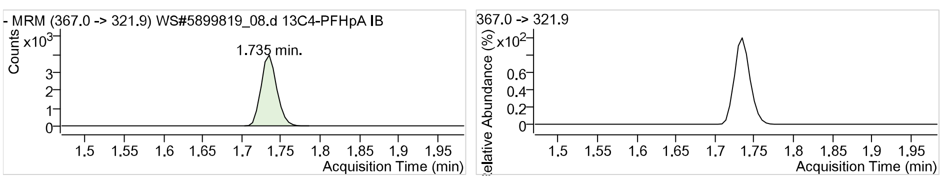
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.481)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



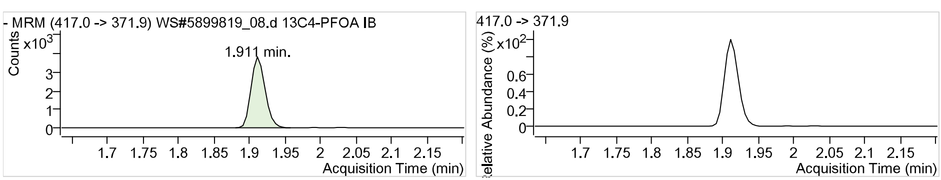
13C2-PFHxA 315.0 -> 269.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 98.30 µg/L
Area ratio: 0.22212
Sample type: Sample



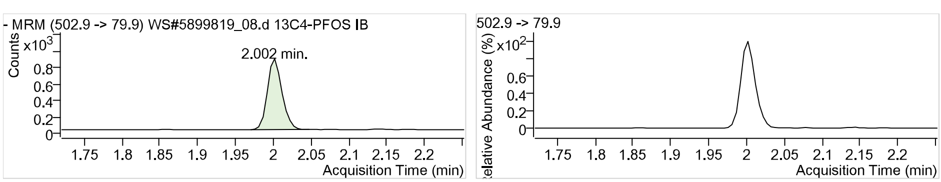
18O2-PFHxS 403.0 -> 83.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 96.96 µg/L
Area ratio: 0.05612
Sample type: Sample



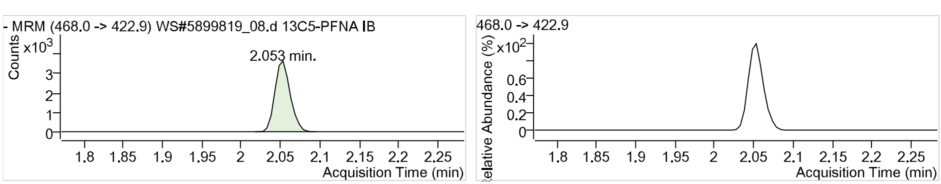
13C4-PFHpA 367.0 -> 321.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 101.02 µg/L
Area ratio: 0.33005
Sample type: Sample



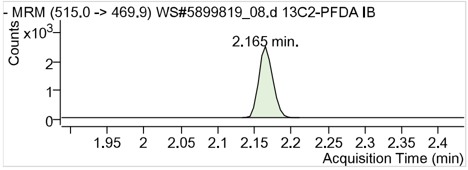
13C4-PFOA 417.0 -> 371.9
RT (Exp. RT): 1.911 (1.911)
Calc. conc. 102.28 µg/L
Area ratio: 0.31262
Sample type: Sample

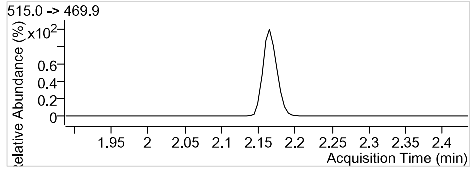


13C4-PFOS 502.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 110.28 µg/L
Area ratio: 0.07040
Sample type: Sample

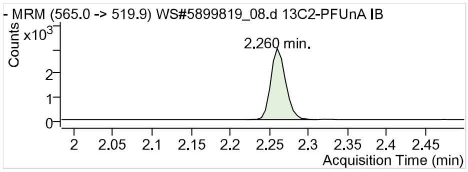


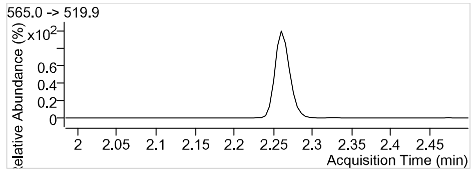
13C5-PFNA 468.0 -> 422.9
RT (Exp. RT): 2.053 (2.053)
Calc. conc. 100.89 µg/L
Area ratio: 0.29361
Sample type: Sample



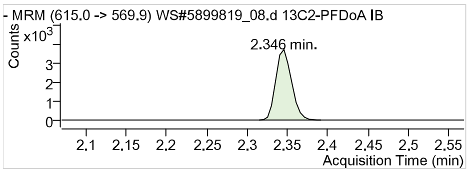


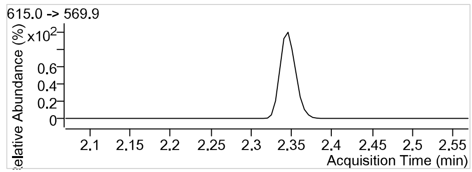
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	95.51 µg/L
Area ratio:	0.16337
Sample type:	Sample



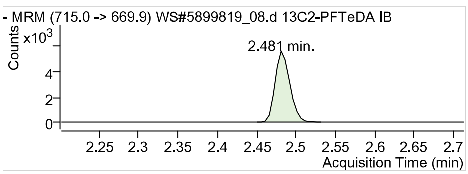


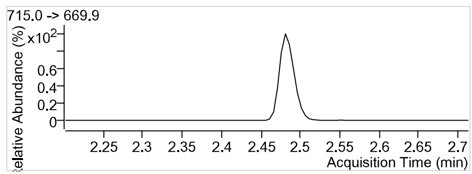
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	98.31 µg/L
Area ratio:	0.19628
Sample type:	Sample



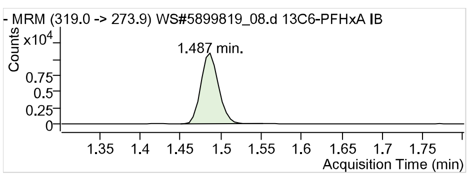


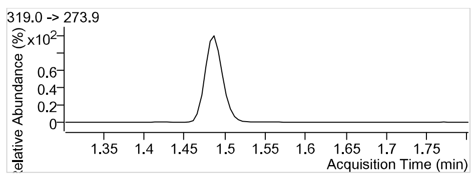
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	97.77 µg/L
Area ratio:	0.25072
Sample type:	Sample



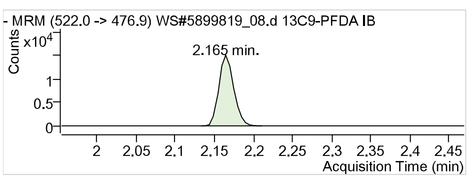


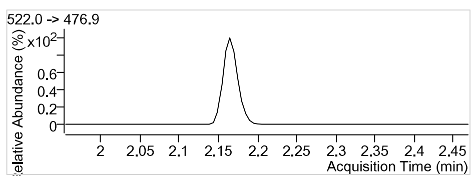
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	96.36 µg/L
Area ratio:	0.36030
Sample type:	Sample





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.35 µg/L
Area ratio:	0
Sample type:	Sample





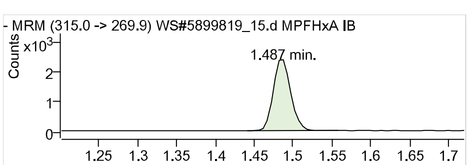
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.41 µg/L
Area ratio:	0
Sample type:	Sample

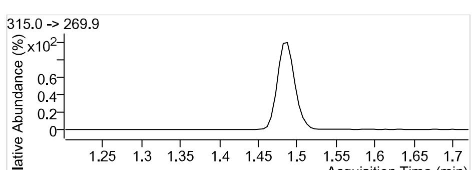
Agilent Technologies

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics		
Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5899819_15.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-A8
Acq. Date	2018/12/21 5:43:24 PM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3693	1.49	1 µg/L		
MPFHxS	1014	1.71	1 µg/L		
MPFHpA	5443	1.73	1 µg/L		
MPFOA	4964	1.91	1 µg/L		
MPFOS	1051	2.00	1 µg/L		
MPFNA	4591	2.05	1 µg/L		
MPFDA	3414	2.16	1 µg/L		
MPFUnA	4168	2.26	1 µg/L		
MPFDoA	4975	2.35	1 µg/L		
MPFTeDA	7257	2.48	1 µg/L		
13C6-PFHxA IS	16584	1.49	1 µg/L		
13C9-PFDA IS	19612	2.16	1 µg/L		

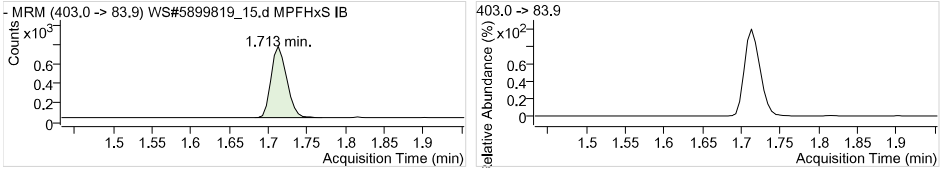
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3693	1.49	-	98.55 µg/L	-
18O2-PFHxS	1014	1.71	-	105.63 µg/L	-
13C4-PFHpA	5443	1.73	-	100.45 µg/L	-
13C4-PFOA	4964	1.91	-	97.93 µg/L	-
13C4-PFOS	1051	2.00	-	99.28 µg/L	-
13C5-PFNA	4591	2.05	-	95.13 µg/L	-
13C2-PFDA	3414	2.16	-	101.77 µg/L	-
13C2-PFUnA	4168	2.26	-	106.45 µg/L	-
13C2-PFDoA	4975	2.35	-	98.92 µg/L	-
13C2-PFTeDA	7257	2.48	-	98.97 µg/L	-
13C6-PFHxA	16584	1.49	-	2.37 µg/L	-
13C9-PFDA	19612	2.16	-	2.36 µg/L	-



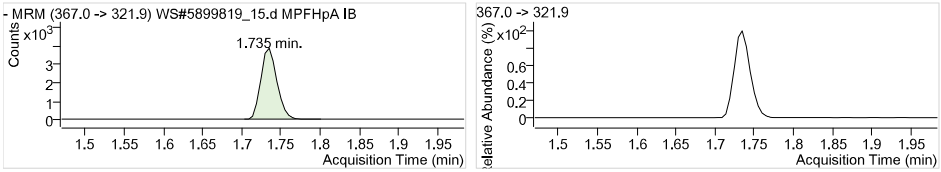


MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample

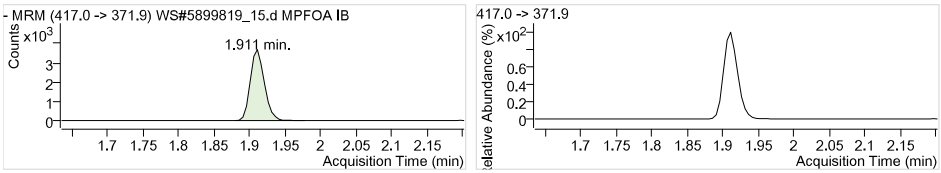
Agilent Technologies



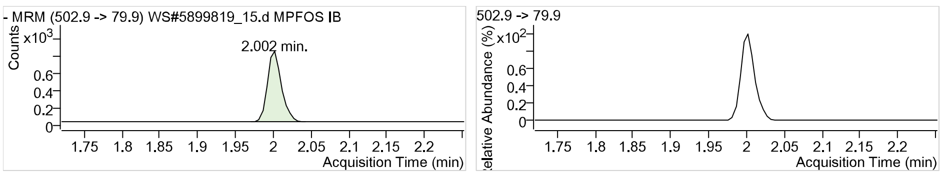
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	Sample



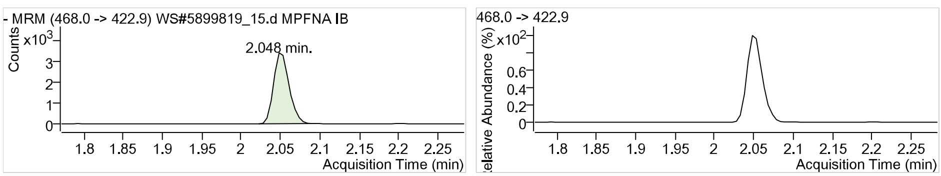
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	Sample



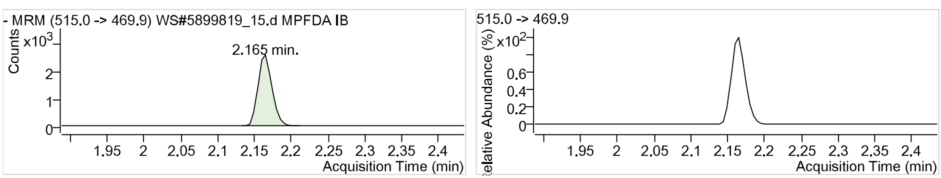
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	Sample



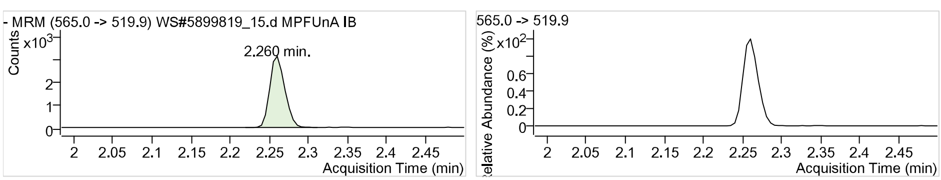
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	Sample



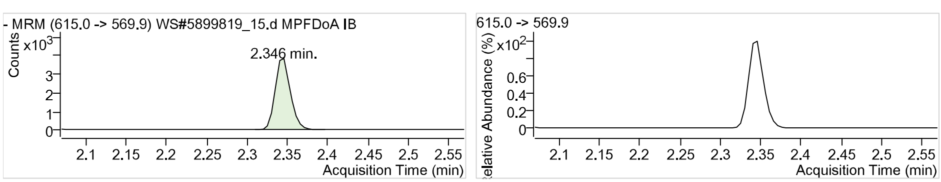
MPFNA	Internal Standard
RT (Exp. RT):	2.048 (2.053)
Concentration:	1 µg/L
Sample type:	Sample



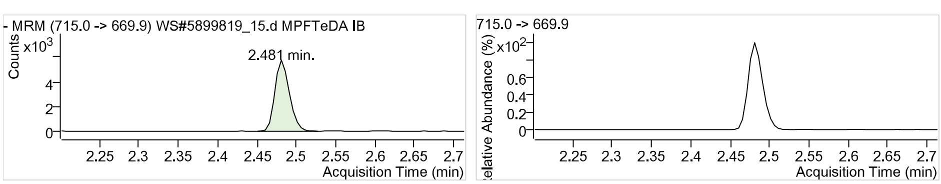
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



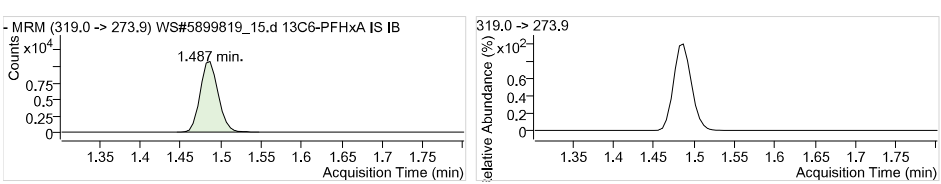
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	Sample



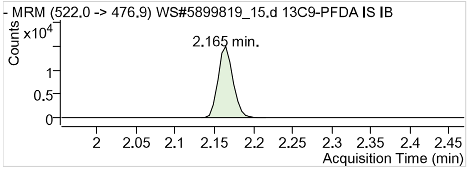
MPFDoA	Internal Standard
RT (Exp. RT):	2.346 (2.346)
Concentration:	1 µg/L
Sample type:	Sample

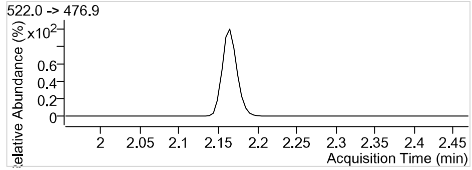


MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	Sample

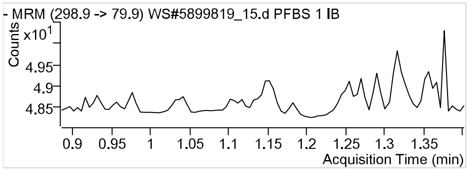


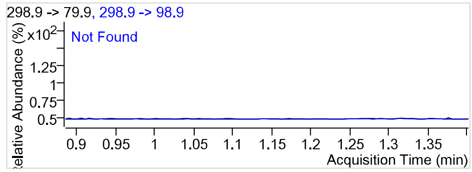
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



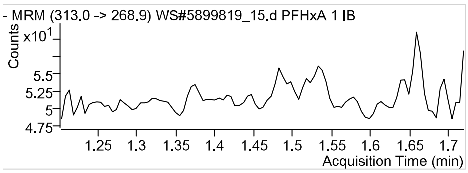


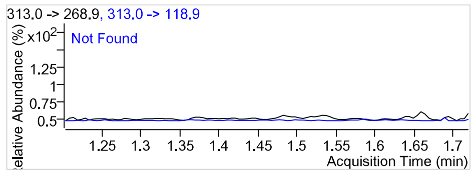
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



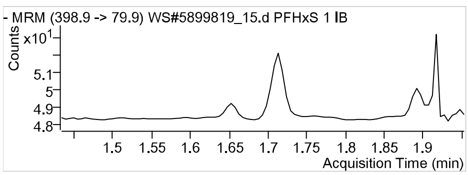


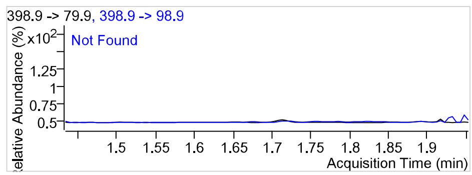
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	0.000 (1.162)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



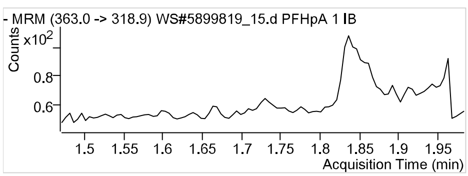


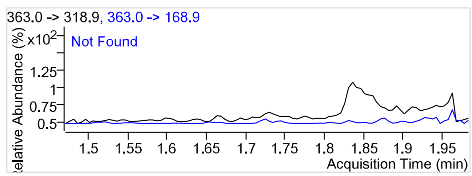
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	0.000 (1.488)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



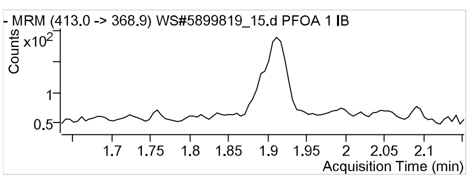


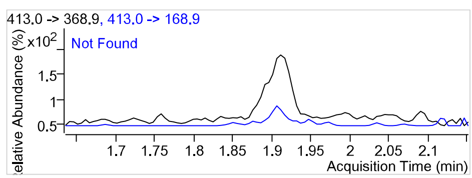
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	0.000 (1.713)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



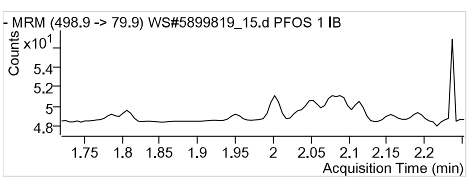


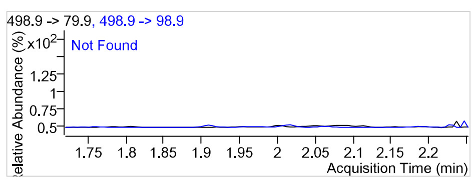
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	0.000 (1.735)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



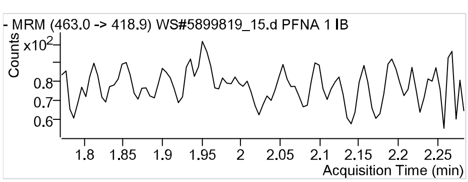


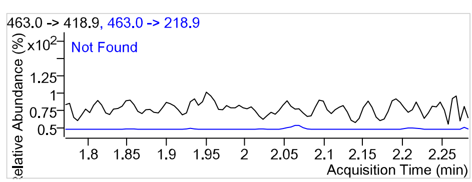
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	0.000 (1.912)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



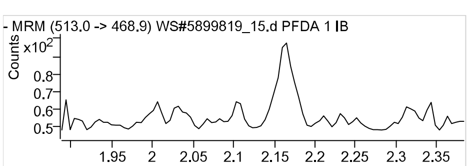


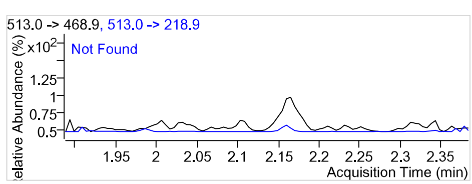
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	0.000 (2.002)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



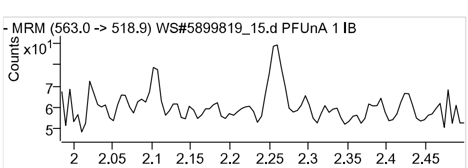


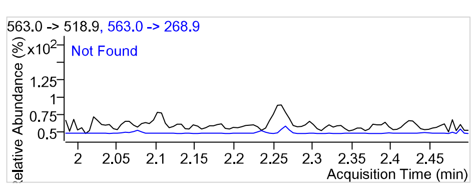
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	0.000 (2.053)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



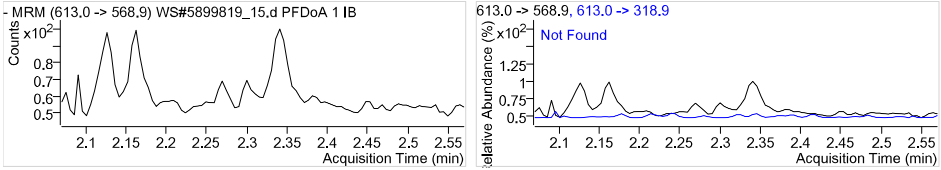


PFDA 1	513.0 -> 468.9
RT (Exp. RT):	0.000 (2.165)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

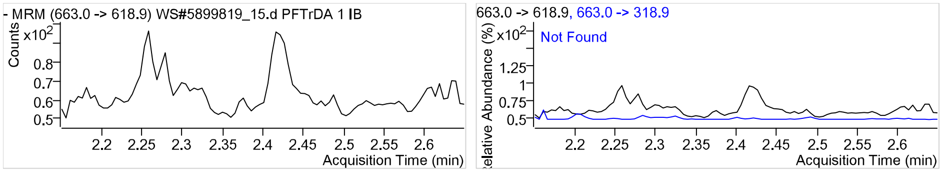




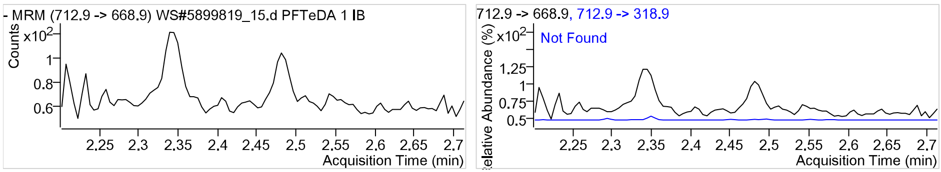
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	0.000 (2.260)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



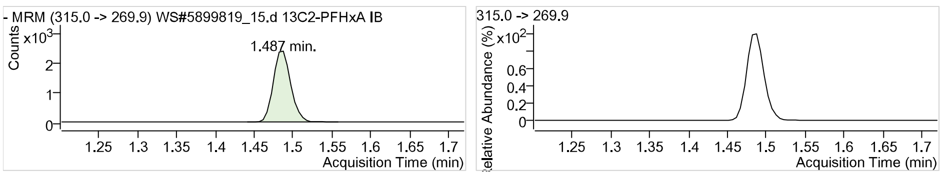
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.346)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



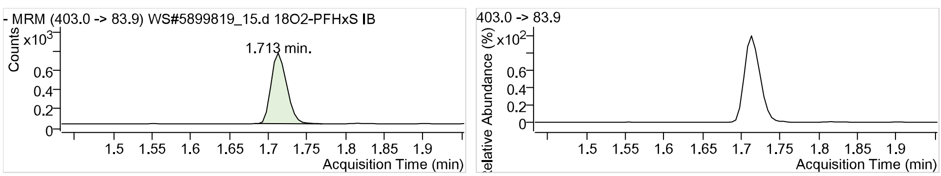
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	0.000 (2.416)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



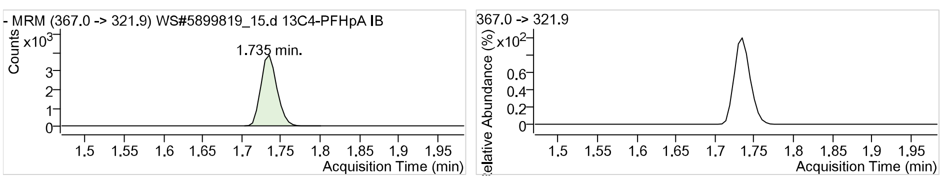
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.481)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



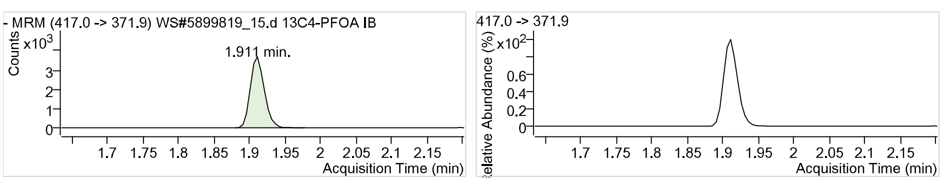
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	98.55 µg/L
Area ratio:	0.22268
Sample type:	Sample



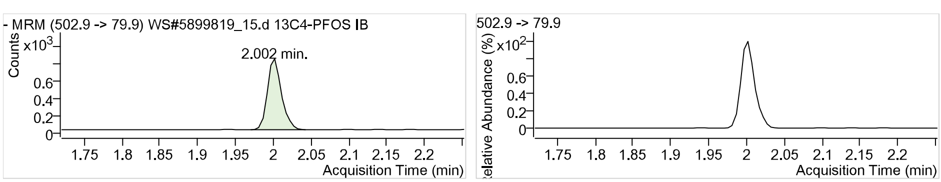
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	105.63 µg/L
Area ratio:	0.06114
Sample type:	Sample



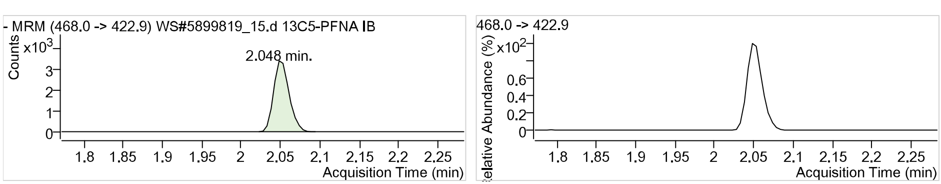
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	100.45 µg/L
Area ratio:	0.32821
Sample type:	Sample



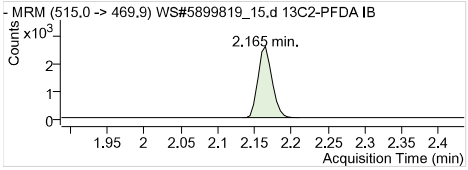
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	97.93 µg/L
Area ratio:	0.29932
Sample type:	Sample

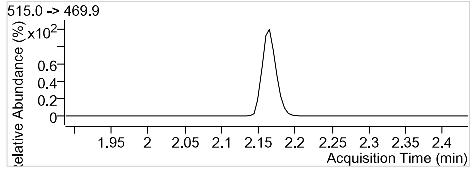


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	99.28 µg/L
Area ratio:	0.06337
Sample type:	Sample

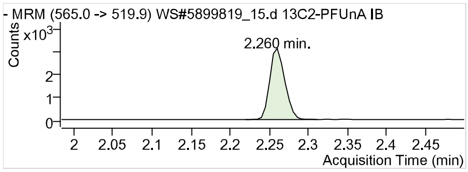


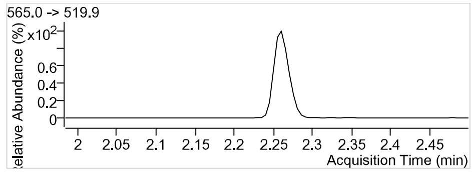
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.048 (2.053)
Calc. conc.	95.13 µg/L
Area ratio:	0.27683
Sample type:	Sample



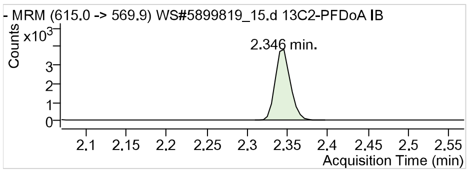


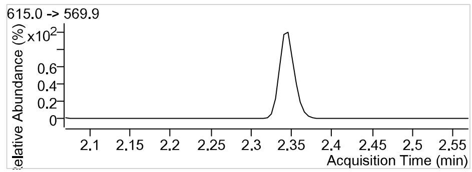
13C2-PFDA 515.0 -> 469.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 101.77 µg/L
Area ratio: 0.17408
Sample type: Sample



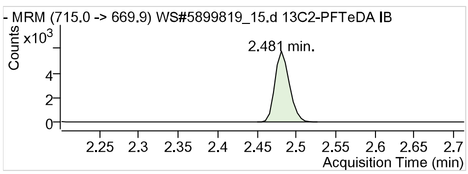


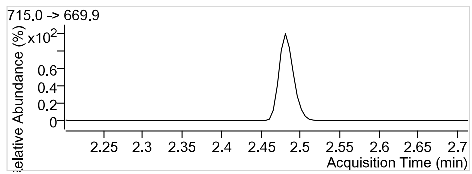
13C2-PFUnA 565.0 -> 519.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 106.45 µg/L
Area ratio: 0.21252
Sample type: Sample



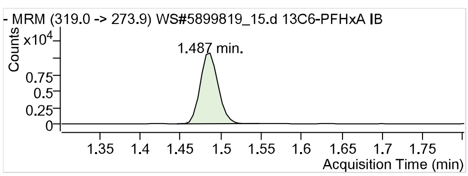


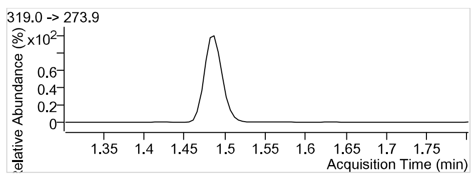
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 98.92 µg/L
Area ratio: 0.25367
Sample type: Sample



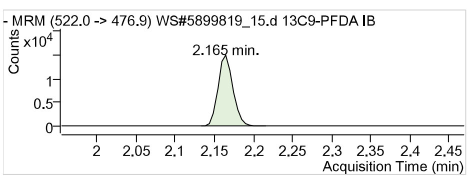


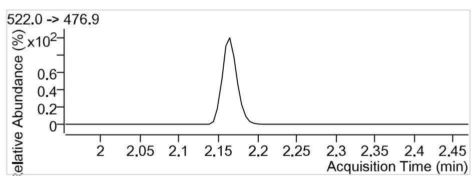
13C2-PFTeDA 715.0 -> 669.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 98.97 µg/L
Area ratio: 0.37003
Sample type: Sample





13C6-PFHxA 319.0 -> 273.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 2.37 µg/L
Area ratio: 0
Sample type: Sample





13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 2.36 µg/L
Area ratio: 0
Sample type: Sample

Quantitation Results

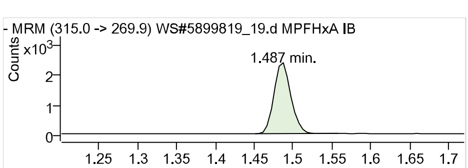
Agilent Technologies

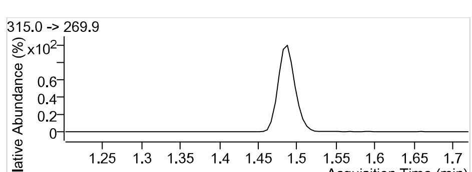
Batch Path T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5899819_19.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-A8
Acq. Date	2018/12/21 6:03:04 PM	**Injection Volume**	Per Method
Sample Annotation	-		

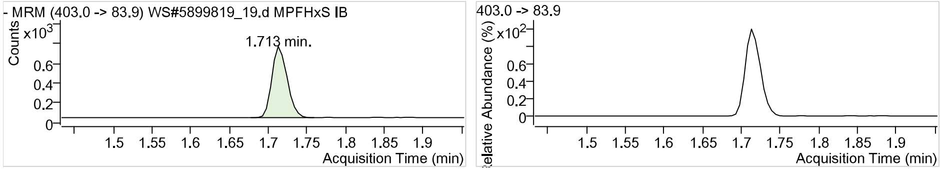
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3590	1.49	1 µg/L		
MPFHxS	974	1.71	1 µg/L		
MPFHpA	5459	1.73	1 µg/L		
MPFOA	5203	1.91	1 µg/L		
MPFOS	1039	2.00	1 µg/L		
MPFNA	4783	2.05	1 µg/L		
MPFDA	3200	2.16	1 µg/L		
MPFUnA	3817	2.26	1 µg/L		
MPFDoA	4905	2.35	1 µg/L		
MPFTeDA	7130	2.48	1 µg/L		
13C6-PFHxA IS	15989	1.49	1 µg/L		
13C9-PFDA IS	19175	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3590	1.49	-	99.36 µg/L	-
18O2-PFHxS	974	1.71	-	105.24 µg/L	-
13C4-PFHpA	5459	1.73	-	104.50 µg/L	-
13C4-PFOA	5203	1.91	-	106.47 µg/L	-
13C4-PFOS	1039	2.00	-	101.80 µg/L	-
13C5-PFNA	4783	2.05	-	102.79 µg/L	-
13C2-PFDA	3200	2.16	-	97.56 µg/L	-
13C2-PFUnA	3817	2.26	-	99.70 µg/L	-
13C2-PFDoA	4905	2.35	-	99.75 µg/L	-
13C2-PFTeDA	7130	2.48	-	99.45 µg/L	-
13C6-PFHxA	15989	1.49	-	2.28 µg/L	-
13C9-PFDA	19175	2.16	-	2.31 µg/L	-

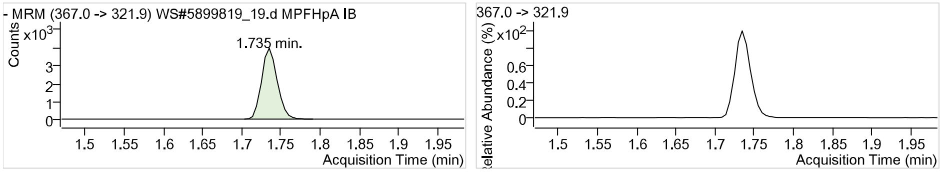




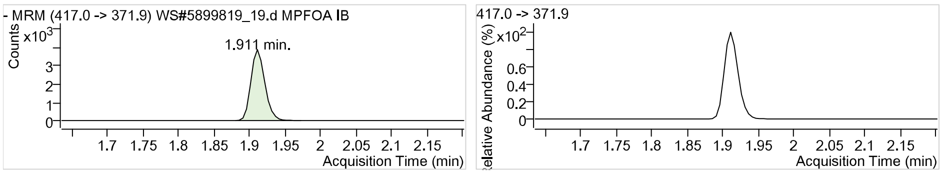
MPFHxA	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



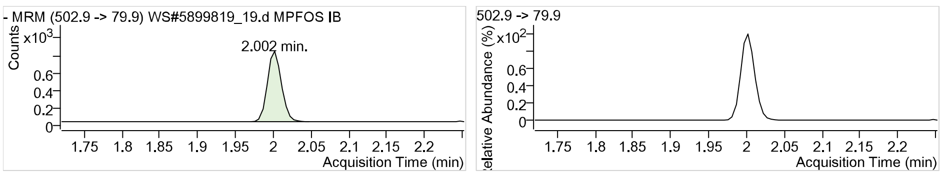
MPFHxS	Internal Standard
RT (Exp. RT):	1.713 (1.713)
Concentration:	1 µg/L
Sample type:	Sample



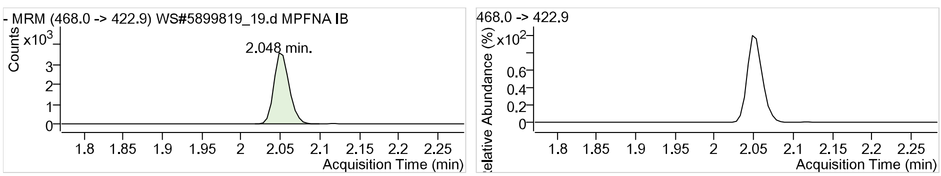
MPFHpA	Internal Standard
RT (Exp. RT):	1.735 (1.735)
Concentration:	1 µg/L
Sample type:	Sample



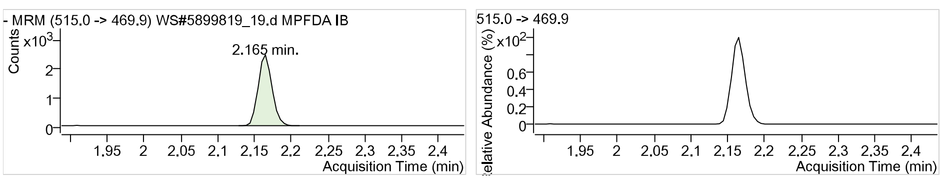
MPFOA	Internal Standard
RT (Exp. RT):	1.911 (1.911)
Concentration:	1 µg/L
Sample type:	Sample



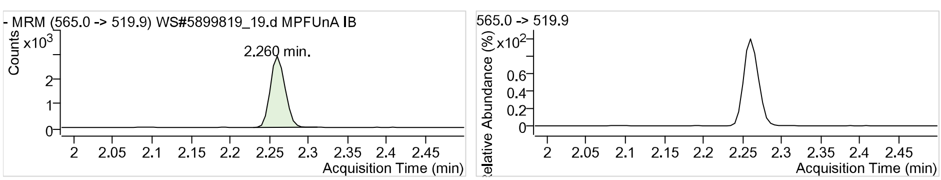
MPFOS	Internal Standard
RT (Exp. RT):	2.002 (2.002)
Concentration:	1 µg/L
Sample type:	Sample



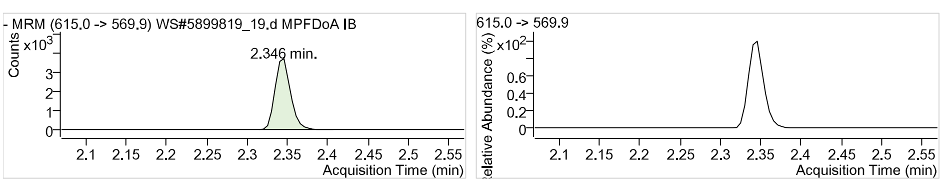
MPFNA	Internal Standard
RT (Exp. RT):	2.048 (2.053)
Concentration:	1 µg/L
Sample type:	Sample



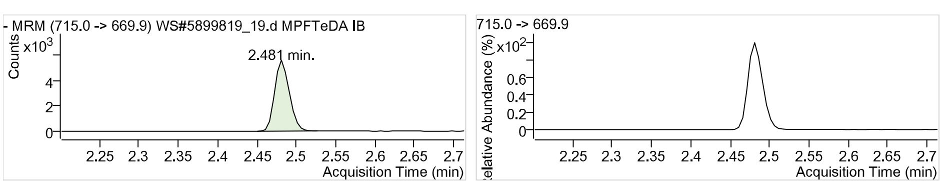
MPFDA	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



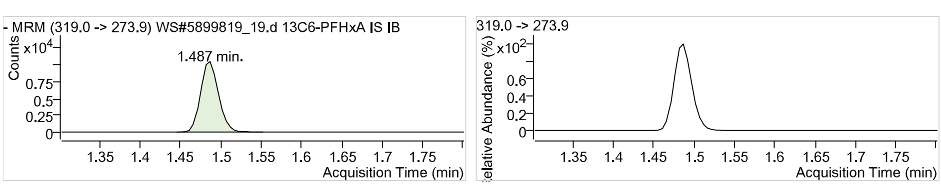
MPFUnA	Internal Standard
RT (Exp. RT):	2.260 (2.260)
Concentration:	1 µg/L
Sample type:	Sample



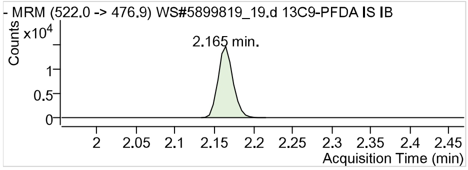
MPFDoA	Internal Standard
RT (Exp. RT):	2.346 (2.346)
Concentration:	1 µg/L
Sample type:	Sample

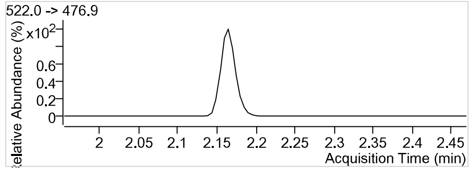


MPFTeDA	Internal Standard
RT (Exp. RT):	2.481 (2.481)
Concentration:	1 µg/L
Sample type:	Sample

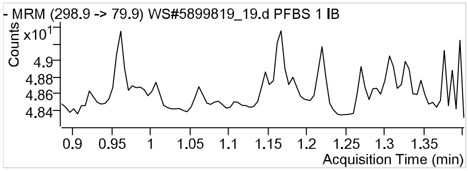


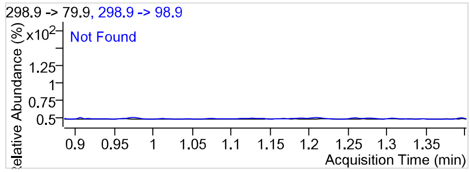
13C6-PFHxA IS	Internal Standard
RT (Exp. RT):	1.487 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



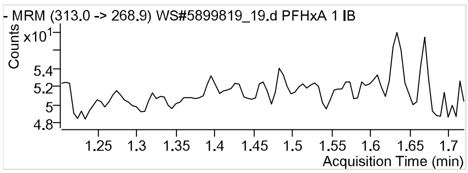


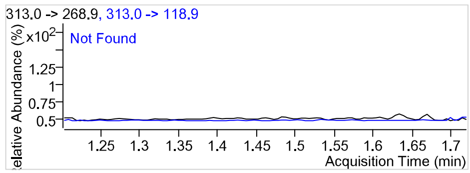
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



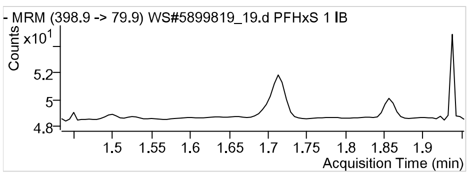


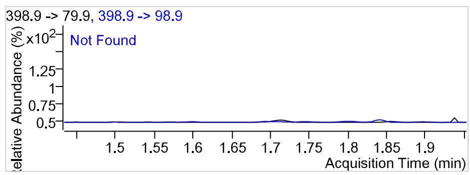
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.162)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



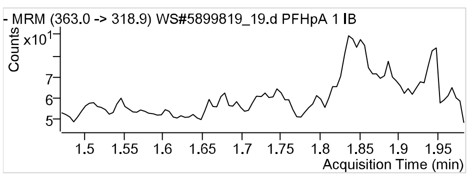


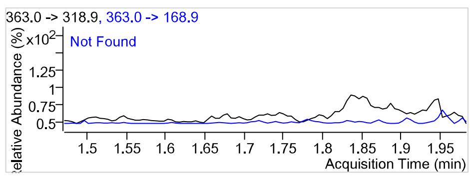
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.488)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



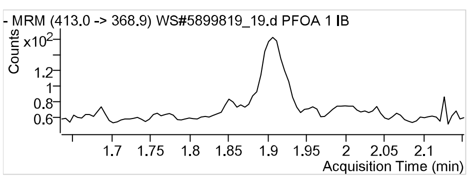


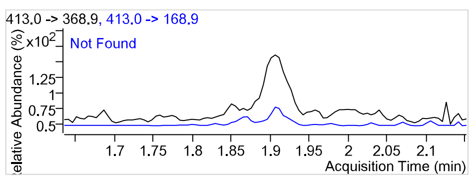
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.713)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



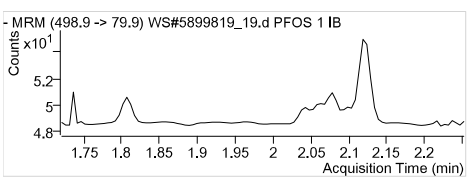


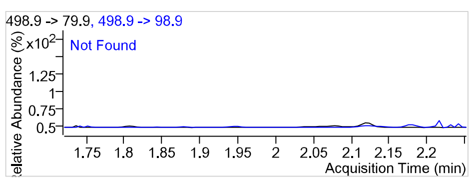
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.735)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



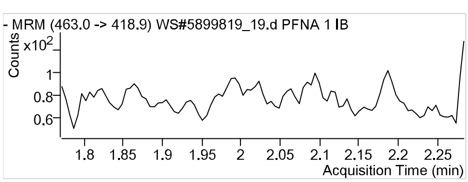


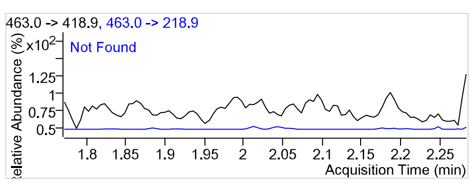
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.912)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



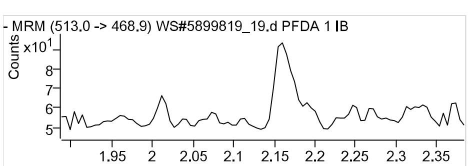


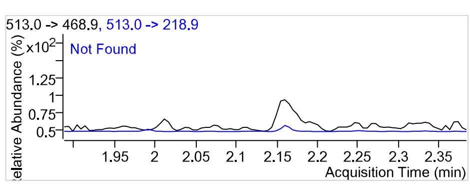
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 0.000 (2.002)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



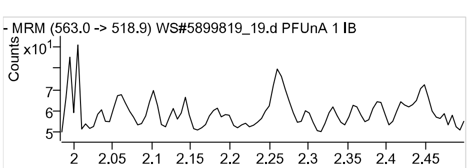


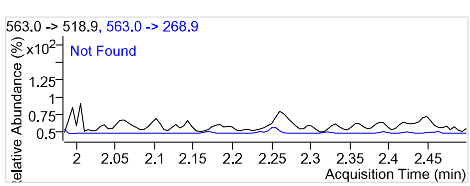
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.053)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



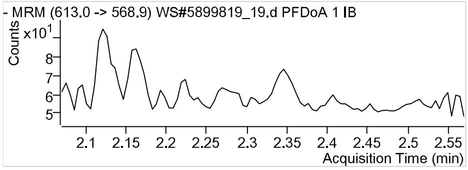


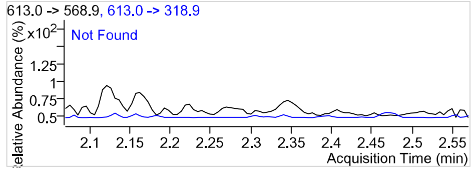
PFDA 1 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.165)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



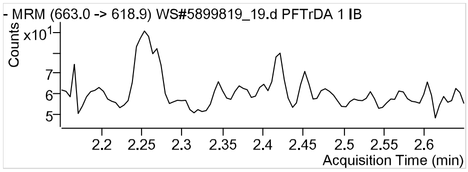


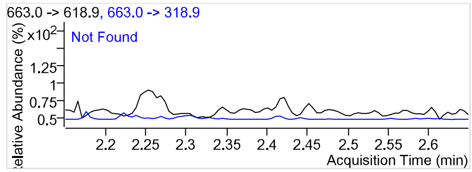
PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.260)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



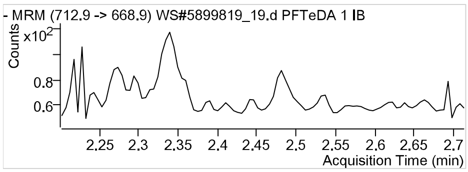


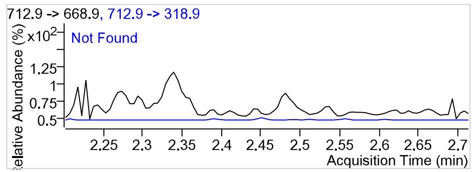
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.346)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



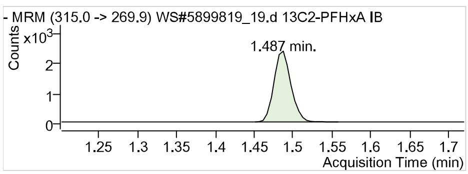


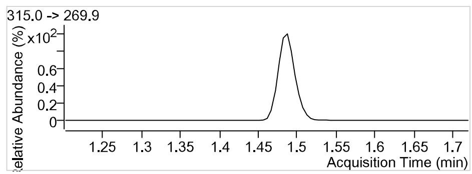
PFTrDA 1 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.416)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



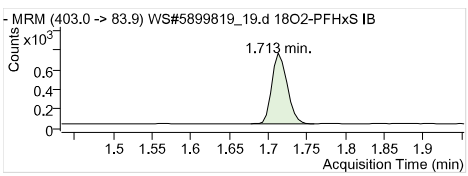


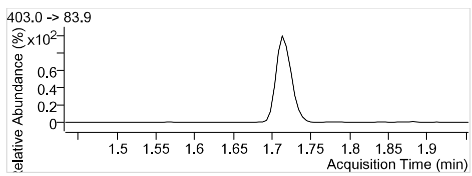
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.481)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



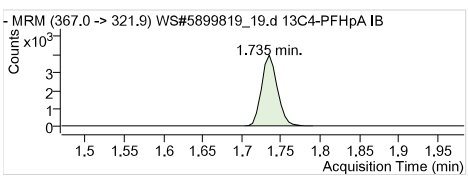


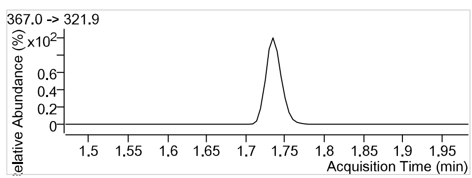
13C2-PFHxA 315.0 -> 269.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 99.36 µg/L
Area ratio: 0.22453
Sample type: Sample



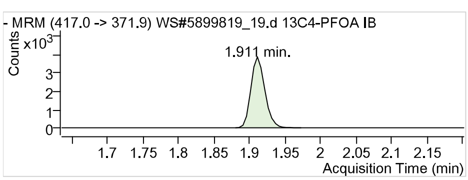


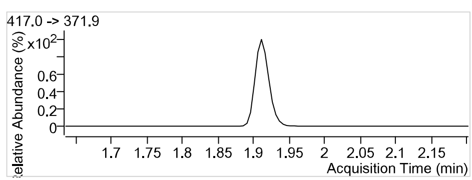
18O2-PFHxS 403.0 -> 83.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 105.24 µg/L
Area ratio: 0.06092
Sample type: Sample



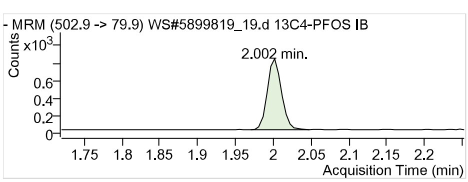


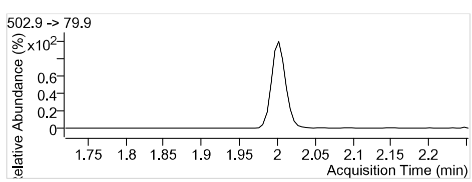
13C4-PFHpA 367.0 -> 321.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 104.50 µg/L
Area ratio: 0.34142
Sample type: Sample



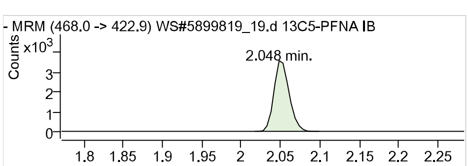


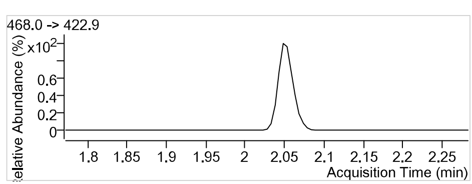
13C4-PFOA 417.0 -> 371.9
RT (Exp. RT): 1.911 (1.911)
Calc. conc. 106.47 µg/L
Area ratio: 0.32541
Sample type: Sample



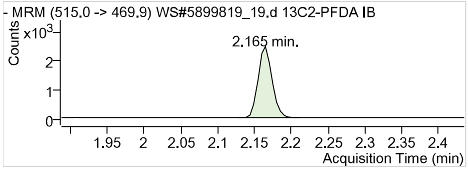


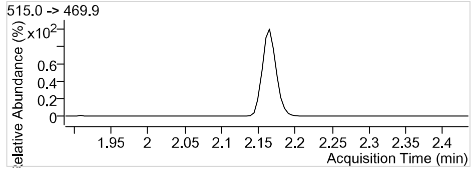
13C4-PFOS 502.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 101.80 µg/L
Area ratio: 0.06498
Sample type: Sample



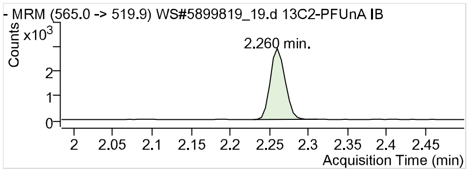


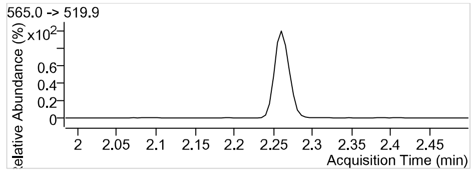
13C5-PFNA 468.0 -> 422.9
RT (Exp. RT): 2.048 (2.053)
Calc. conc. 102.79 µg/L
Area ratio: 0.29914
Sample type: Sample



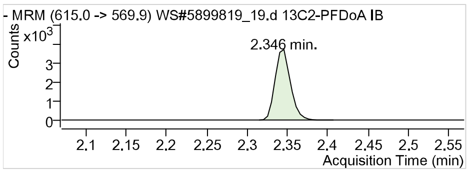


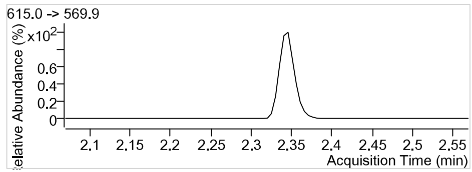
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	97.56 µg/L
Area ratio:	0.16688
Sample type:	Sample



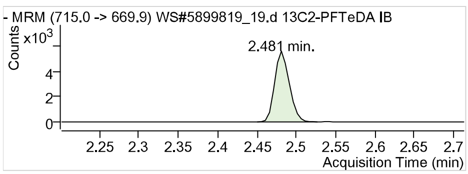


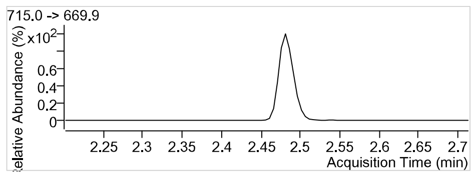
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	99.70 µg/L
Area ratio:	0.19906
Sample type:	Sample



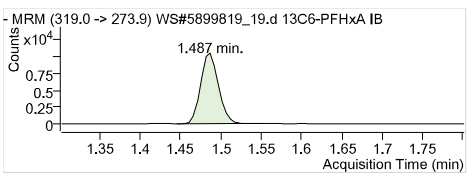


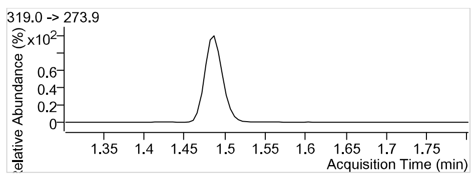
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	99.75 µg/L
Area ratio:	0.25580
Sample type:	Sample



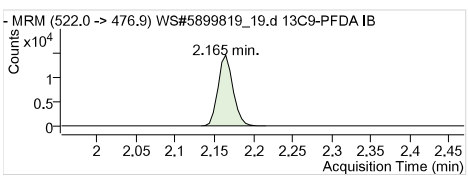


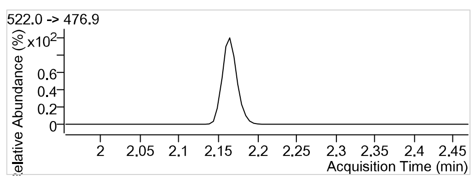
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	99.45 µg/L
Area ratio:	0.37184
Sample type:	Sample





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.28 µg/L
Area ratio:	0
Sample type:	Sample





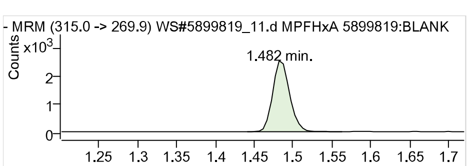
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.31 µg/L
Area ratio:	0
Sample type:	Sample

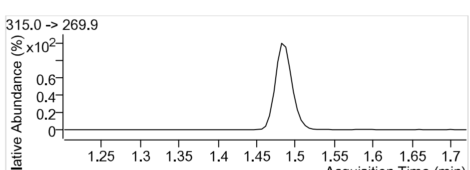
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

Sample Name	**5899819:BLANK**	**Instrument**	LCMS04
Data File	WS#5899819_11.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-B1
Acq. Date	2018/12/21 5:23:44 PM	**Injection Volume**	Per Method
Sample Annotation	-		

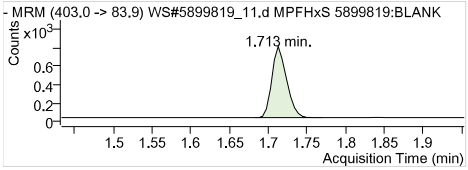
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3751	1.48	1 µg/L		
MPFHxS	992	1.71	1 µg/L		
MPFHpA	5550	1.73	1 µg/L		
MPFOA	5089	1.91	1 µg/L		
MPFOS	1127	2.00	1 µg/L		
MPFNA	4785	2.05	1 µg/L		
MPFDA	3241	2.16	1 µg/L		
MPFUnA	3770	2.26	1 µg/L		
MPFDoA	4609	2.35	1 µg/L		
MPFTeDA	6222	2.48	1 µg/L		
13C6-PFHxA IS	16997	1.48	1 µg/L		
13C9-PFDA IS	20590	2.16	1 µg/L		

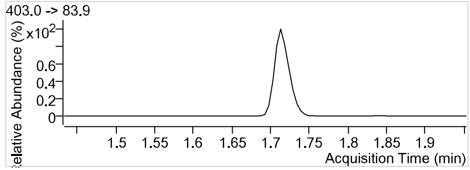
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1			-	ND	-
PFHxA 1			-	ND	-
PFHxS 1			-	ND	-
PFHpA 1			-	ND	-
PFOA 1			-	ND	-
PFOS 1			-	ND	-
PFNA 1			-	ND	-
PFDA 1			-	ND	-
PFUnA 1			-	ND	-
PFDoA 1			-	ND	-
PFTrDA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFHxA	3751	1.48	-	97.66 µg/L	-
18O2-PFHxS	992	1.71	-	100.83 µg/L	-
13C4-PFHpA	5550	1.73	-	99.94 µg/L	-
13C4-PFOA	5089	1.91	-	97.96 µg/L	-
13C4-PFOS	1127	2.00	-	103.87 µg/L	-
13C5-PFNA	4785	2.05	-	96.74 µg/L	-
13C2-PFDA	3241	2.16	-	92.02 µg/L	-
13C2-PFUnA	3770	2.26	-	91.71 µg/L	-
13C2-PFDoA	4609	2.35	-	87.29 µg/L	-
13C2-PFTeDA	6222	2.48	-	80.82 µg/L	-
13C6-PFHxA	16997	1.48	-	2.43 µg/L	-
13C9-PFDA	20590	2.16	-	2.48 µg/L	-



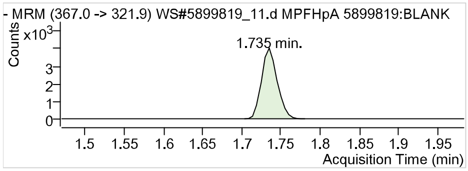


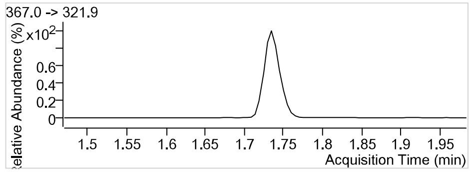
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	Sample



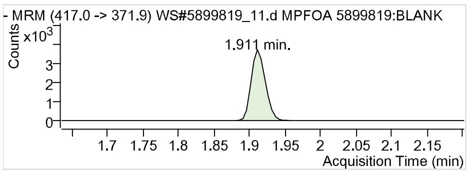


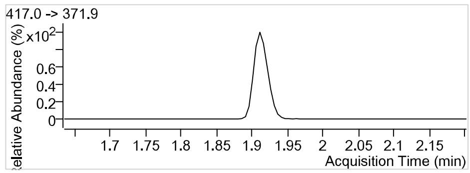
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: Sample



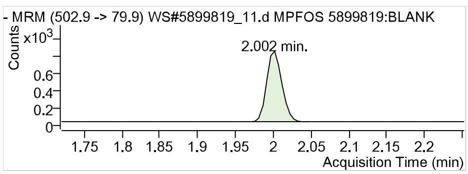


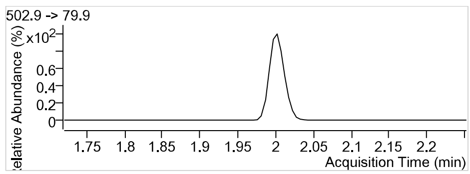
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: Sample



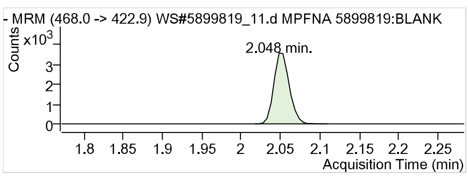


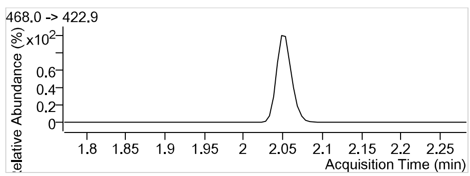
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: Sample



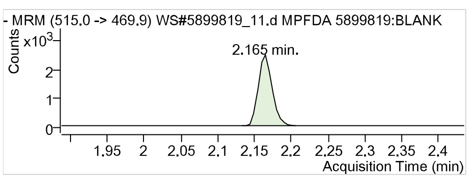


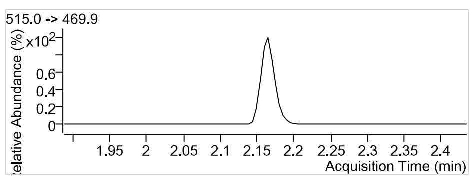
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: Sample



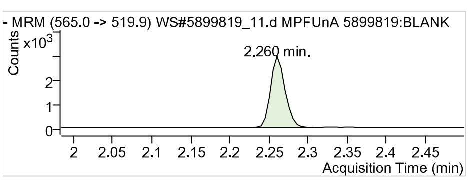


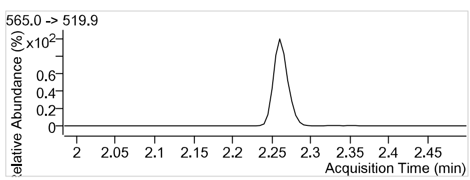
MPFNA Internal Standard
RT (Exp. RT): 2.048 (2.053)
Concentration: 1 µg/L
Sample type: Sample



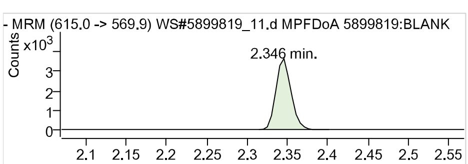


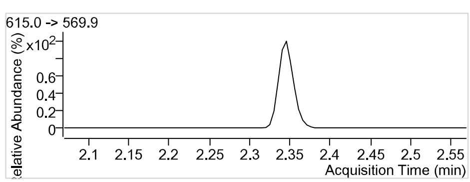
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: Sample



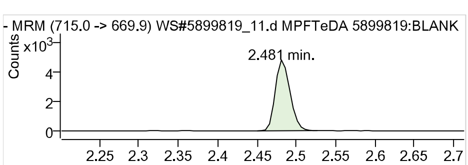


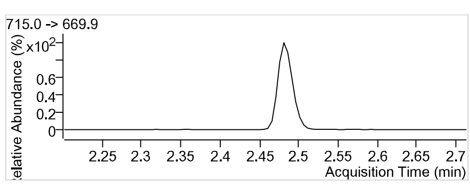
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: Sample



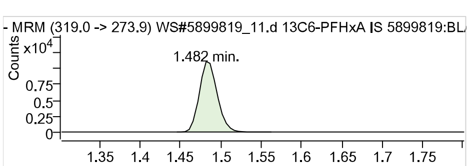


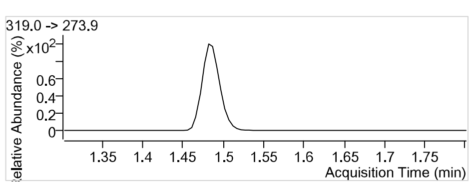
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: Sample



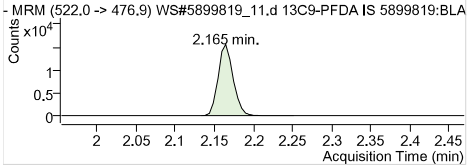


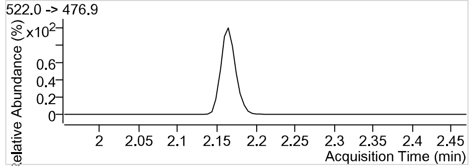
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: Sample



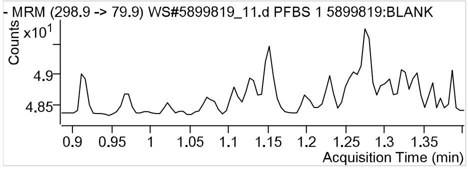


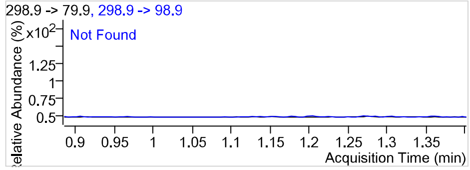
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.482 (1.487)
Concentration: 1 µg/L
Sample type: Sample



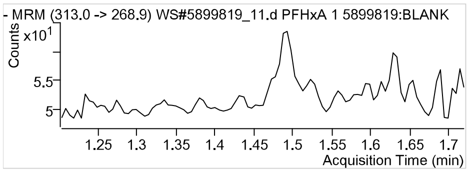


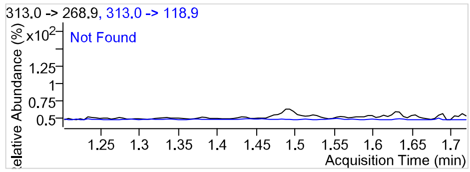
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	Sample



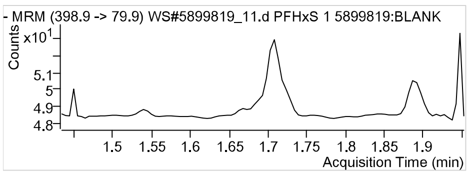


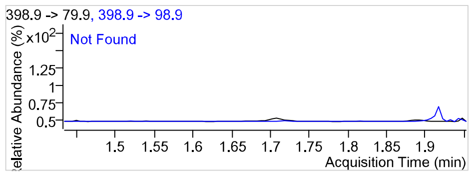
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	0.000 (1.162)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



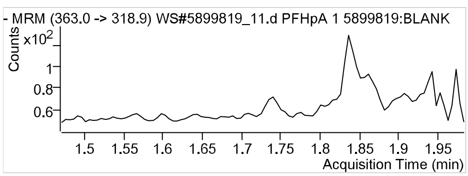


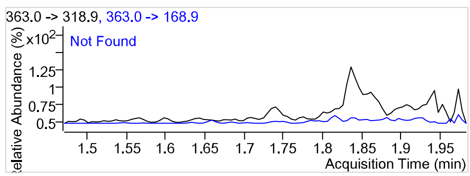
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	0.000 (1.488)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



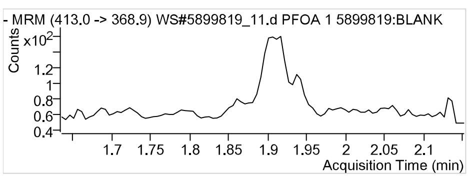


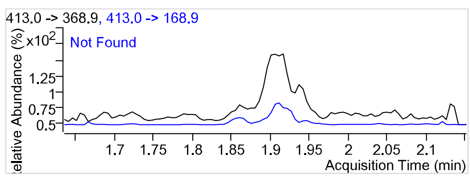
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	0.000 (1.713)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



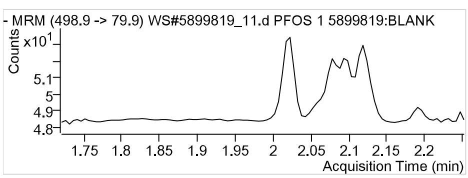


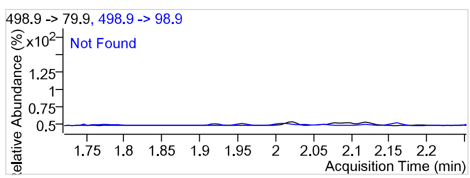
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	0.000 (1.735)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



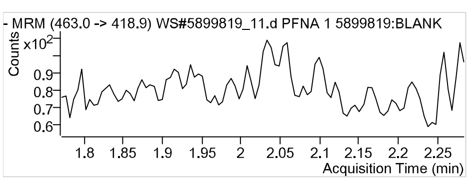


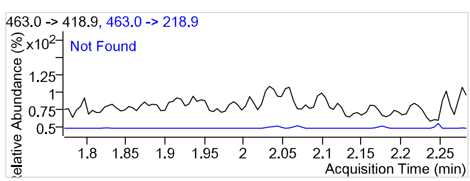
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	0.000 (1.912)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



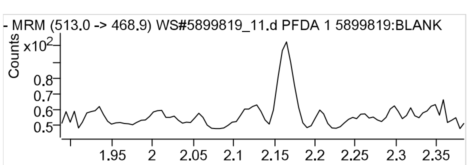


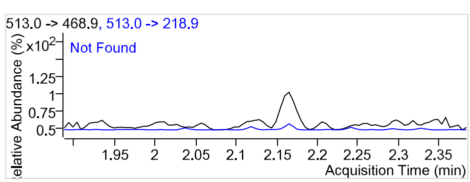
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	0.000 (2.002)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



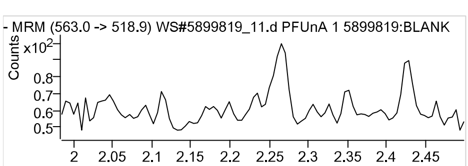


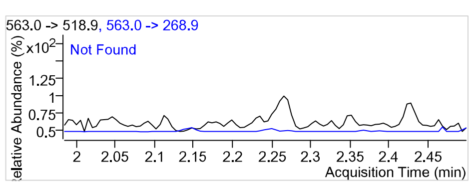
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	0.000 (2.053)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



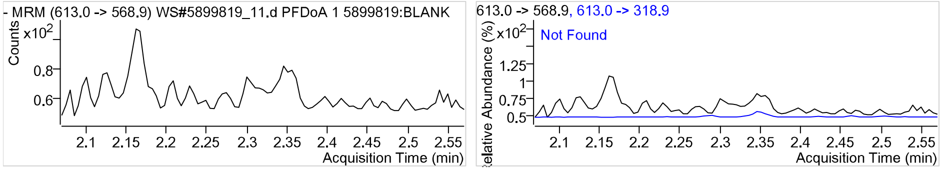


PFDA 1	513.0 -> 468.9
RT (Exp. RT):	0.000 (2.165)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

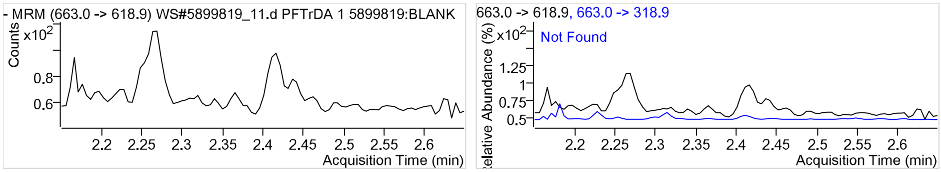




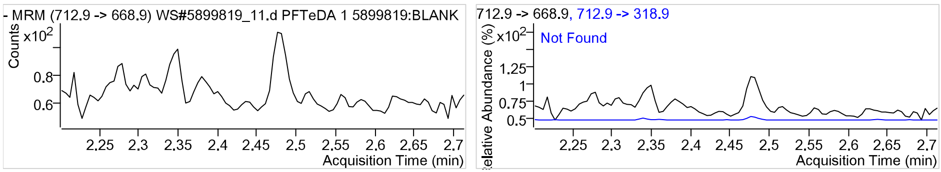
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	0.000 (2.260)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



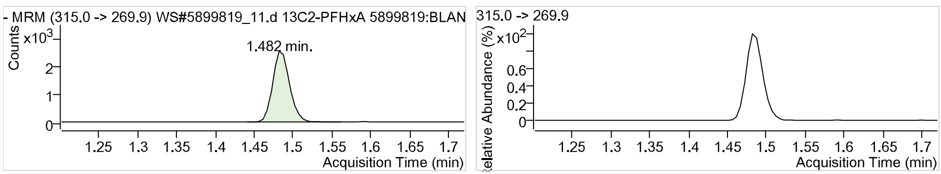
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	0.000 (2.346)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



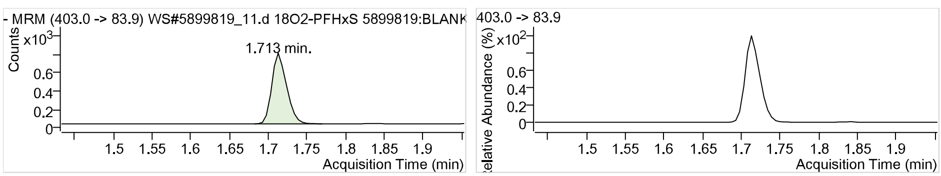
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	0.000 (2.416)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



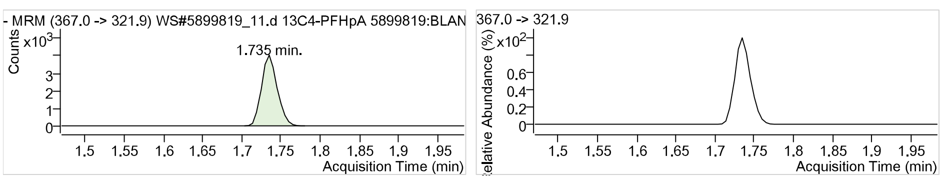
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	0.000 (2.481)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



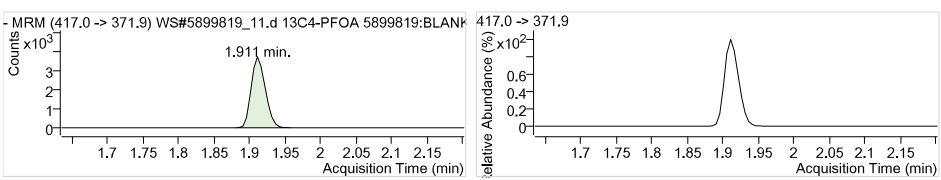
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.482 (1.487)
Calc. conc.	97.66 µg/L
Area ratio:	0.22069
Sample type:	Sample



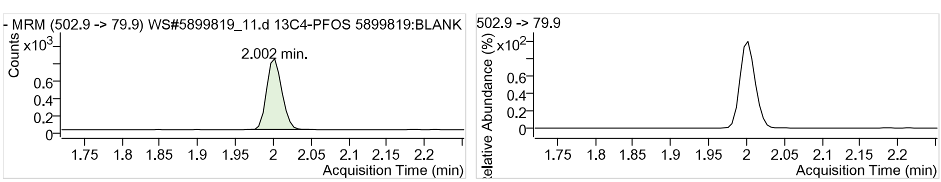
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	100.83 µg/L
Area ratio:	0.05836
Sample type:	Sample



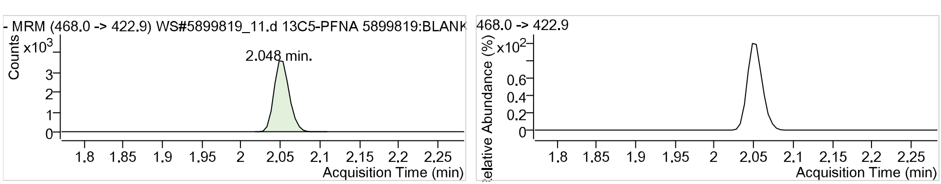
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	99.94 µg/L
Area ratio:	0.32653
Sample type:	Sample



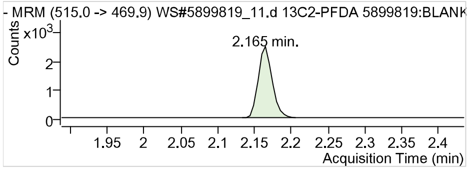
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	97.96 µg/L
Area ratio:	0.29941
Sample type:	Sample

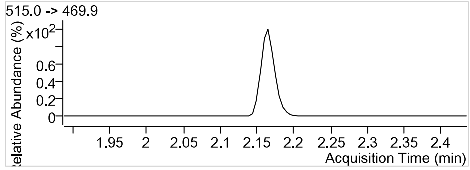


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	103.87 µg/L
Area ratio:	0.06631
Sample type:	Sample

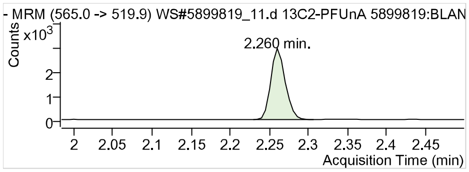


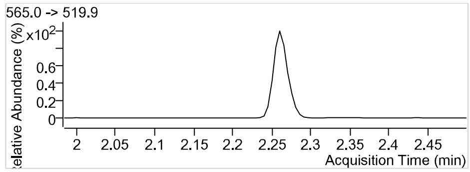
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.048 (2.053)
Calc. conc.	96.74 µg/L
Area ratio:	0.28152
Sample type:	Sample



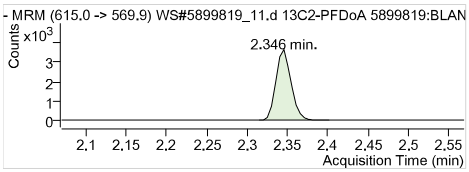


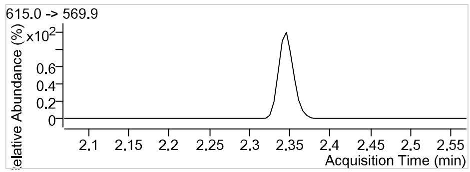
13C2-PFDA 515.0 -> 469.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 92.02 µg/L
Area ratio: 0.15741
Sample type: Sample



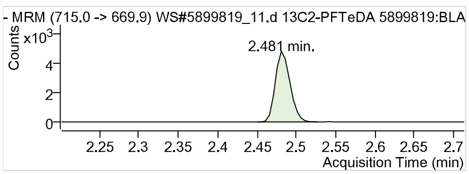


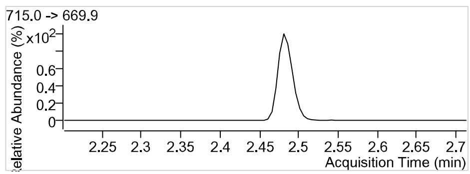
13C2-PFUnA 565.0 -> 519.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 91.71 µg/L
Area ratio: 0.18310
Sample type: Sample



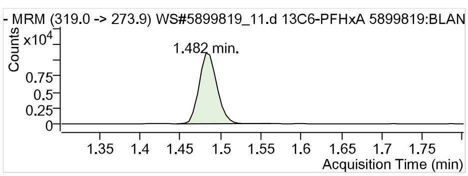


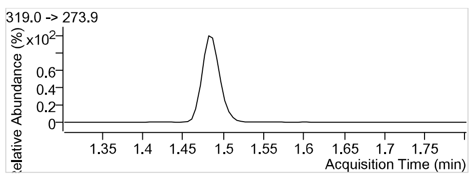
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 87.29 µg/L
Area ratio: 0.22385
Sample type: Sample



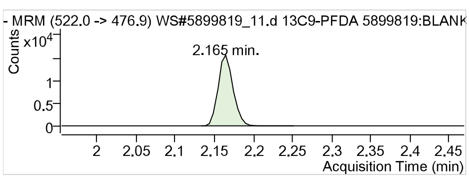


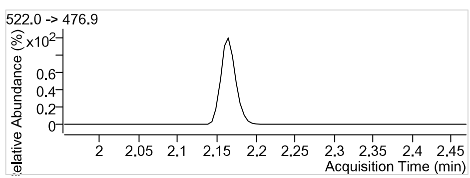
13C2-PFTeDA 715.0 -> 669.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 80.82 µg/L
Area ratio: 0.30219
Sample type: Sample





13C6-PFHxA 319.0 -> 273.9
RT (Exp. RT): 1.482 (1.487)
Calc. conc. 2.43 µg/L
Area ratio: 0
Sample type: Sample





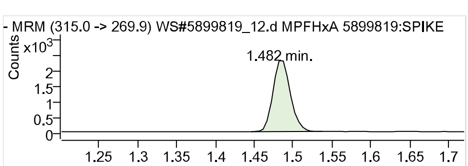
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 2.48 µg/L
Area ratio: 0
Sample type: Sample

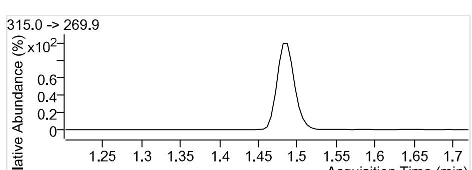
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

Sample Name	**5899819:SPIKE**	**Instrument**	LCMS04
Data File	WS#5899819_12.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-B2
Acq. Date	2018/12/21 5:28:39 PM	**Injection Volume**	Per Method
Sample Annotation	-		

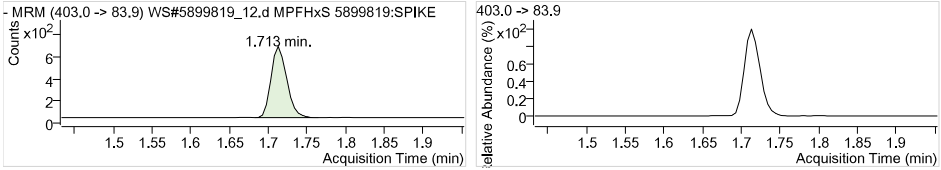
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3530	1.48	1 µg/L		
MPFHxS	891	1.71	1 µg/L		
MPFHpA	5032	1.73	1 µg/L		
MPFOA	4829	1.91	1 µg/L		
MPFOS	1076	2.00	1 µg/L		
MPFNA	4462	2.05	1 µg/L		
MPFDA	3133	2.16	1 µg/L		
MPFUnA	3618	2.26	1 µg/L		
MPFDoA	4330	2.35	1 µg/L		
MPFTeDA	6061	2.48	1 µg/L		
13C6-PFHxA IS	16640	1.49	1 µg/L		
13C9-PFDA IS	19567	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	11745	1.14	20.80	0.52 µg/L	105.03
PFHxA 1	33599	1.48	20.80	0.51 µg/L	101.71
PFHxS 1	8819	1.71	20.80	0.51 µg/L	102.33
PFHpA 1	47224	1.74	20.80	0.52 µg/L	103.29
PFOA 1	45606	1.91	20.80	0.52 µg/L	103.49
PFOS 1	9077	2.00	20.80	0.49 µg/L	97.91
PFNA 1	34737	2.05	20.80	0.51 µg/L	102.95
PFDA 1	39180	2.17	20.80	0.51 µg/L	101.69
PFUnA 1	36562	2.26	20.80	0.52 µg/L	103.38
PFDoA 1	38680	2.35	20.80	0.52 µg/L	103.45
PFTrDA 1	46214	2.42	20.80	0.53 µg/L	105.27
PFTeDA 1	46605	2.48	20.80	0.51 µg/L	101.37
13C2-PFHxA	3530	1.48	100.00	93.88 µg/L	93.88
18O2-PFHxS	891	1.71	100.00	92.51 µg/L	92.51
13C4-PFHpA	5032	1.73	100.00	92.55 µg/L	92.55
13C4-PFOA	4829	1.91	100.00	94.95 µg/L	94.95
13C4-PFOS	1076	2.00	100.00	101.30 µg/L	101.30
13C5-PFNA	4462	2.05	100.00	92.14 µg/L	92.14
13C2-PFDA	3133	2.16	100.00	93.61 µg/L	93.61
13C2-PFUnA	3618	2.26	100.00	92.61 µg/L	92.61
13C2-PFDoA	4330	2.35	100.00	86.29 µg/L	86.29
13C2-PFTeDA	6061	2.48	100.00	82.85 µg/L	82.85
13C6-PFHxA	16640	1.49	100.00	2.38 µg/L	99.07
13C9-PFDA	19567	2.16	100.00	2.36 µg/L	98.31

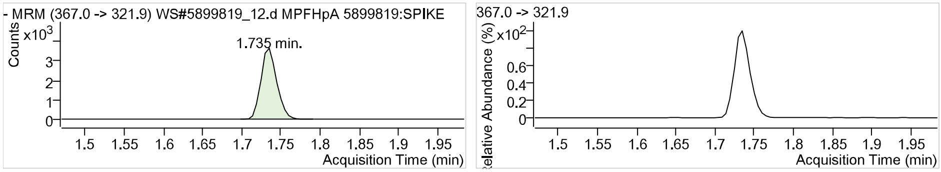




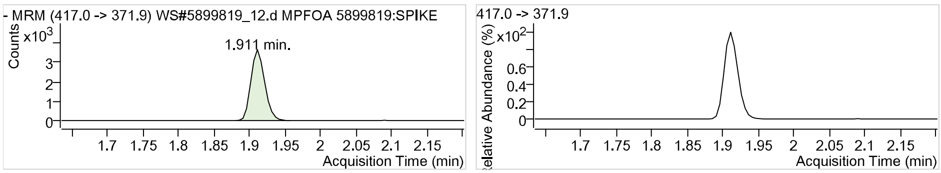
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	QC



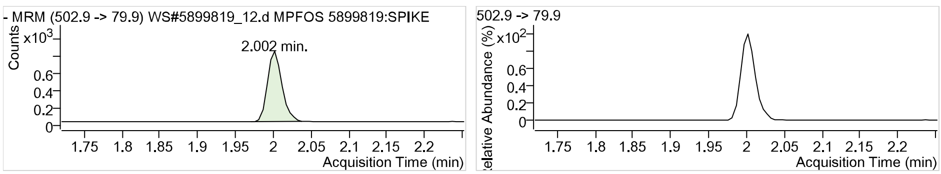
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: QC



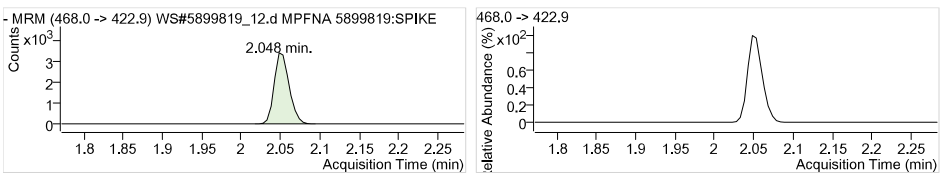
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: QC



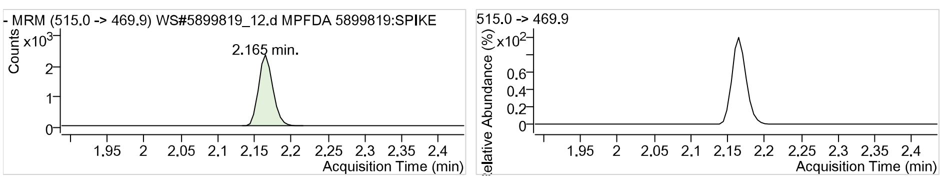
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: QC



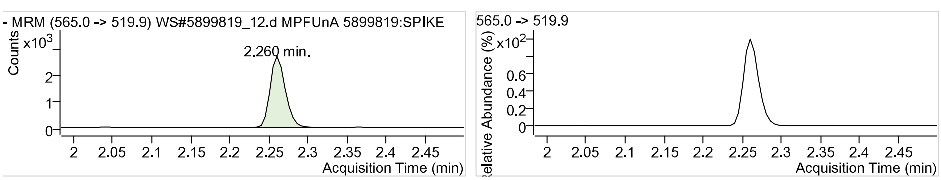
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: QC



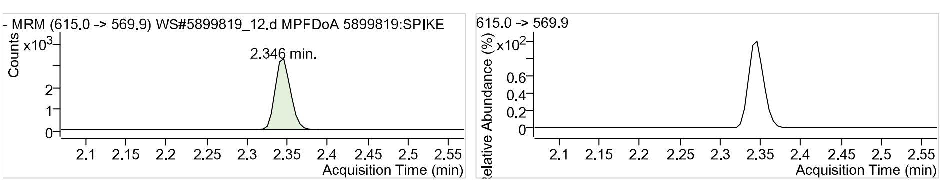
MPFNA Internal Standard
RT (Exp. RT): 2.048 (2.053)
Concentration: 1 µg/L
Sample type: QC



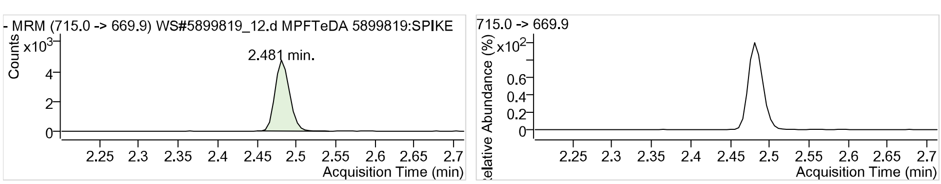
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



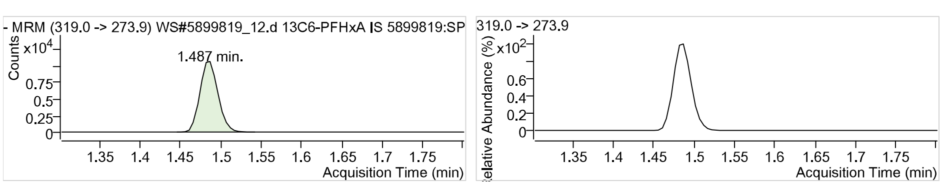
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: QC



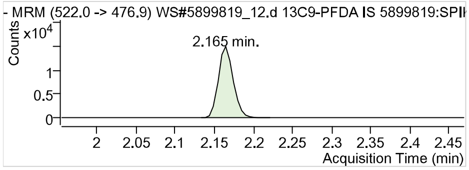
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: QC

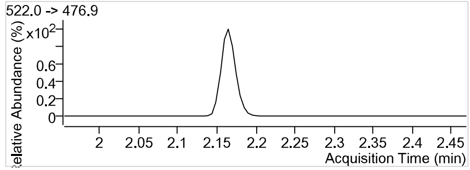


MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: QC

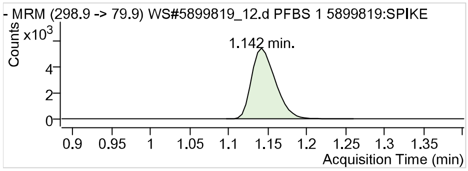


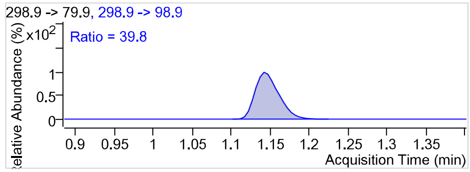
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.487 (1.487)
Concentration: 1 µg/L
Sample type: QC



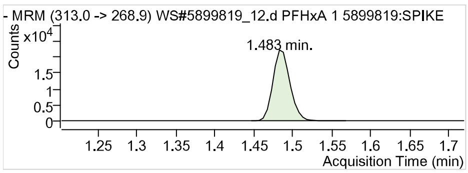


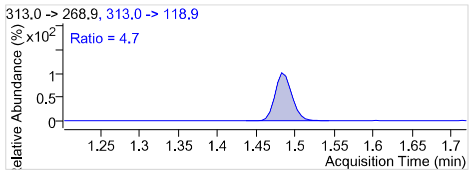
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



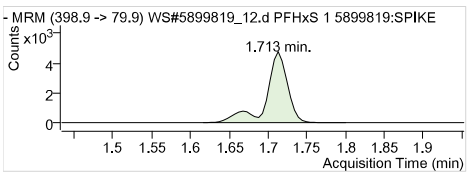


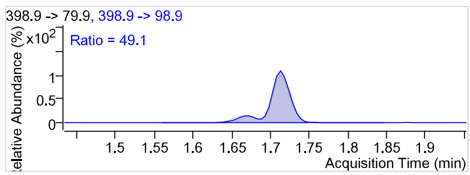
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 1.142 (1.162)
Calc. conc. 0.52 µg/L
Area ratio: 13.18182
Sample type: QC



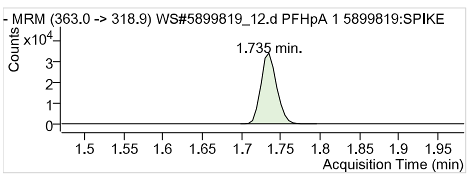


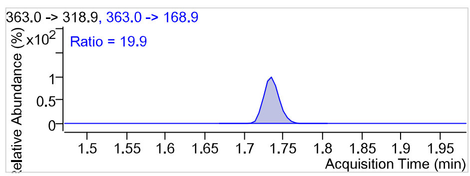
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 1.483 (1.488)
Calc. conc. 0.51 µg/L
Area ratio: 9.51813
Sample type: QC



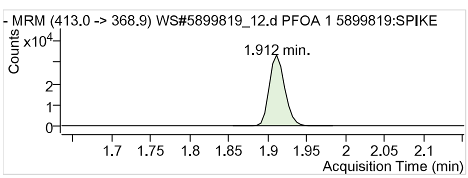


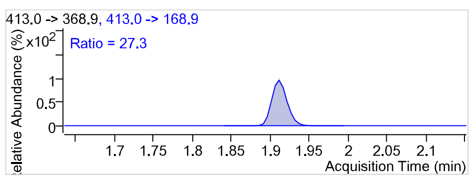
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 0.51 µg/L
Area ratio: 9.89787
Sample type: QC



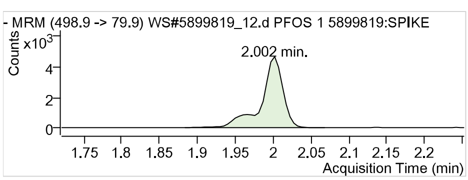


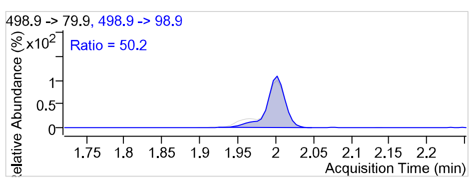
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 0.52 µg/L
Area ratio: 9.38474
Sample type: QC



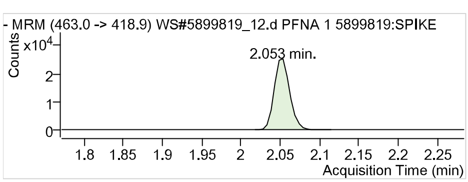


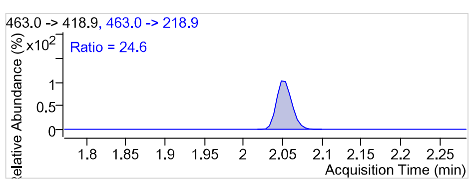
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 1.912 (1.912)
Calc. conc. 0.52 µg/L
Area ratio: 9.44419
Sample type: QC



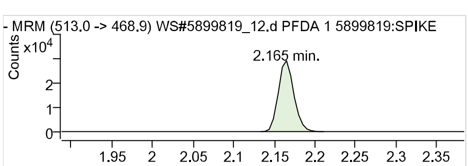


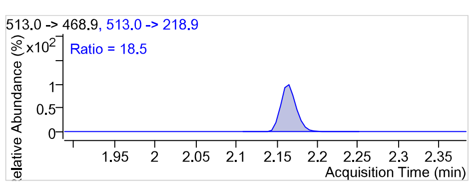
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 0.49 µg/L
Area ratio: 8.43587
Sample type: QC



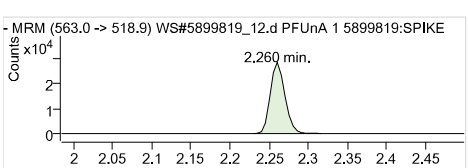


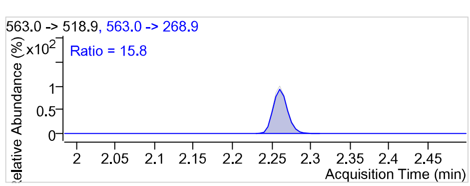
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 2.053 (2.053)
Calc. conc. 0.51 µg/L
Area ratio: 7.78507
Sample type: QC





PFDA 1 513.0 -> 468.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 0.51 µg/L
Area ratio: 12.50559
Sample type: QC





PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 0.52 µg/L
Area ratio: 10.10558
Sample type: QC

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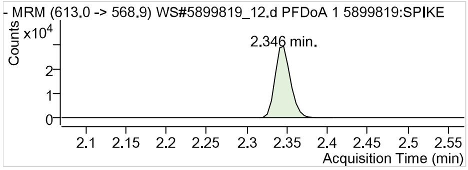
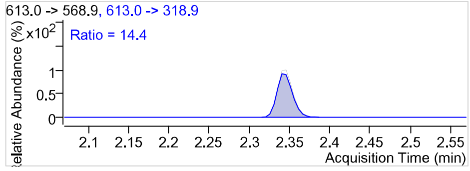
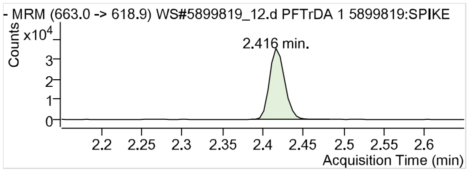
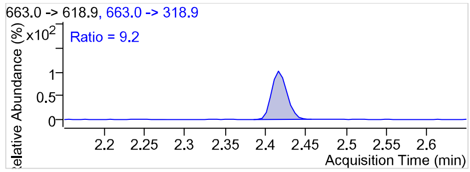


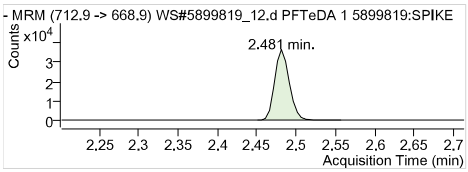


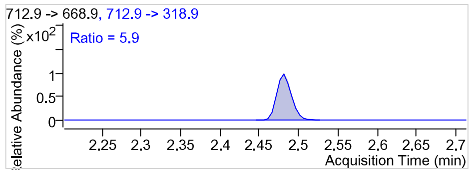
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 0.52 µg/L
Area ratio: 8.93303
Sample type: QC



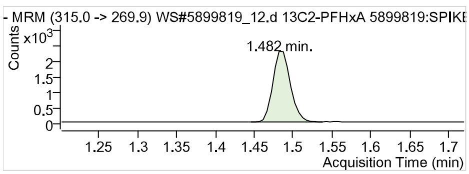


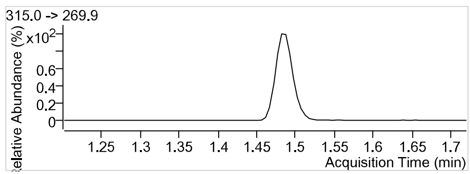
PFTrDA 1 663.0 -> 618.9
RT (Exp. RT): 2.416 (2.416)
Calc. conc. 0.53 µg/L
Area ratio: 7.62481
Sample type: QC



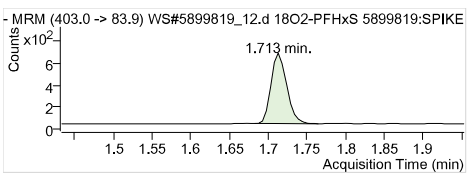


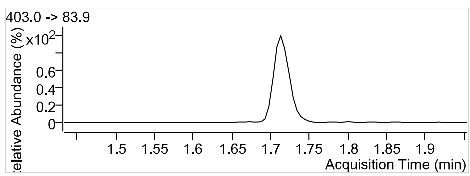
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 0.51 µg/L
Area ratio: 7.68933
Sample type: QC



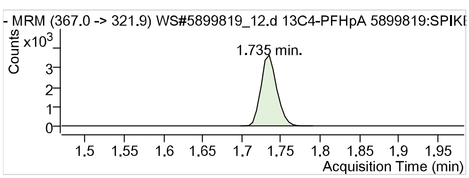


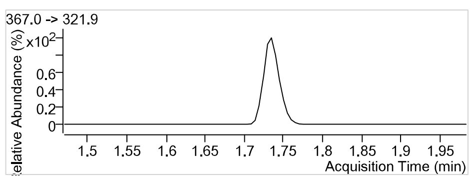
13C2-PFHxA 315.0 -> 269.9
RT (Exp. RT): 1.482 (1.487)
Calc. conc. 93.88 µg/L
Area ratio: 0.21214
Sample type: QC



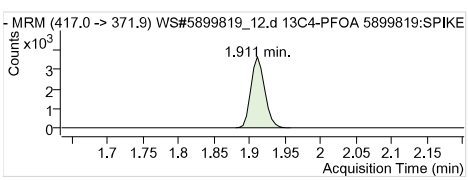


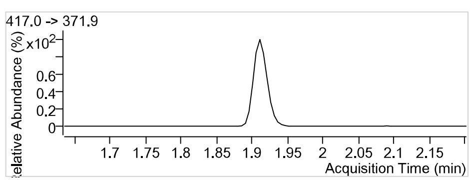
18O2-PFHxS 403.0 -> 83.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 92.51 µg/L
Area ratio: 0.05355
Sample type: QC



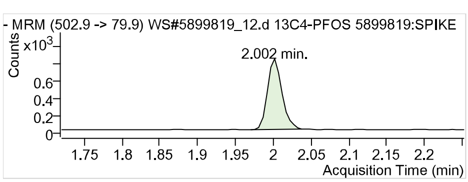


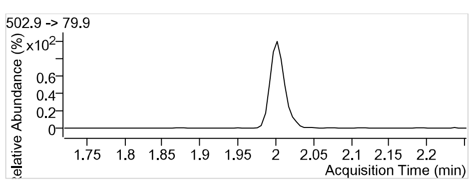
13C4-PFHpA 367.0 -> 321.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 92.55 µg/L
Area ratio: 0.30240
Sample type: QC



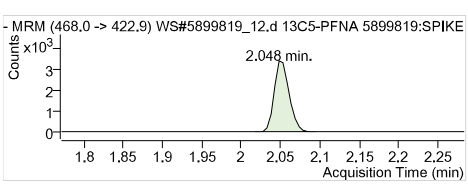


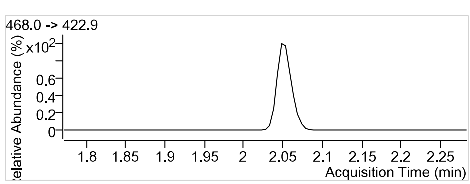
13C4-PFOA 417.0 -> 371.9
RT (Exp. RT): 1.911 (1.911)
Calc. conc. 94.95 µg/L
Area ratio: 0.29020
Sample type: QC



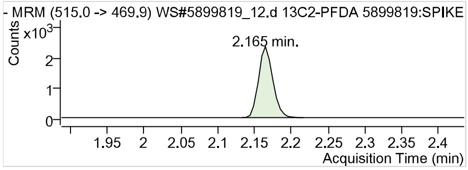


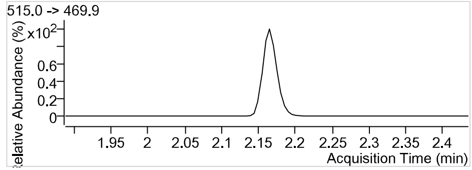
13C4-PFOS 502.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 101.30 µg/L
Area ratio: 0.06466
Sample type: QC



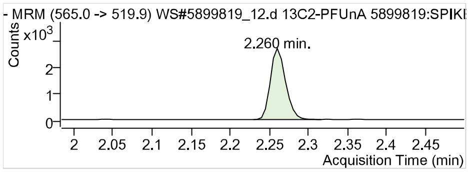


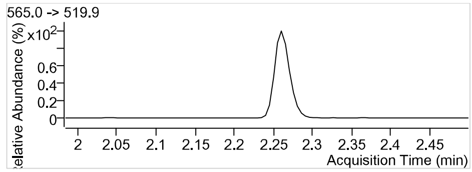
13C5-PFNA 468.0 -> 422.9
RT (Exp. RT): 2.048 (2.053)
Calc. conc. 92.14 µg/L
Area ratio: 0.26815
Sample type: QC



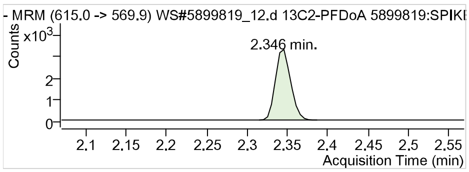


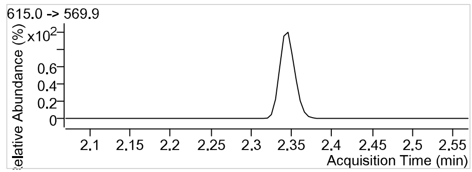
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	93.61 µg/L
Area ratio:	0.16012
Sample type:	QC



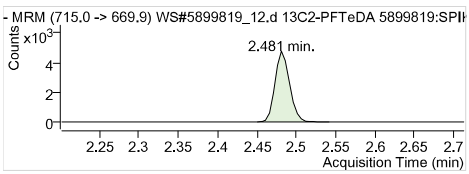


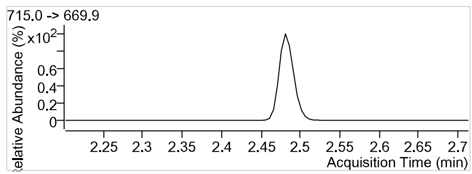
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	92.61 µg/L
Area ratio:	0.18490
Sample type:	QC



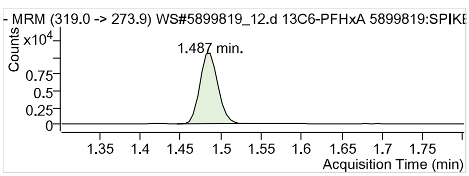


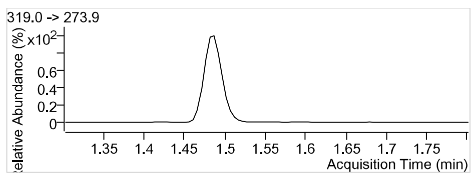
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	86.29 µg/L
Area ratio:	0.22129
Sample type:	QC



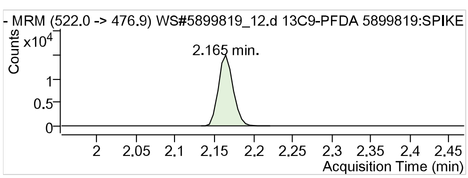


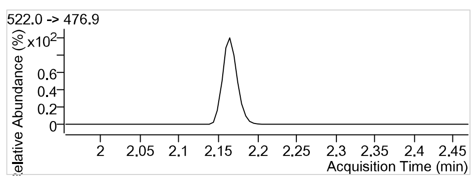
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	82.85 µg/L
Area ratio:	0.30976
Sample type:	QC





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.487 (1.487)
Calc. conc.	2.38 µg/L
Area ratio:	0
Sample type:	QC





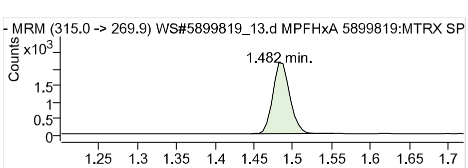
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.36 µg/L
Area ratio:	0
Sample type:	QC

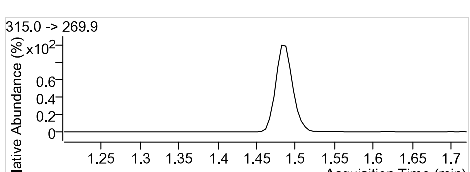
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

Sample Name	**5899819:MTRX SPK**	**Instrument**	LCMS04
Data File	WS#5899819_13.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-B3
Acq. Date	2018/12/21 5:33:34 PM	**Injection Volume**	Per Method
Sample Annotation	IOF247		

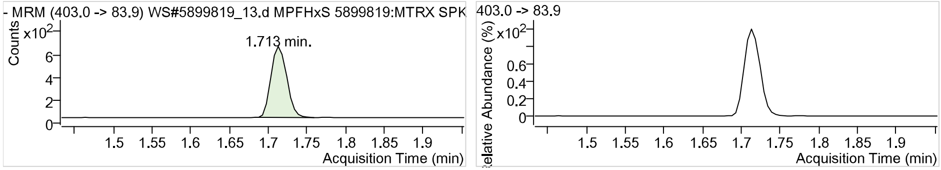
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3265	1.48	1 µg/L		
MPFHxS	870	1.71	1 µg/L		
MPFHpA	4962	1.73	1 µg/L		
MPFOA	4608	1.91	1 µg/L		
MPFOS	944	2.00	1 µg/L		
MPFNA	4202	2.05	1 µg/L		
MPFDA	3144	2.16	1 µg/L		
MPFUnA	3471	2.26	1 µg/L		
MPFDoA	4336	2.35	1 µg/L		
MPFTeDA	5087	2.48	1 µg/L		
13C6-PFHxA IS	16948	1.49	1 µg/L		
13C9-PFDA IS	20477	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	5389	1.14	10.40	0.25 µg/L	98.77
PFHxA 1	15310	1.48	10.40	0.25 µg/L	100.28
PFHxS 1	4055	1.71	10.40	0.24 µg/L	96.59
PFHpA 1	21517	1.74	10.40	0.24 µg/L	95.72
PFOA 1	21329	1.91	10.40	0.25 µg/L	100.84
PFOS 1	4033	2.00	10.40	0.25 µg/L	99.32
PFNA 1	16188	2.05	10.40	0.25 µg/L	101.66
PFDA 1	17956	2.17	10.40	0.23 µg/L	93.05
PFUnA 1	16364	2.26	10.40	0.24 µg/L	96.62
PFDoA 1	18070	2.35	10.40	0.24 µg/L	96.64
PFTrDA 1	20759	2.42	10.40	0.28 µg/L	112.42
PFTeDA 1	19032	2.48	10.40	0.25 µg/L	98.24
13C2-PFHxA	3265	1.48	100.00	85.25 µg/L	85.25
18O2-PFHxS	870	1.71	100.00	88.69 µg/L	88.69
13C4-PFHpA	4962	1.73	100.00	89.61 µg/L	89.61
13C4-PFOA	4608	1.91	100.00	88.95 µg/L	88.95
13C4-PFOS	944	2.00	100.00	87.26 µg/L	87.26
13C5-PFNA	4202	2.05	100.00	85.20 µg/L	85.20
13C2-PFDA	3144	2.16	100.00	89.76 µg/L	89.76
13C2-PFUnA	3471	2.26	100.00	84.90 µg/L	84.90
13C2-PFDoA	4336	2.35	100.00	82.57 µg/L	82.57
13C2-PFTeDA	5087	2.48	100.00	66.44 µg/L	66.44
13C6-PFHxA	16948	1.49	100.00	2.42 µg/L	100.91
13C9-PFDA	20477	2.16	100.00	2.47 µg/L	102.88

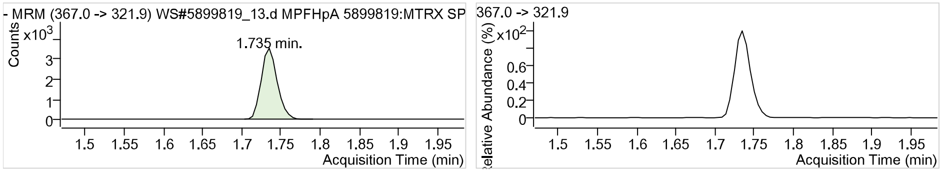




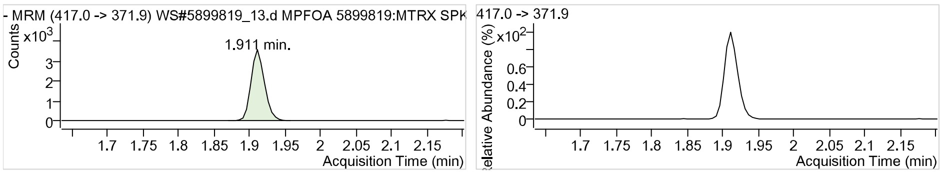
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	QC



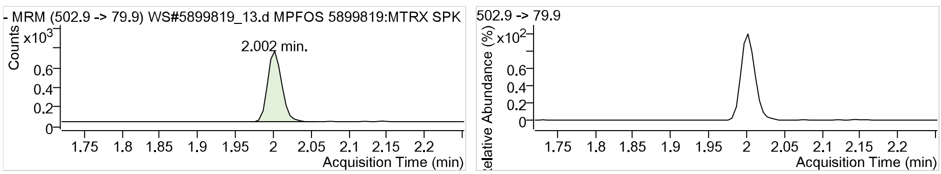
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: QC



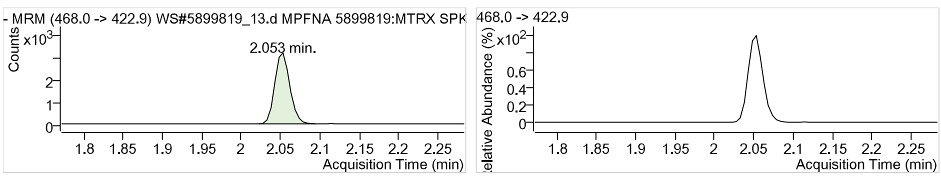
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: QC



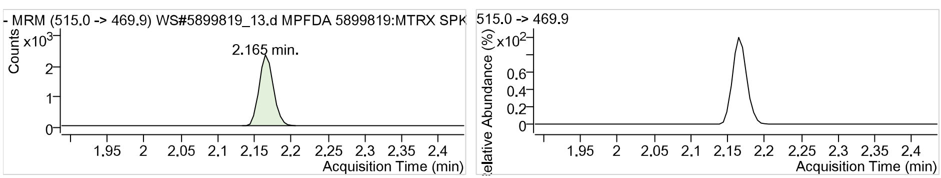
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: QC



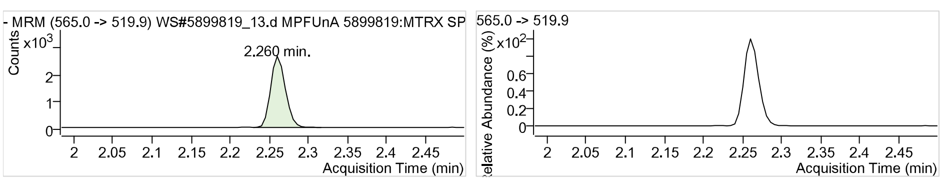
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: QC



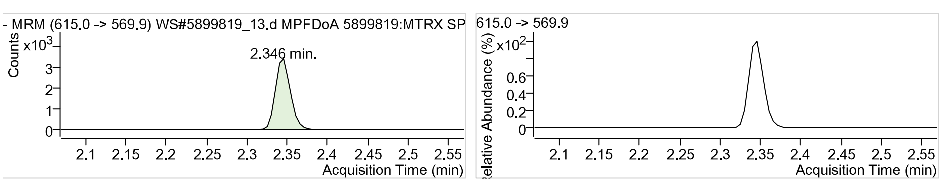
MPFNA Internal Standard
RT (Exp. RT): 2.053 (2.053)
Concentration: 1 µg/L
Sample type: QC



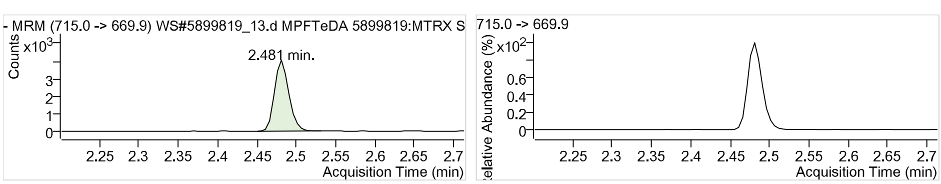
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



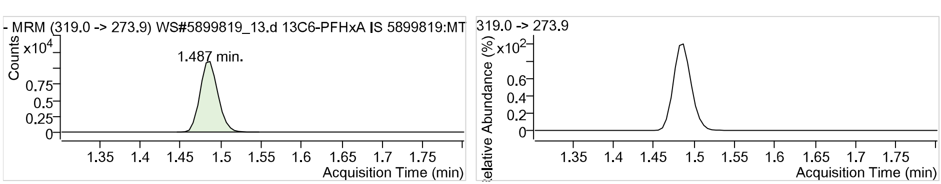
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: QC



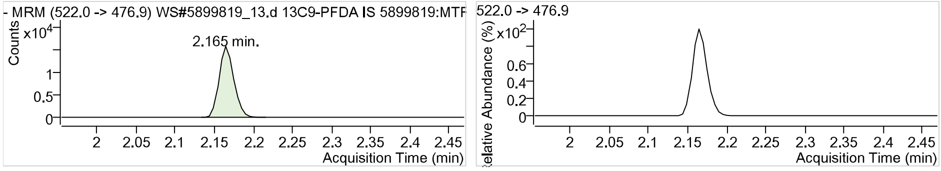
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: QC



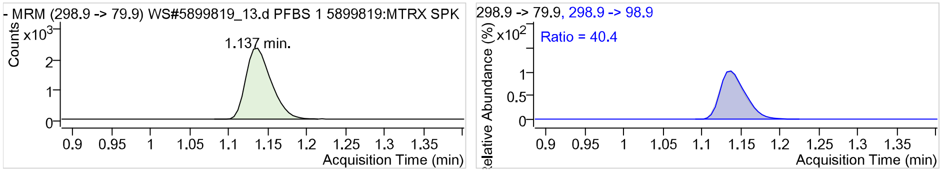
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: QC



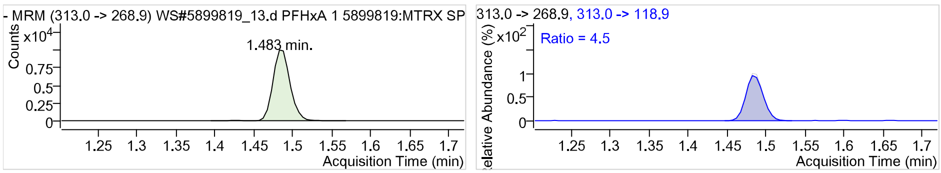
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.487 (1.487)
Concentration: 1 µg/L
Sample type: QC



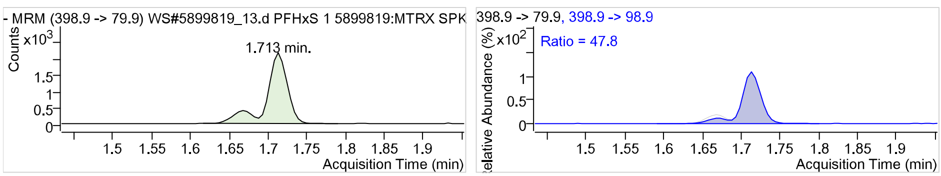
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



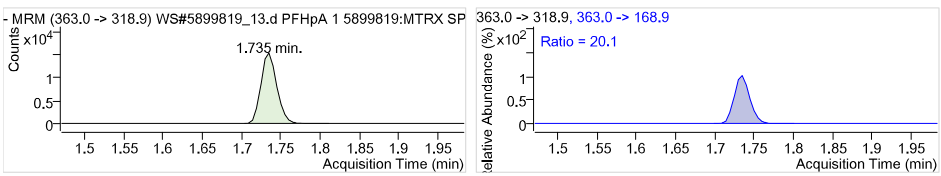
PFBS 1 298.9 -> 79.9
RT (Exp. RT): 1.137 (1.162)
Calc. conc. 0.25 µg/L
Area ratio: 6.19425
Sample type: QC



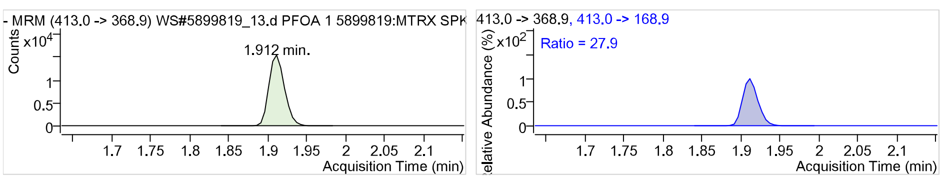
PFHxA 1 313.0 -> 268.9
RT (Exp. RT): 1.483 (1.488)
Calc. conc. 0.25 µg/L
Area ratio: 4.68913
Sample type: QC



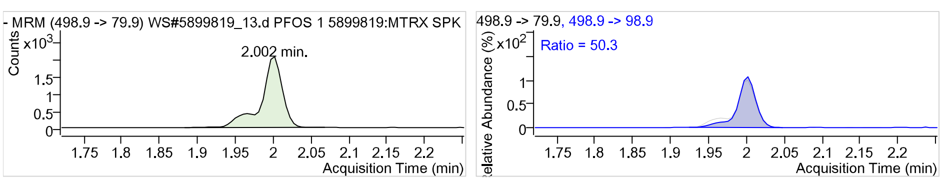
PFHxS 1 398.9 -> 79.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 0.24 µg/L
Area ratio: 4.66092
Sample type: QC



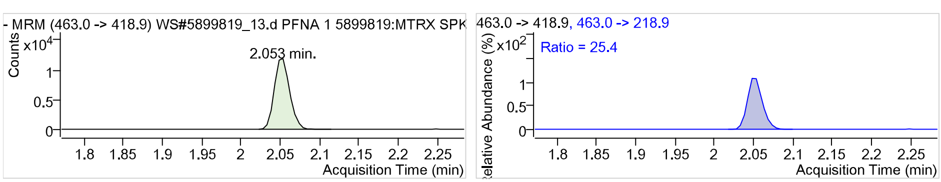
PFHpA 1 363.0 -> 318.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 0.24 µg/L
Area ratio: 4.33636
Sample type: QC



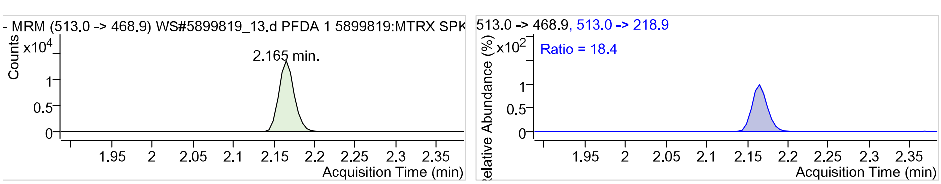
PFOA 1 413.0 -> 368.9
RT (Exp. RT): 1.912 (1.912)
Calc. conc. 0.25 µg/L
Area ratio: 4.62869
Sample type: QC



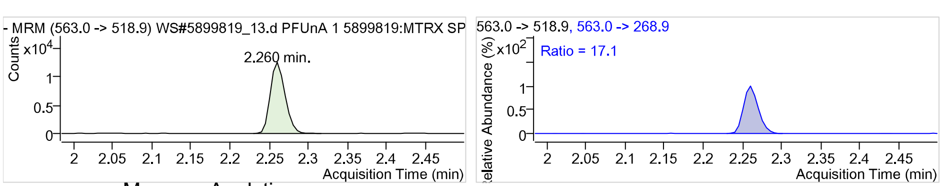
PFOS 1 498.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 0.25 µg/L
Area ratio: 4.27225
Sample type: QC



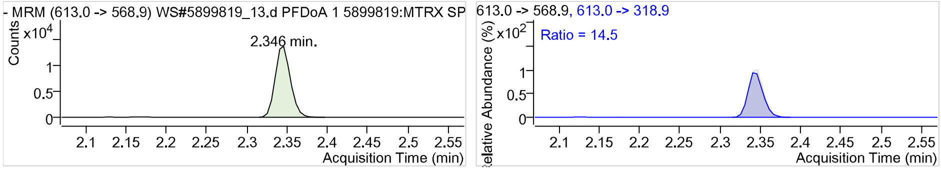
PFNA 1 463.0 -> 418.9
RT (Exp. RT): 2.053 (2.053)
Calc. conc. 0.25 µg/L
Area ratio: 3.85245
Sample type: QC



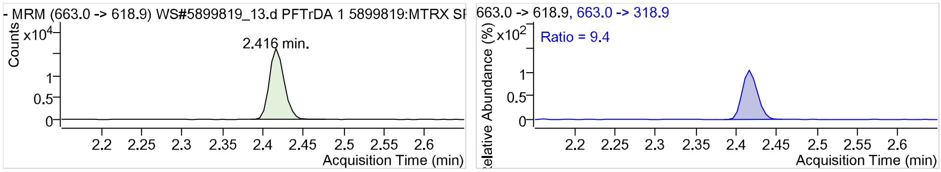
PFDA 1 513.0 -> 468.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 0.23 µg/L
Area ratio: 5.71120
Sample type: QC



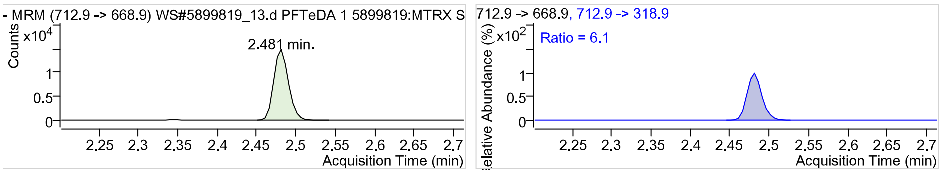
PFUnA 1 563.0 -> 518.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 0.24 µg/L
Area ratio: 4.71449
Sample type: QC



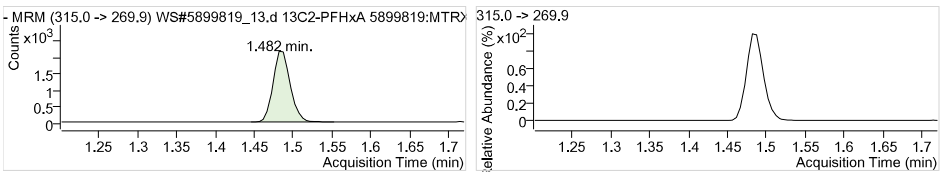
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 0.24 µg/L
Area ratio: 4.16744
Sample type: QC



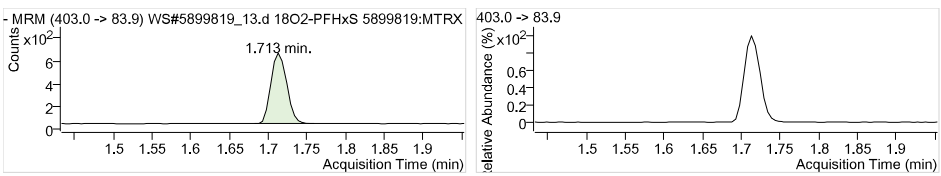
PFTrDA 1 663.0 -> 618.9
RT (Exp. RT): 2.416 (2.416)
Calc. conc. 0.28 µg/L
Area ratio: 4.08079
Sample type: QC



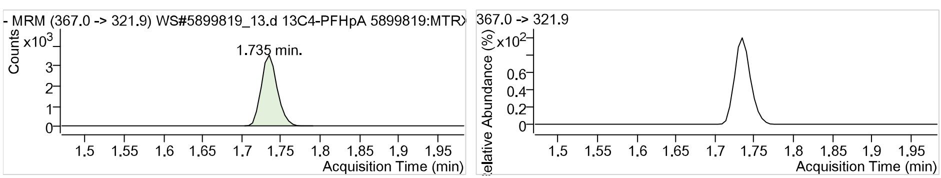
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 0.25 µg/L
Area ratio: 3.74130
Sample type: QC



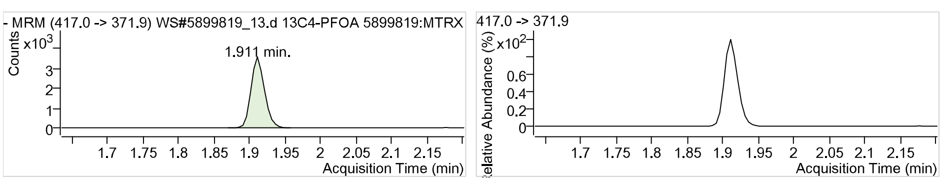
13C2-PFHxA 315.0 -> 269.9
RT (Exp. RT): 1.482 (1.487)
Calc. conc. 85.25 µg/L
Area ratio: 0.19265
Sample type: QC



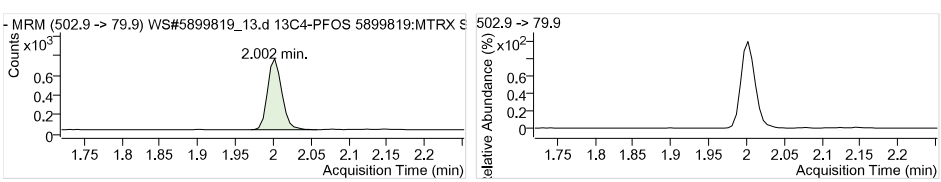
18O2-PFHxS 403.0 -> 83.9
RT (Exp. RT): 1.713 (1.713)
Calc. conc. 88.69 µg/L
Area ratio: 0.05133
Sample type: QC



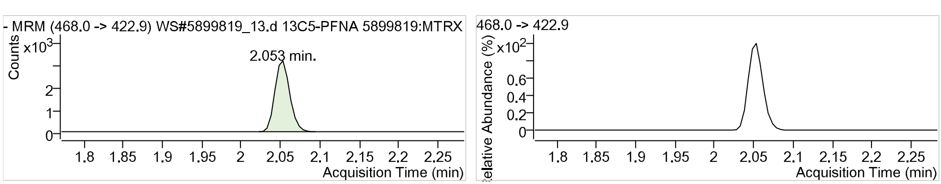
13C4-PFHpA 367.0 -> 321.9
RT (Exp. RT): 1.735 (1.735)
Calc. conc. 89.61 µg/L
Area ratio: 0.29278
Sample type: QC



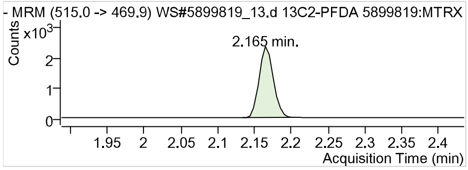
13C4-PFOA 417.0 -> 371.9
RT (Exp. RT): 1.911 (1.911)
Calc. conc. 88.95 µg/L
Area ratio: 0.27189
Sample type: QC

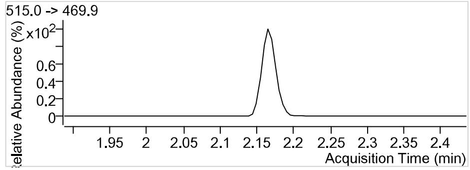


13C4-PFOS 502.9 -> 79.9
RT (Exp. RT): 2.002 (2.002)
Calc. conc. 87.26 µg/L
Area ratio: 0.05570
Sample type: QC

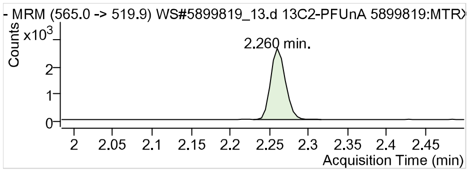


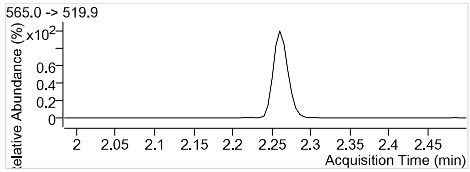
13C5-PFNA 468.0 -> 422.9
RT (Exp. RT): 2.053 (2.053)
Calc. conc. 85.20 µg/L
Area ratio: 0.24793
Sample type: QC



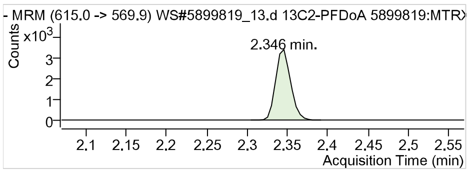


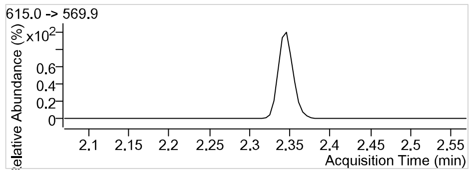
13C2-PFDA 515.0 -> 469.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 89.76 µg/L
Area ratio: 0.15354
Sample type: QC



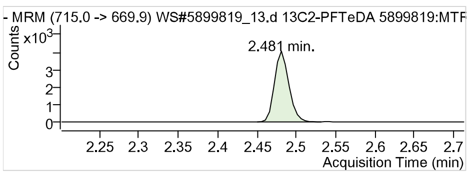


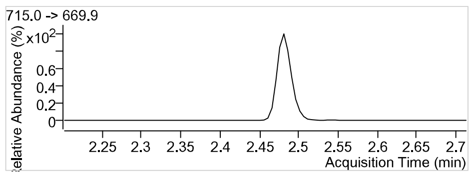
13C2-PFUnA 565.0 -> 519.9
RT (Exp. RT): 2.260 (2.260)
Calc. conc. 84.90 µg/L
Area ratio: 0.16951
Sample type: QC



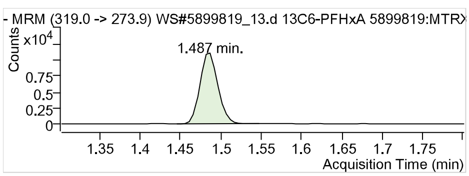


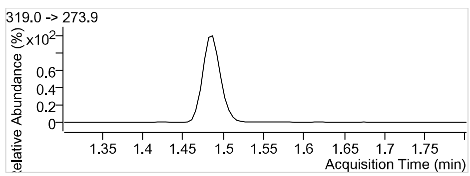
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.346 (2.346)
Calc. conc. 82.57 µg/L
Area ratio: 0.21175
Sample type: QC



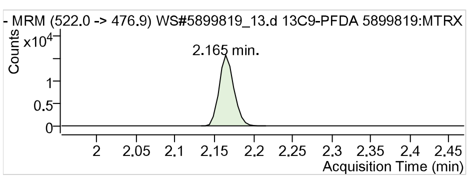


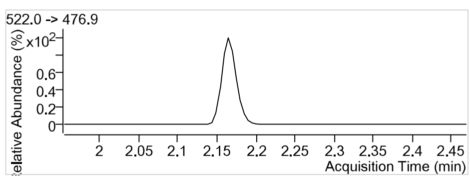
13C2-PFTeDA 715.0 -> 669.9
RT (Exp. RT): 2.481 (2.481)
Calc. conc. 66.44 µg/L
Area ratio: 0.24843
Sample type: QC





13C6-PFHxA 319.0 -> 273.9
RT (Exp. RT): 1.487 (1.487)
Calc. conc. 2.42 µg/L
Area ratio: 0
Sample type: QC





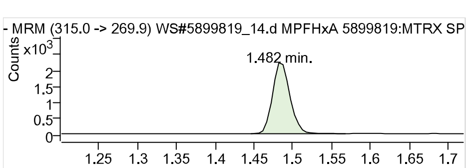
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 2.165 (2.165)
Calc. conc. 2.47 µg/L
Area ratio: 0
Sample type: QC

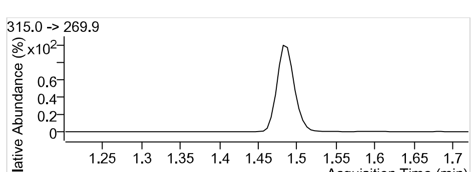
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819\QuantResults\PFC_Water_Low_20181221_WS#5899819_EToxics

Sample Name	**5899819:MTRX SPK:D1**	**Instrument**	LCMS04
Data File	WS#5899819_14.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P1-B4
Acq. Date	2018/12/21 5:38:29 PM	**Injection Volume**	Per Method
Sample Annotation	IOF247		

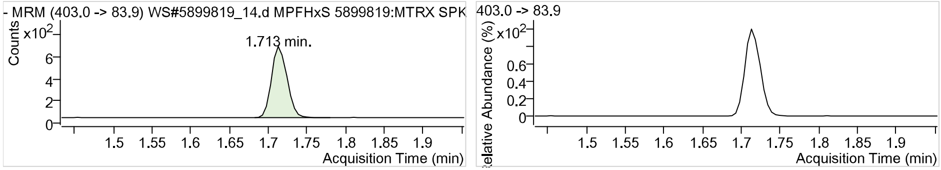
ISTD Compounds	Response	RT	Target conc.		
MPFHxA	3405	1.48	1 µg/L		
MPFHxS	883	1.71	1 µg/L		
MPFHpA	5106	1.73	1 µg/L		
MPFOA	4617	1.91	1 µg/L		
MPFOS	973	2.00	1 µg/L		
MPFNA	4090	2.05	1 µg/L		
MPFDA	3028	2.16	1 µg/L		
MPFUnA	3480	2.26	1 µg/L		
MPFDoA	4271	2.35	1 µg/L		
MPFTeDA	5031	2.48	1 µg/L		
13C6-PFHxA IS	16883	1.48	1 µg/L		
13C9-PFDA IS	19942	2.16	1 µg/L		

Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFBS 1	5245	1.14	10.40	0.24 µg/L	94.73
PFHxA 1	14931	1.48	10.40	0.23 µg/L	93.78
PFHxS 1	4116	1.71	10.40	0.24 µg/L	96.60
PFHpA 1	21021	1.74	10.40	0.23 µg/L	90.90
PFOA 1	20756	1.91	10.40	0.24 µg/L	97.91
PFOS 1	4096	2.00	10.40	0.24 µg/L	97.87
PFNA 1	15438	2.05	10.40	0.25 µg/L	99.59
PFDA 1	16975	2.17	10.40	0.23 µg/L	91.34
PFUnA 1	15506	2.26	10.40	0.23 µg/L	91.34
PFDoA 1	17512	2.35	10.40	0.24 µg/L	95.08
PFTrDA 1	19691	2.42	10.40	0.27 µg/L	107.80
PFTeDA 1	18466	2.48	10.40	0.24 µg/L	96.36
13C2-PFHxA	3405	1.48	100.00	89.25 µg/L	89.25
18O2-PFHxS	883	1.71	100.00	90.36 µg/L	90.36
13C4-PFHpA	5106	1.73	100.00	92.56 µg/L	92.56
13C4-PFOA	4617	1.91	100.00	89.47 µg/L	89.47
13C4-PFOS	973	2.00	100.00	90.28 µg/L	90.28
13C5-PFNA	4090	2.05	100.00	83.24 µg/L	83.24
13C2-PFDA	3028	2.16	100.00	88.77 µg/L	88.77
13C2-PFUnA	3480	2.26	100.00	87.40 µg/L	87.40
13C2-PFDoA	4271	2.35	100.00	83.52 µg/L	83.52
13C2-PFTeDA	5031	2.48	100.00	67.47 µg/L	67.47
13C6-PFHxA	16883	1.48	100.00	2.41 µg/L	100.52
13C9-PFDA	19942	2.16	100.00	2.40 µg/L	100.19

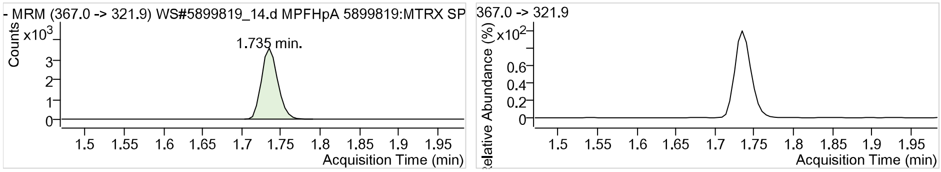




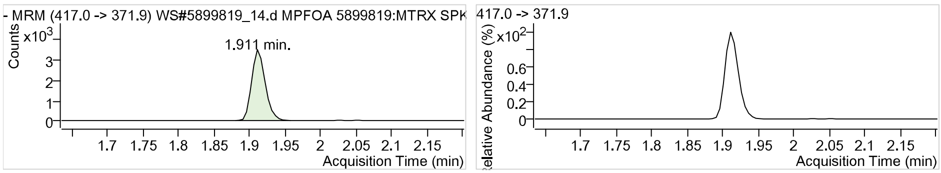
MPFHxA	Internal Standard
RT (Exp. RT):	1.482 (1.487)
Concentration:	1 µg/L
Sample type:	QC



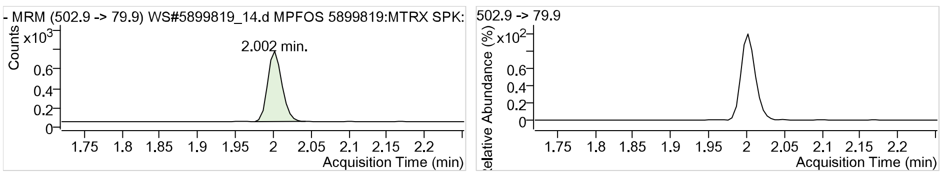
MPFHxS Internal Standard
RT (Exp. RT): 1.713 (1.713)
Concentration: 1 µg/L
Sample type: QC



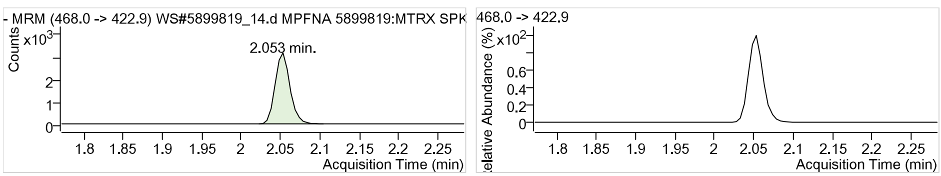
MPFHpA Internal Standard
RT (Exp. RT): 1.735 (1.735)
Concentration: 1 µg/L
Sample type: QC



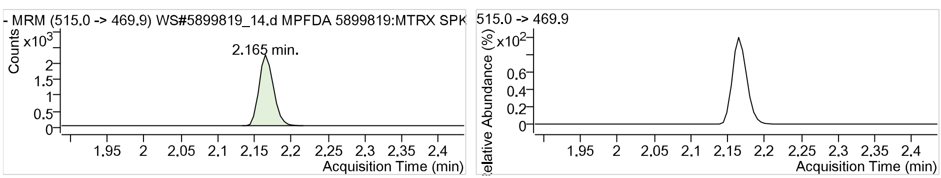
MPFOA Internal Standard
RT (Exp. RT): 1.911 (1.911)
Concentration: 1 µg/L
Sample type: QC



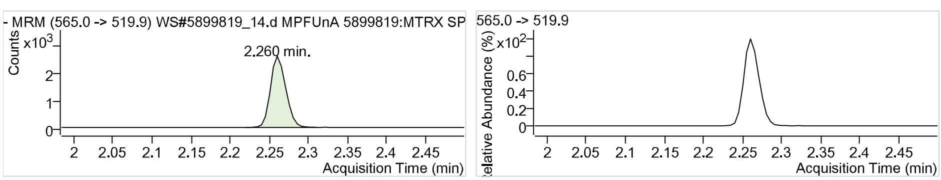
MPFOS Internal Standard
RT (Exp. RT): 2.002 (2.002)
Concentration: 1 µg/L
Sample type: QC



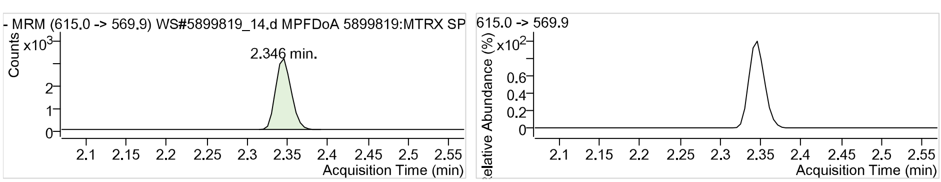
MPFNA Internal Standard
RT (Exp. RT): 2.053 (2.053)
Concentration: 1 µg/L
Sample type: QC



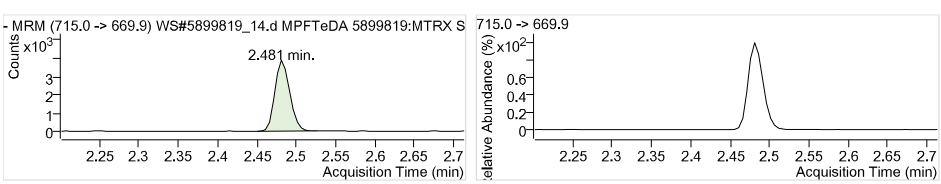
MPFDA Internal Standard
RT (Exp. RT): 2.165 (2.165)
Concentration: 1 µg/L
Sample type: QC



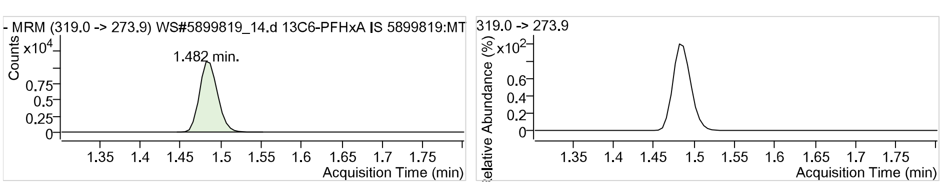
MPFUnA Internal Standard
RT (Exp. RT): 2.260 (2.260)
Concentration: 1 µg/L
Sample type: QC



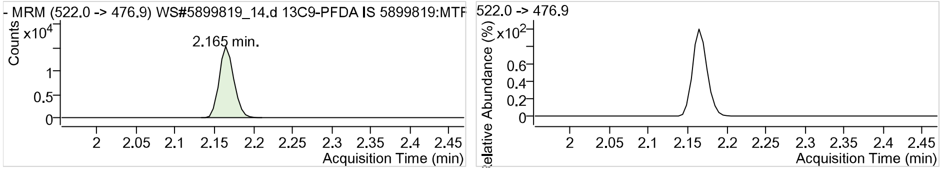
MPFDoA Internal Standard
RT (Exp. RT): 2.346 (2.346)
Concentration: 1 µg/L
Sample type: QC



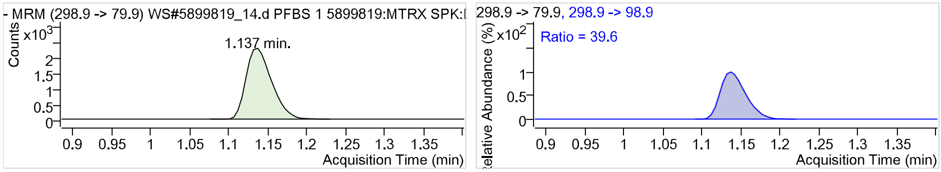
MPFTeDA Internal Standard
RT (Exp. RT): 2.481 (2.481)
Concentration: 1 µg/L
Sample type: QC



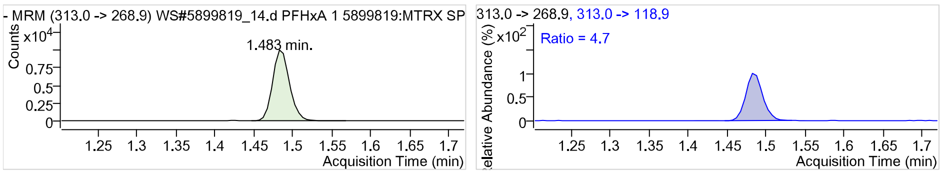
13C6-PFHxA IS Internal Standard
RT (Exp. RT): 1.482 (1.487)
Concentration: 1 µg/L
Sample type: QC



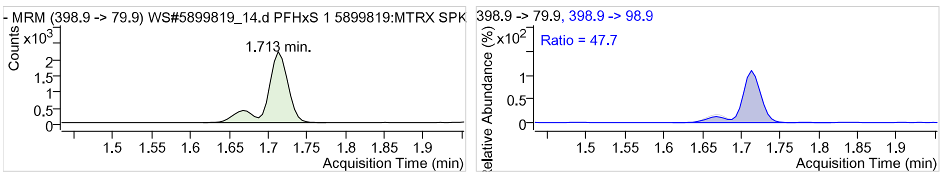
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	2.165 (2.165)
Concentration:	1 µg/L
Sample type:	QC



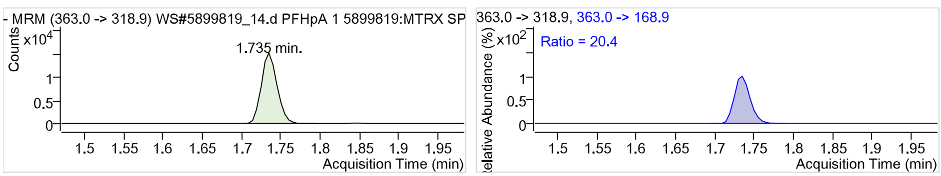
PFBS 1	298.9 -> 79.9
RT (Exp. RT):	1.137 (1.162)
Calc. conc.	0.24 µg/L
Area ratio:	5.93998
Sample type:	QC



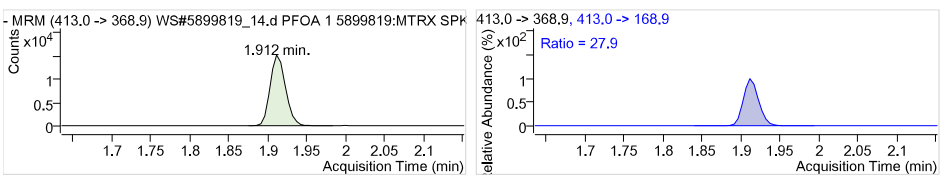
PFHxA 1	313.0 -> 268.9
RT (Exp. RT):	1.483 (1.488)
Calc. conc.	0.23 µg/L
Area ratio:	4.38502
Sample type:	QC



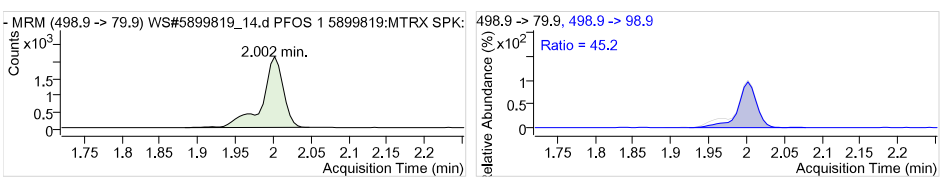
PFHxS 1	398.9 -> 79.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	0.24 µg/L
Area ratio:	4.66138
Sample type:	QC



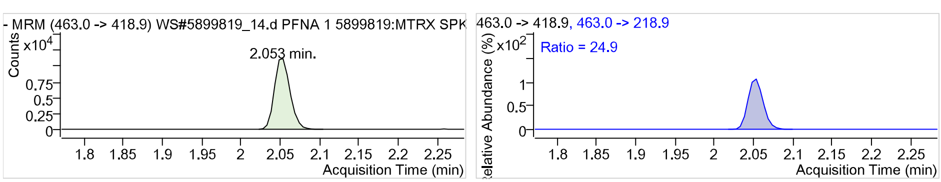
PFHpA 1	363.0 -> 318.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	0.23 µg/L
Area ratio:	4.11692
Sample type:	QC



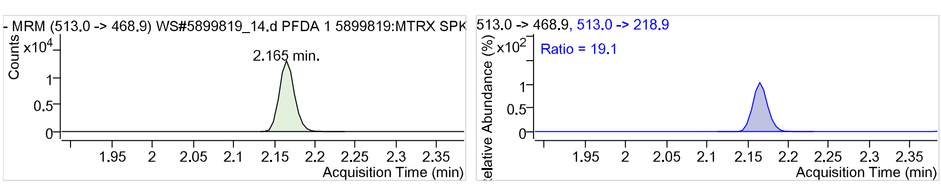
PFOA 1	413.0 -> 368.9
RT (Exp. RT):	1.912 (1.912)
Calc. conc.	0.24 µg/L
Area ratio:	4.49556
Sample type:	QC



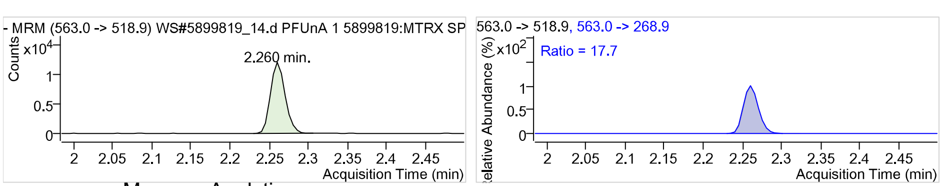
PFOS 1	498.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	0.24 µg/L
Area ratio:	4.20966
Sample type:	QC



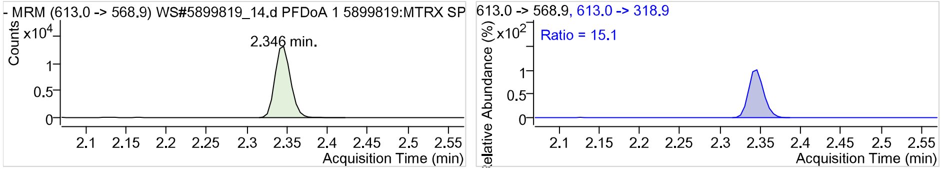
PFNA 1	463.0 -> 418.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	0.25 µg/L
Area ratio:	3.77457
Sample type:	QC



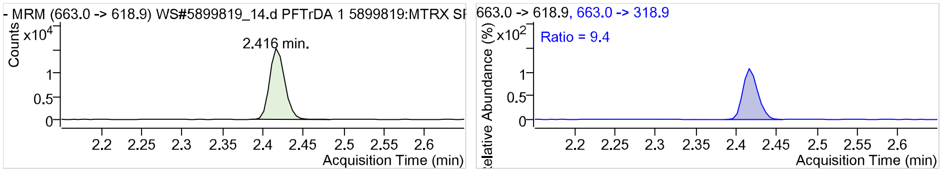
PFDA 1	513.0 -> 468.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	0.23 µg/L
Area ratio:	5.60601
Sample type:	QC



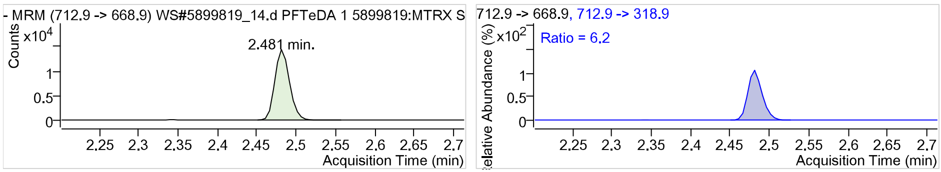
PFUnA 1	563.0 -> 518.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	0.23 µg/L
Area ratio:	4.45575
Sample type:	QC



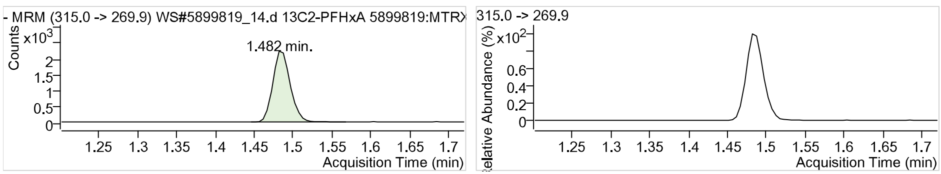
PFDoA 1	613.0 -> 568.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	0.24 µg/L
Area ratio:	4.10021
Sample type:	QC



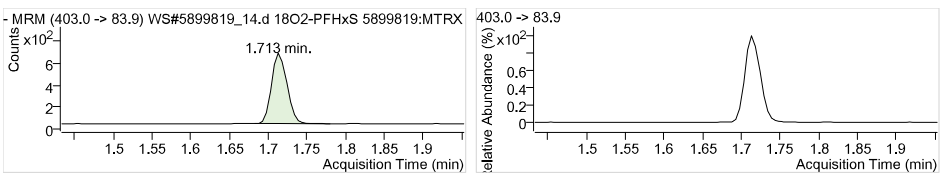
PFTrDA 1	663.0 -> 618.9
RT (Exp. RT):	2.416 (2.416)
Calc. conc.	0.27 µg/L
Area ratio:	3.91393
Sample type:	QC



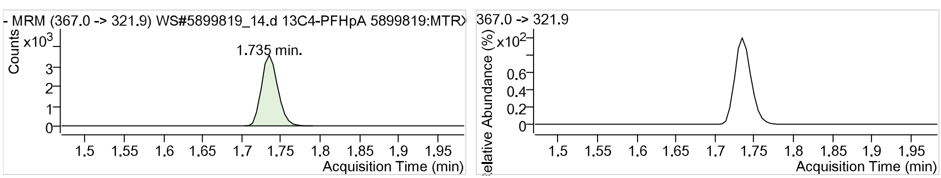
PFTeDA 1	712.9 -> 668.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	0.24 µg/L
Area ratio:	3.67044
Sample type:	QC



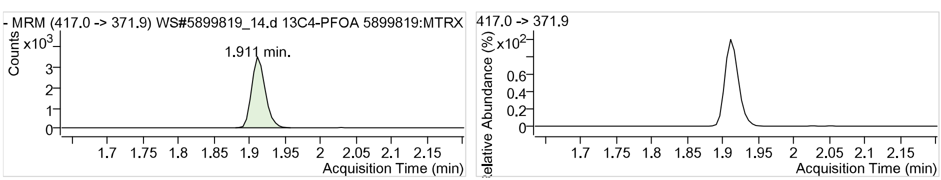
13C2-PFHxA	315.0 -> 269.9
RT (Exp. RT):	1.482 (1.487)
Calc. conc.	89.25 µg/L
Area ratio:	0.20168
Sample type:	QC



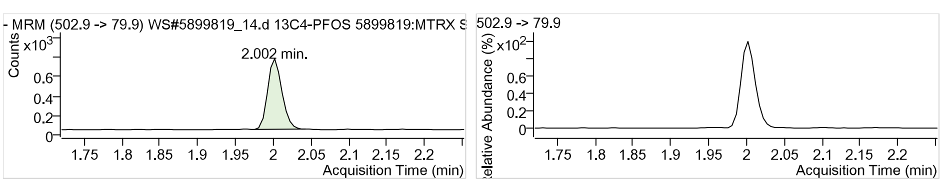
18O2-PFHxS	403.0 -> 83.9
RT (Exp. RT):	1.713 (1.713)
Calc. conc.	90.36 µg/L
Area ratio:	0.05230
Sample type:	QC



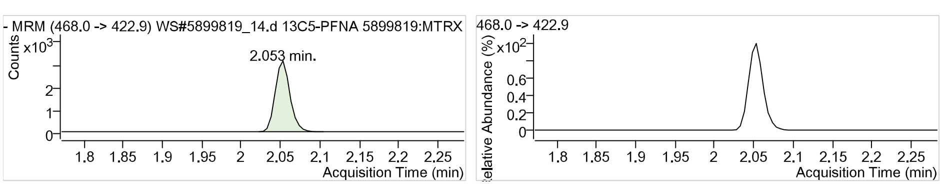
13C4-PFHpA	367.0 -> 321.9
RT (Exp. RT):	1.735 (1.735)
Calc. conc.	92.56 µg/L
Area ratio:	0.30243
Sample type:	QC



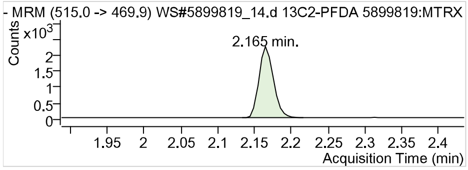
13C4-PFOA	417.0 -> 371.9
RT (Exp. RT):	1.911 (1.911)
Calc. conc.	89.47 µg/L
Area ratio:	0.27347
Sample type:	QC

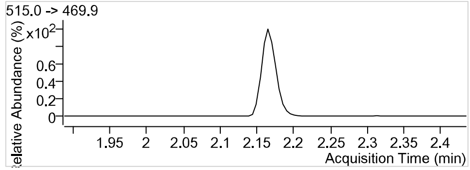


13C4-PFOS	502.9 -> 79.9
RT (Exp. RT):	2.002 (2.002)
Calc. conc.	90.28 µg/L
Area ratio:	0.05763
Sample type:	QC

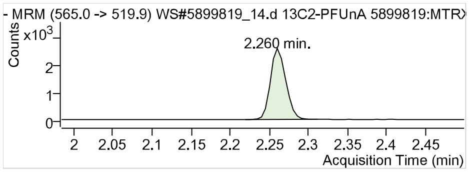


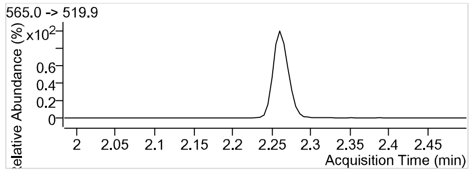
13C5-PFNA	468.0 -> 422.9
RT (Exp. RT):	2.053 (2.053)
Calc. conc.	83.24 µg/L
Area ratio:	0.24226
Sample type:	QC



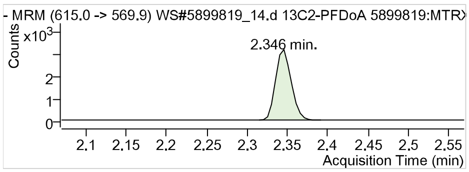


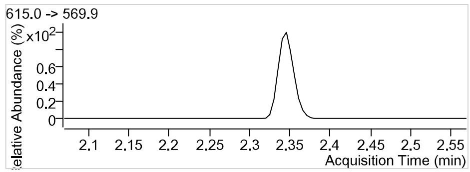
13C2-PFDA	515.0 -> 469.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	88.77 µg/L
Area ratio:	0.15184
Sample type:	QC



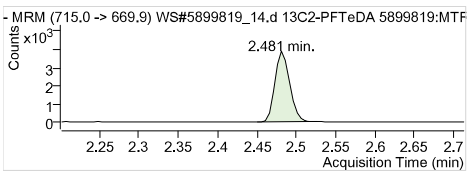


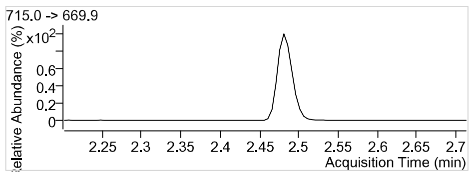
13C2-PFUnA	565.0 -> 519.9
RT (Exp. RT):	2.260 (2.260)
Calc. conc.	87.40 µg/L
Area ratio:	0.17451
Sample type:	QC



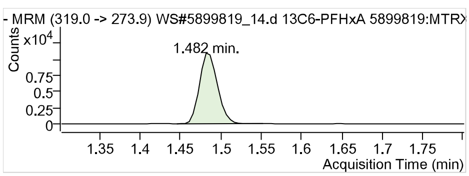


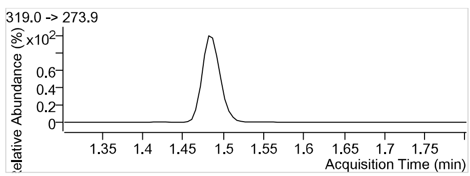
13C2-PFDoA	615.0 -> 569.9
RT (Exp. RT):	2.346 (2.346)
Calc. conc.	83.52 µg/L
Area ratio:	0.21417
Sample type:	QC



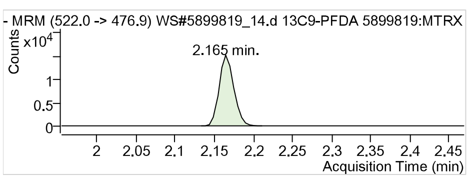


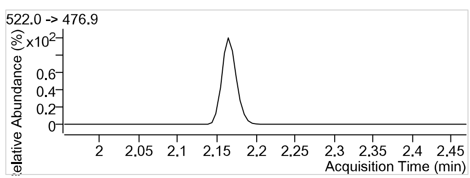
13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.481 (2.481)
Calc. conc.	67.47 µg/L
Area ratio:	0.25228
Sample type:	QC





13C6-PFHxA	319.0 -> 273.9
RT (Exp. RT):	1.482 (1.487)
Calc. conc.	2.41 µg/L
Area ratio:	0
Sample type:	QC





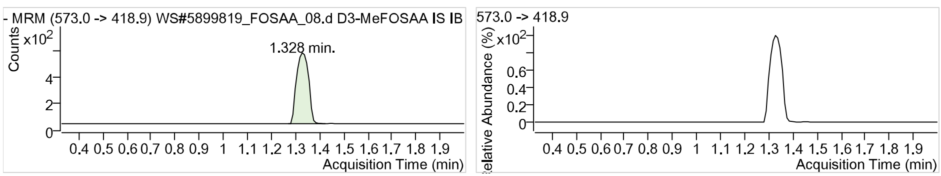
13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.165 (2.165)
Calc. conc.	2.40 µg/L
Area ratio:	0
Sample type:	QC

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

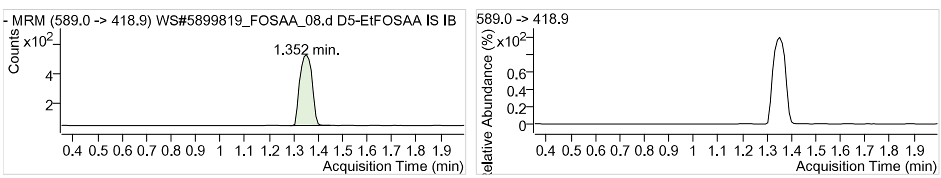
Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_08.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-A8
Acq. Date	2018/12/21 11:41:23 PM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1882	1.33	1 µg/L		
D5-EtFOSAA IS	1656	1.35	1 µg/L		
13C9-PFDA IS	21318	0.99	1 µg/L		

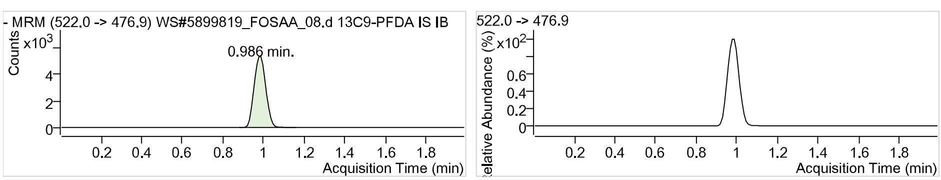
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1881	1.33	-	104.04 µg/L	-
D5-EtFOSAA	1660	1.35	-	102.45 µg/L	-
13C9-PFDA	21125	0.99	-	2.44 µg/L	-



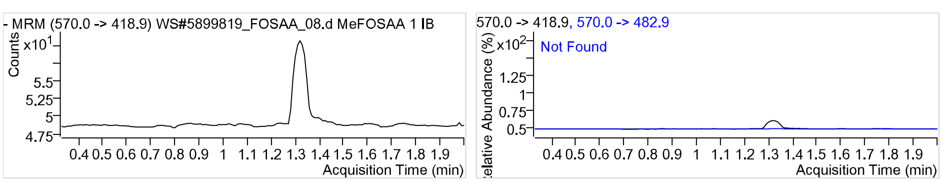
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



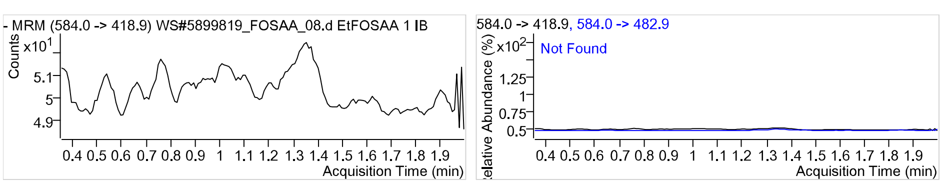
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



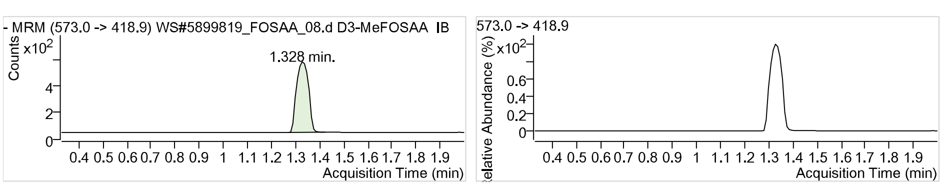
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.986 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



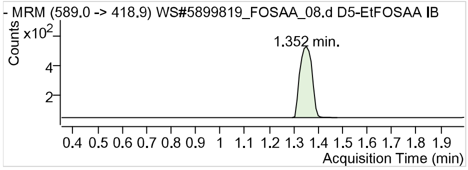
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

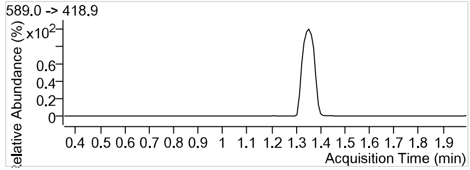


EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample

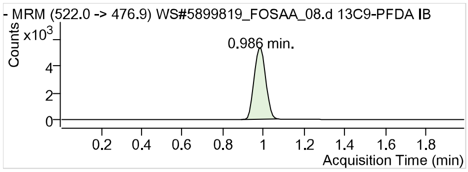


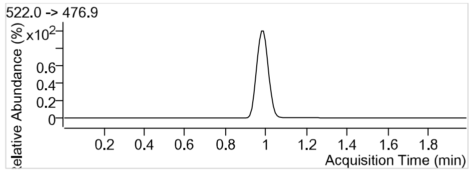
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	104.04 µg/L
Area ratio:	0.08824
Sample type:	Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	102.45 µg/L
Area ratio:	0.07787
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.986 (0.986)
Calc. conc.	2.44 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

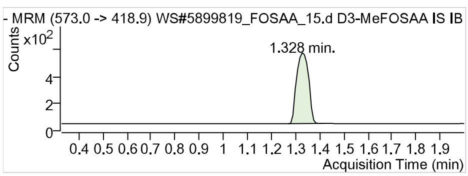
Agilent Technologies

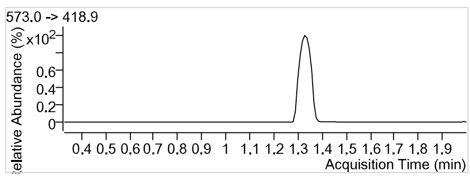
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_15.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-A8
Acq. Date	2018/12/21 11:58:06 PM	**Injection Volume**	Per Method
Sample Annotation	-		

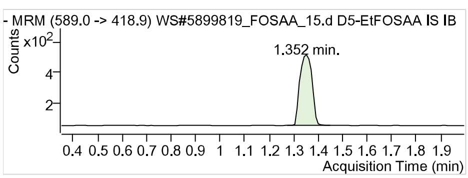
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1828	1.33	1 µg/L		
D5-EtFOSAA IS	1634	1.35	1 µg/L		
13C9-PFDA IS	21140	0.98	1 µg/L		

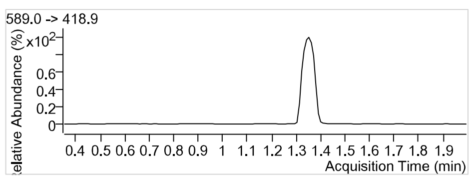
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1827	1.33	-	101.90 µg/L	-
D5-EtFOSAA	1633	1.35	-	101.63 µg/L	-
13C9-PFDA	20973	0.98	-	2.42 µg/L	-



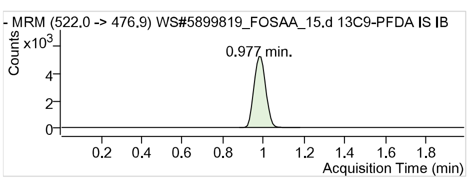


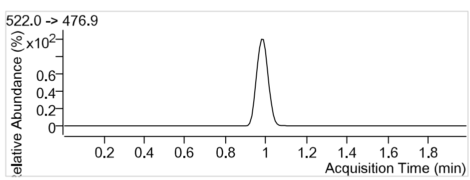
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



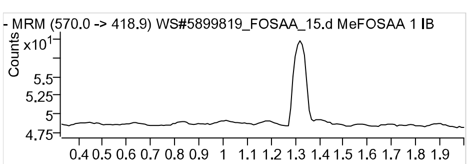


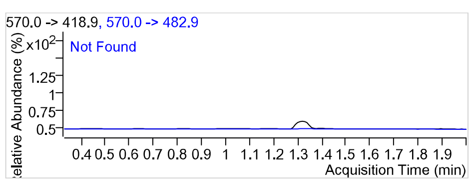
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



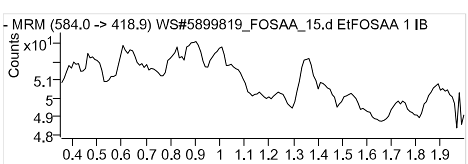


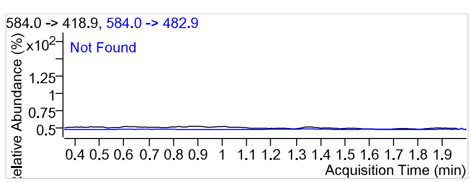
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.977 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



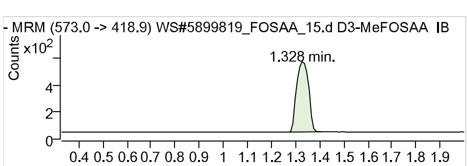


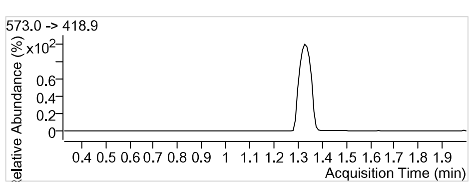
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



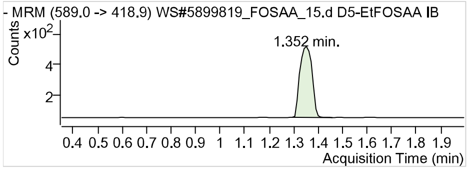


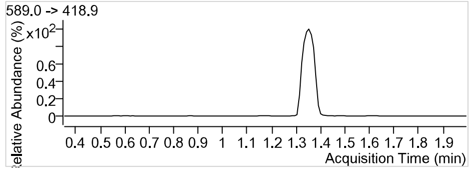
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



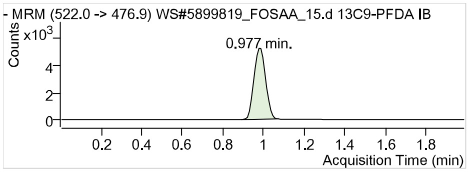


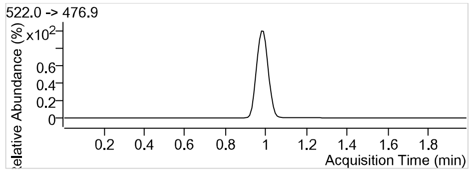
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	101.90 µg/L
Area ratio:	0.08642
Sample type:	Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	101.63 µg/L
Area ratio:	0.07725
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.977 (0.986)
Calc. conc.	2.42 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

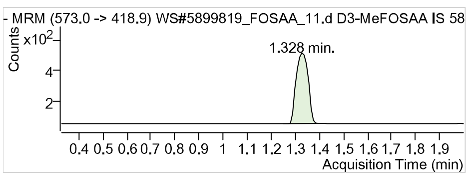
Agilent Technologies

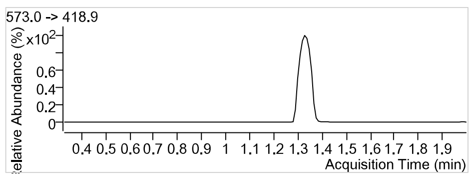
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

Sample Name	**5899819:BLANK**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_11.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-B1
Acq. Date	2018/12/21 11:48:35 PM	**Injection Volume**	Per Method
Sample Annotation	-		

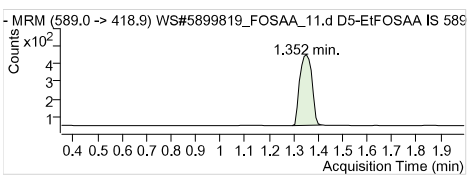
ISTD Compounds	**Response**	**RT**	**Target conc.**		
D3-MeFOSAA IS	1635	1.33	1 µg/L		
D5-EtFOSAA IS	1392	1.35	1 µg/L		
13C9-PFDA IS	22016	0.97	1 µg/L		

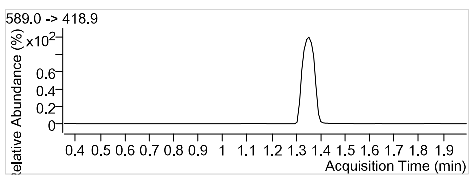
Compound	**Response**	**RT**	**Target Conc.**	**Calc. Conc.**	**Accuracy**
MeFOSAA 1			-	ND	-
EtFOSAA 1			-	ND	-
D3-MeFOSAA	1638	1.33	-	87.72 µg/L	-
D5-EtFOSAA	1403	1.35	-	83.84 µg/L	-
13C9-PFDA	22012	0.97	-	2.54 µg/L	-



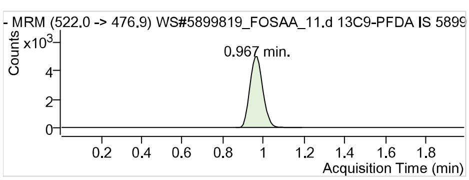


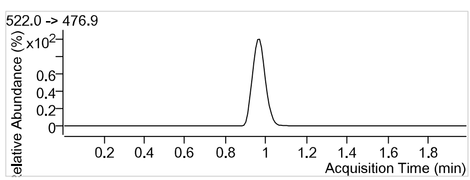
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	Sample



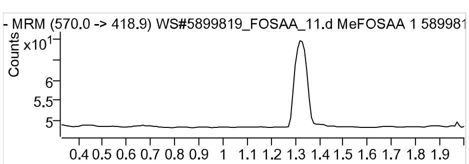


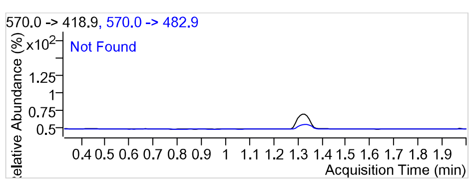
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	Sample



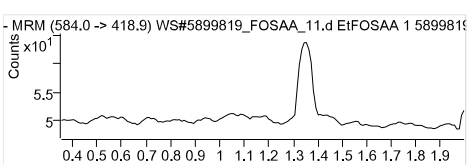


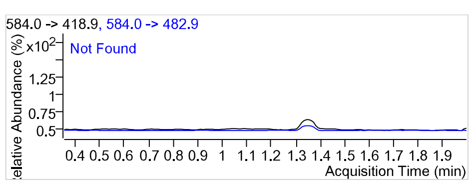
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.967 (0.986)
Concentration:	1 µg/L
Sample type:	Sample



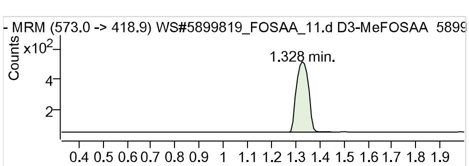


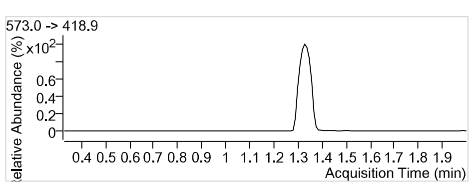
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	0.000 (1.329)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



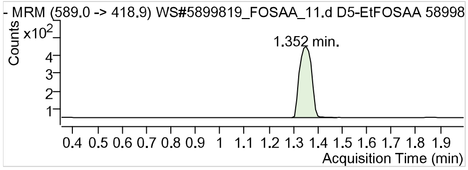


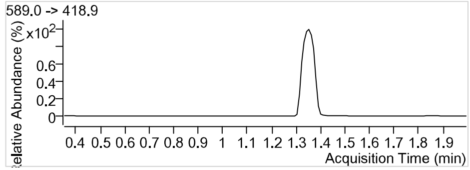
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	0.000 (1.354)
Calc. conc.	N.D.
Area ratio:	0
Sample type:	Sample



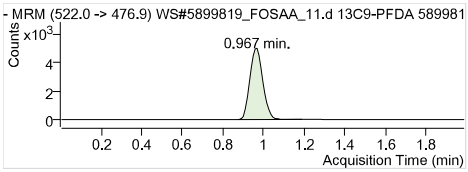


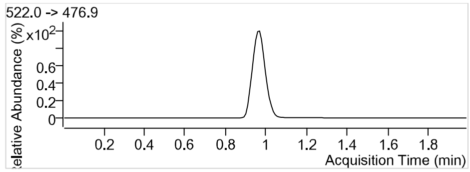
D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	87.72 µg/L
Area ratio:	0.07440
Sample type:	Sample





D5-EtFOSAA	589.0 -> 418.9
RT (Exp. RT):	1.352 (1.352)
Calc. conc.	83.84 µg/L
Area ratio:	0.06373
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	0.967 (0.986)
Calc. conc.	2.54 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

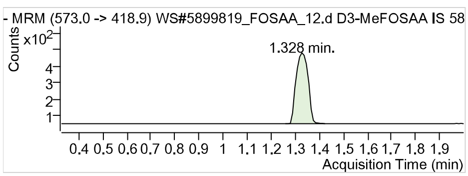
Agilent Technologies

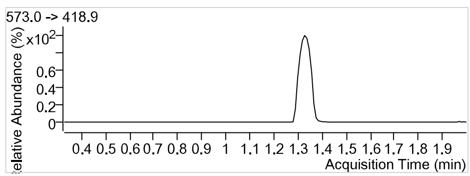
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

Sample Name	**5899819:SPIKE**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_12.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-B2
Acq. Date	2018/12/21 11:50:57 PM	**Injection Volume**	Per Method
Sample Annotation	-		

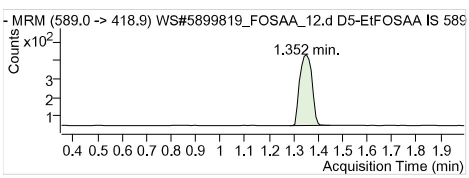
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1500	1.33	1 µg/L		
D5-EtFOSAA IS	1327	1.35	1 µg/L		
13C9-PFDA IS	21548	0.96	1 µg/L		

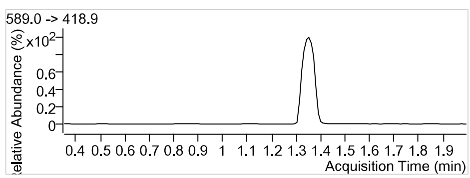
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	10457	1.33	20.80	0.49 µg/L	97.81
EtFOSAA 1	11818	1.35	20.80	0.48 µg/L	97.01
D3-MeFOSAA	1498	1.33	100.00	81.97 µg/L	81.97
D5-EtFOSAA	1329	1.35	100.00	81.14 µg/L	81.14
13C9-PFDA	21453	0.96	100.00	2.48 µg/L	103.20



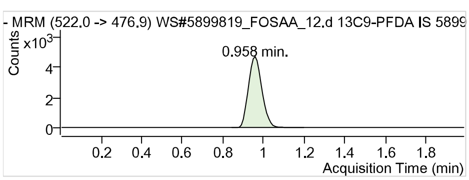


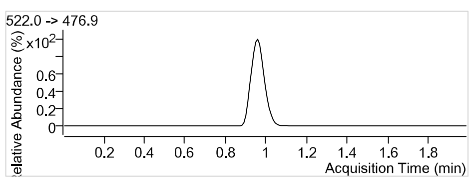
D3-MeFOSAA IS Internal Standard
RT (Exp. RT): 1.328 (1.328)
Concentration: 1 µg/L
Sample type: QC



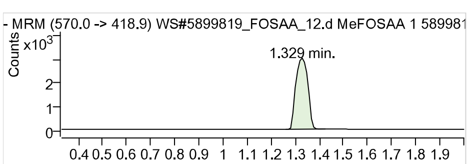


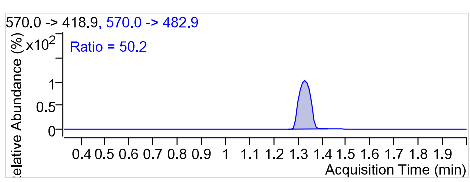
D5-EtFOSAA IS Internal Standard
RT (Exp. RT): 1.352 (1.352)
Concentration: 1 µg/L
Sample type: QC



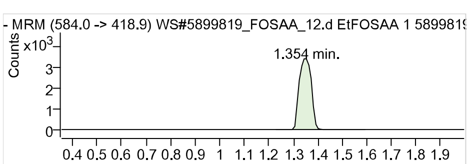


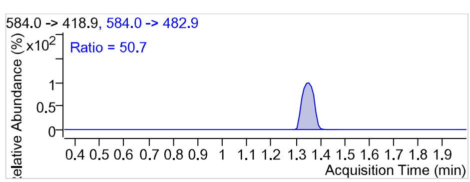
13C9-PFDA IS Internal Standard
RT (Exp. RT): 0.958 (0.986)
Concentration: 1 µg/L
Sample type: QC



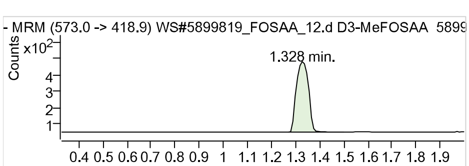


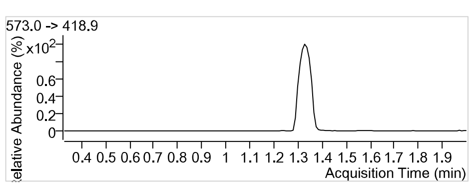
MeFOSAA 1 570.0 -> 418.9
RT (Exp. RT): 1.329 (1.329)
Calc. conc. 0.49 µg/L
Area ratio: 6.97133
Sample type: QC



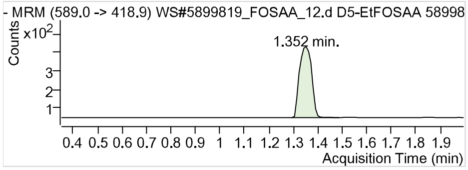


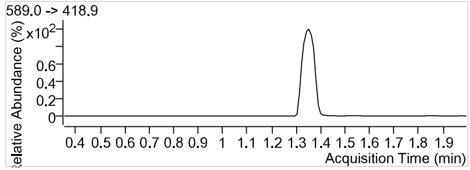
EtFOSAA 1 584.0 -> 418.9
RT (Exp. RT): 1.354 (1.354)
Calc. conc. 0.48 µg/L
Area ratio: 8.90580
Sample type: QC



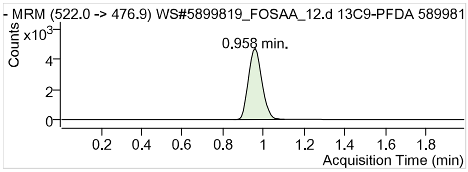


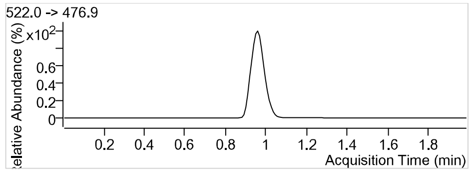
D3-MeFOSAA 573.0 -> 418.9
RT (Exp. RT): 1.328 (1.328)
Calc. conc. 81.97 µg/L
Area ratio: 0.06952
Sample type: QC





D5-EtFOSAA 589.0 -> 418.9
RT (Exp. RT): 1.352 (1.352)
Calc. conc. 81.14 µg/L
Area ratio: 0.06168
Sample type: QC





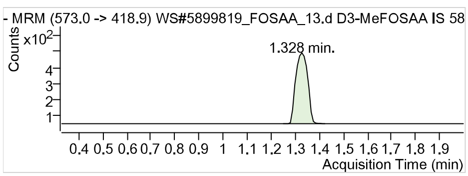
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 0.958 (0.986)
Calc. conc. 2.48 µg/L
Area ratio: 0
Sample type: QC

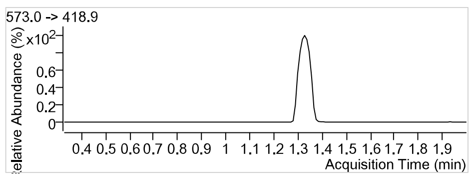
Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

Sample Name	**5899819:MTRX SPK**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_13.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-B3
Acq. Date	2018/12/21 11:53:20 PM	**Injection Volume**	Per Method
Sample Annotation	IOF247		

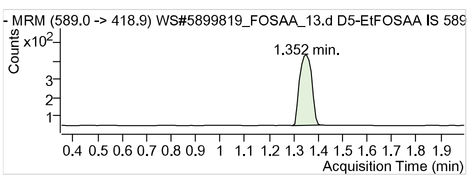
ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1544	1.33	1 µg/L		
D5-EtFOSAA IS	1328	1.35	1 µg/L		
13C9-PFDA IS	22021	0.94	1 µg/L		

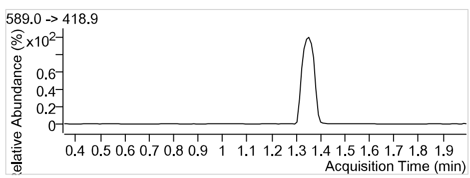
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	5349	1.33	10.40	0.24 µg/L	96.69
EtFOSAA 1	5979	1.34	10.40	0.25 µg/L	98.24
D3-MeFOSAA	1543	1.33	100.00	82.62 µg/L	82.62
D5-EtFOSAA	1335	1.35	100.00	79.76 µg/L	79.76
13C9-PFDA	22094	0.94	100.00	2.55 µg/L	106.28



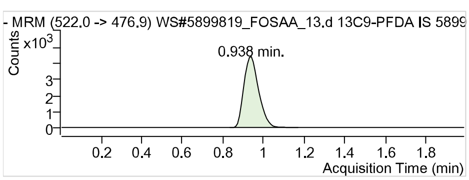


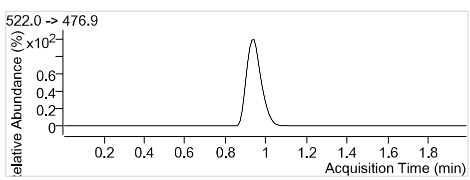
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	QC



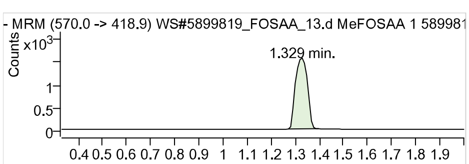


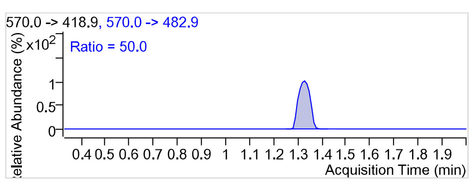
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	QC



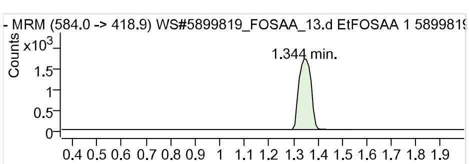


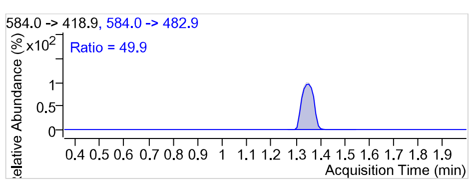
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.938 (0.986)
Concentration:	1 µg/L
Sample type:	QC



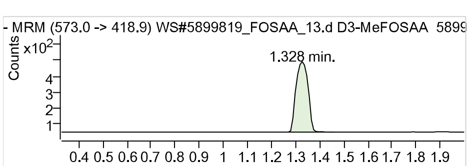


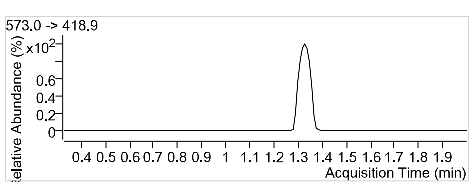
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	1.329 (1.329)
Calc. conc.	0.24 µg/L
Area ratio:	3.46438
Sample type:	QC



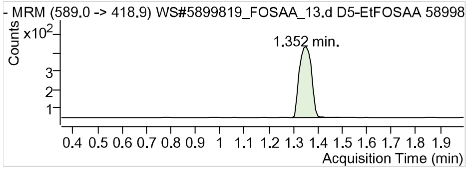


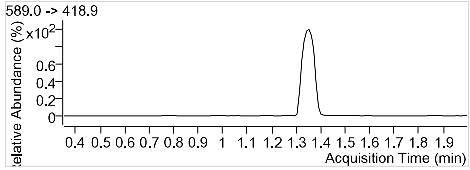
EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	1.344 (1.354)
Calc. conc.	0.25 µg/L
Area ratio:	4.50226
Sample type:	QC





D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	82.62 µg/L
Area ratio:	0.07007
Sample type:	QC





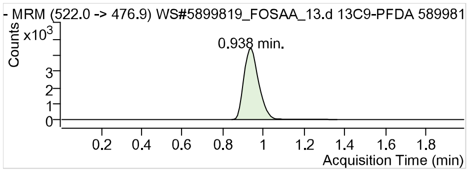
D5-EtFOSAA 589.0 -> 418.9

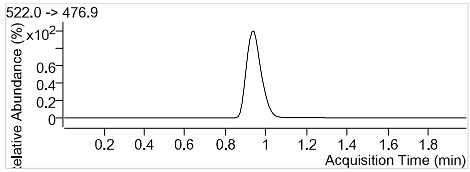
RT (Exp. RT): 1.352 (1.352)

Calc. conc. 79.76 µg/L

Area ratio: 0.06062

Sample type: QC





13C9-PFDA 522.0 -> 476.9

RT (Exp. RT): 0.938 (0.986)

Calc. conc. 2.55 µg/L

Area ratio: 0

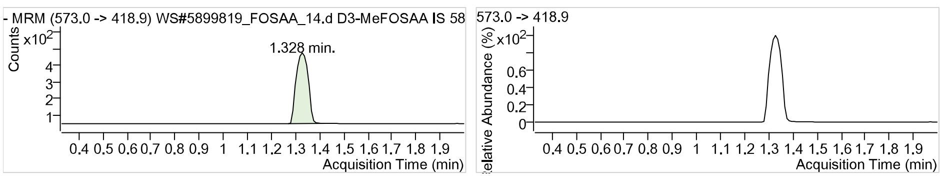
Sample type: QC

Batch Path	T:\LCMS04\PFC\20181221\WS#5899819_FOSAA\QuantResults\PFC_Water_Low_20181221_WS#5899819_FOSAA_EToxics

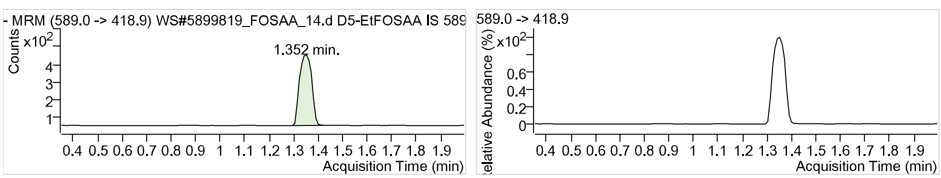
Sample Name	**5899819:MTRX SPK:D1**	**Instrument**	LCMS04
Data File	WS#5899819_FOSAA_14.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low_FOSAA.m	**Position**	P1-B4
Acq. Date	2018/12/21 11:55:43 PM	**Injection Volume**	Per Method
Sample Annotation	IOF247		

ISTD Compounds	Response	RT	Target conc.		
D3-MeFOSAA IS	1487	1.33	1 µg/L		
D5-EtFOSAA IS	1407	1.35	1 µg/L		
13C9-PFDA IS	21427	0.94	1 µg/L		

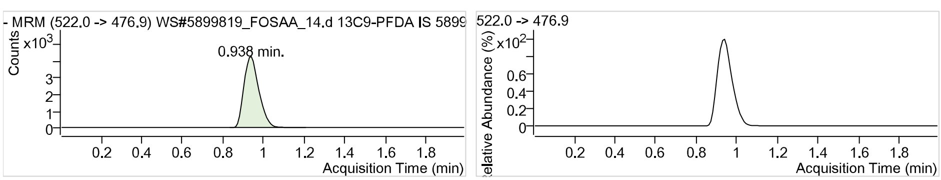
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
MeFOSAA 1	5225	1.33	10.40	0.24 µg/L	98.08
EtFOSAA 1	5768	1.34	10.40	0.22 µg/L	89.48
D3-MeFOSAA	1487	1.33	100.00	81.83 µg/L	81.83
D5-EtFOSAA	1412	1.35	100.00	86.70 µg/L	86.70
13C9-PFDA	21491	0.94	100.00	2.48 µg/L	103.38



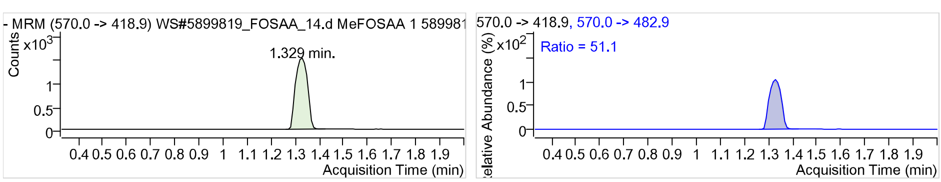
D3-MeFOSAA IS	Internal Standard
RT (Exp. RT):	1.328 (1.328)
Concentration:	1 µg/L
Sample type:	QC



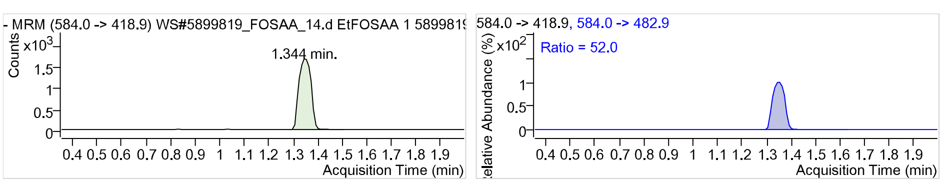
D5-EtFOSAA IS	Internal Standard
RT (Exp. RT):	1.352 (1.352)
Concentration:	1 µg/L
Sample type:	QC



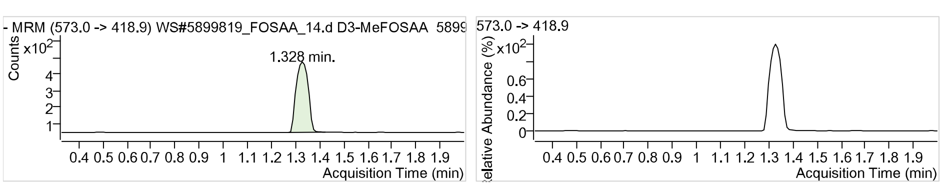
13C9-PFDA IS	Internal Standard
RT (Exp. RT):	0.938 (0.986)
Concentration:	1 µg/L
Sample type:	QC



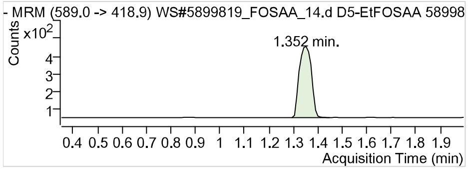
MeFOSAA 1	570.0 -> 418.9
RT (Exp. RT):	1.329 (1.329)
Calc. conc.	0.24 µg/L
Area ratio:	3.51379
Sample type:	QC

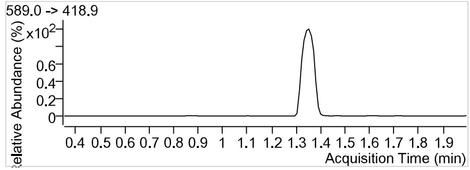


EtFOSAA 1	584.0 -> 418.9
RT (Exp. RT):	1.344 (1.354)
Calc. conc.	0.22 µg/L
Area ratio:	4.09950
Sample type:	QC



D3-MeFOSAA	573.0 -> 418.9
RT (Exp. RT):	1.328 (1.328)
Calc. conc.	81.83 µg/L
Area ratio:	0.06940
Sample type:	QC





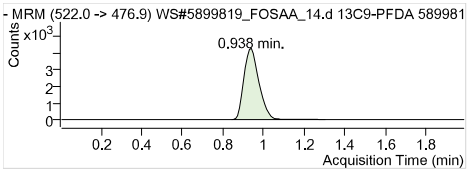
D5-EtFOSAA 589.0 -> 418.9

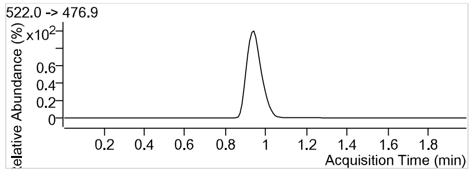
RT (Exp. RT): 1.352 (1.352)

Calc. conc. 86.70 µg/L

Area ratio: 0.06590

Sample type: QC





13C9-PFDA 522.0 -> 476.9

RT (Exp. RT): 0.938 (0.986)

Calc. conc. 2.48 µg/L

Area ratio: 0

Sample type: QC

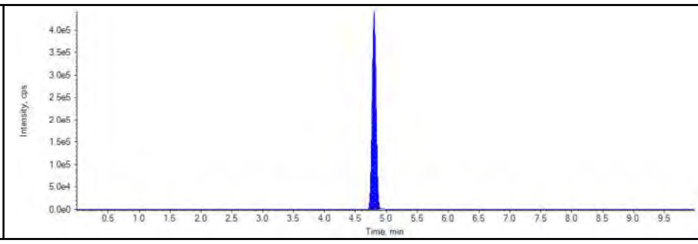
Sample ID	tPFOA	**Injection Volume (µL)**	1.5
Sample Type	Unknown	**Injection Vial**	9
Acquisition Date	2019/01/03 2:24:34 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1900000.	4.80	1.00	-
MPFOS	239000.	5.54	1.00	-
D3-MeFOSAA IS	1590000.	6.35	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFHxA 1	0	0.00	N/A	N/A	N/A
PFHxS 1	0	0.00	N/A	N/A	N/A
PFHpA 1	0	0.00	N/A	N/A	N/A
PFOA 1	2190000	4.81	N/A	33.9	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFNA 1	0	0.00	N/A	N/A	N/A
PFDA 1	0	0.00	N/A	N/A	N/A
PFUnA 1	0	0.00	N/A	N/A	N/A
PFDoA 1	0	0.00	N/A	N/A	N/A
PFTrDA 1	0	0.00	N/A	N/A	N/A
PFTeDA 1	5910	7.75	N/A	0.125	N/A
MeFOSAA 1	0	0.00	N/A	N/A	N/A
EtFOSAA 1	0	0.00	N/A	N/A	N/A
13C2-PFHxA	1580	2.89	N/A	0.0267	N/A
13C2-PFDA	3330	6.11	N/A	0.0768	N/A
D5-EtFOSAA	2230	6.60	N/A	0.276	N/A

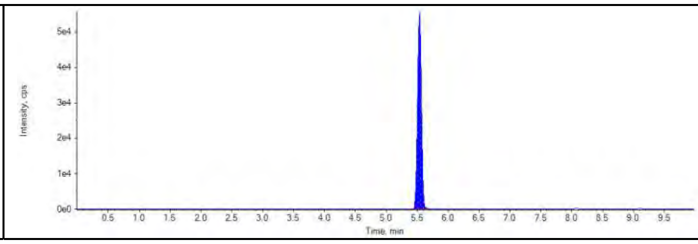
MPFOA (Internal Standard)

RT (Exp. RT): 4.80(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



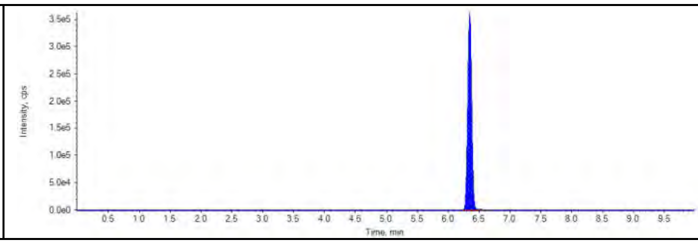
MPFOS (Internal Standard)

RT (Exp. RT): 5.54(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



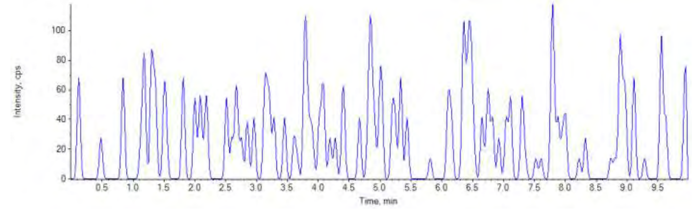
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.35(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Unknown)



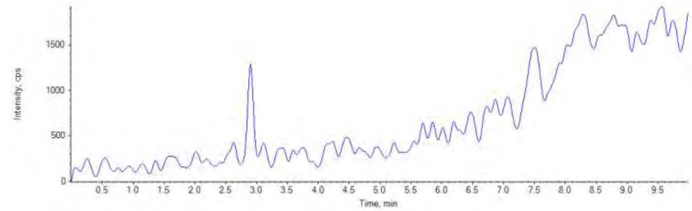
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.85) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



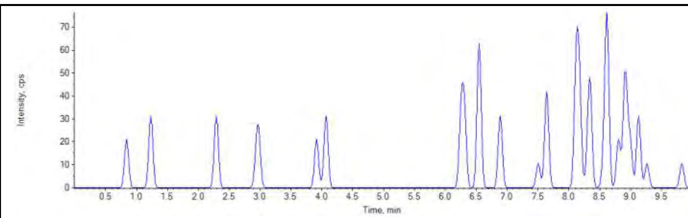
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 0.00 (2.97) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



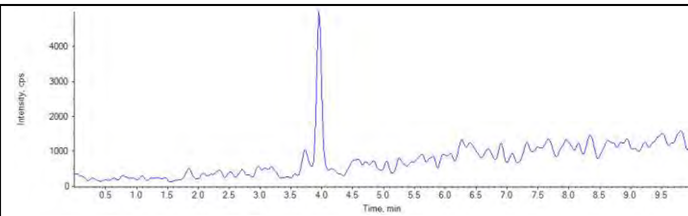
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 0.00 (4.00) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



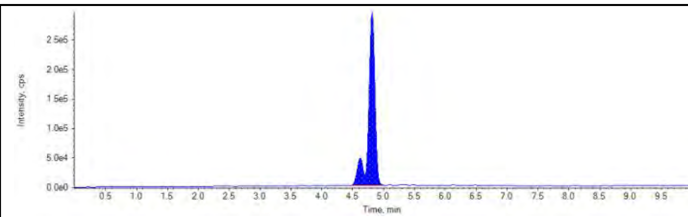
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 0.00 (3.91) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



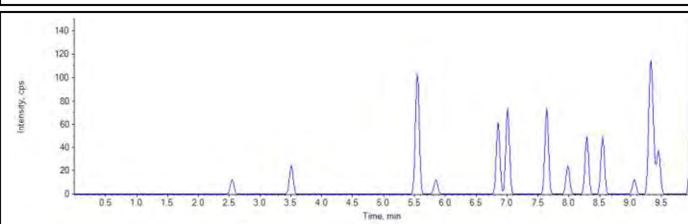
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 33.9 ng/L
Area Ratio: 1.15
Sample Type: (Unknown)



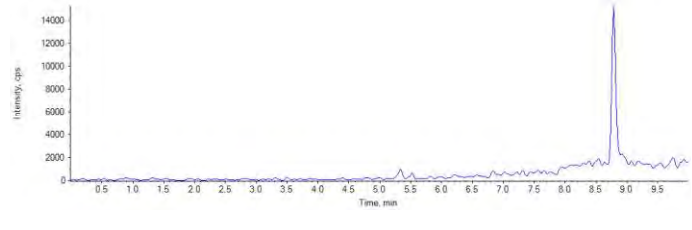
PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.50) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



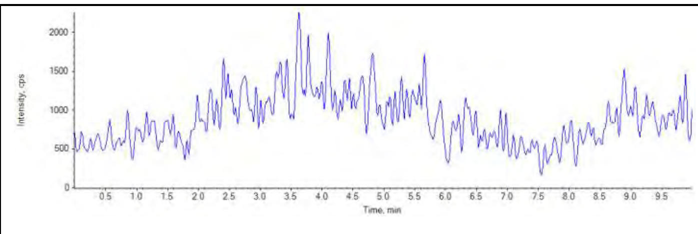
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



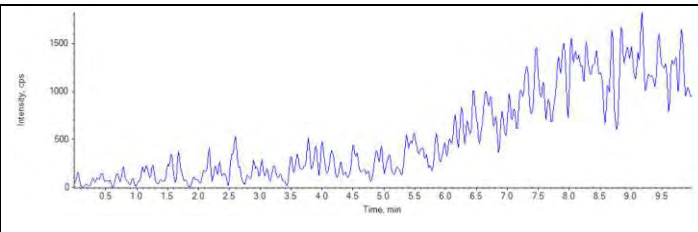
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



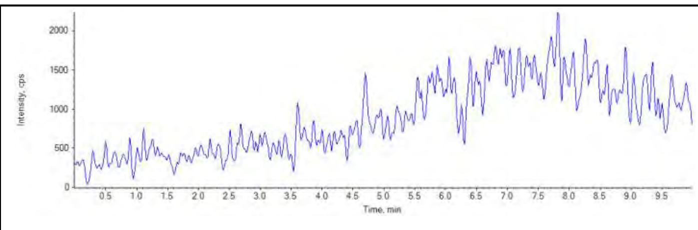
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



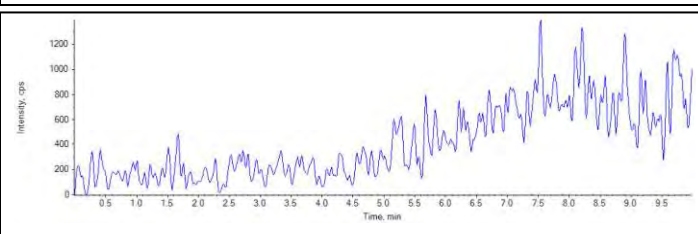
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



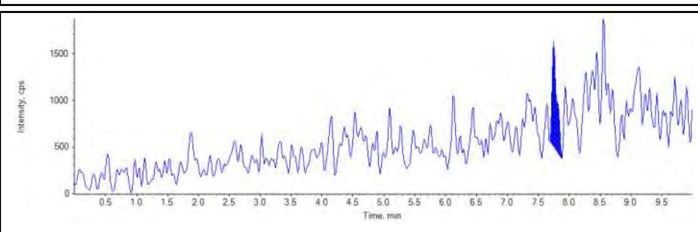
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



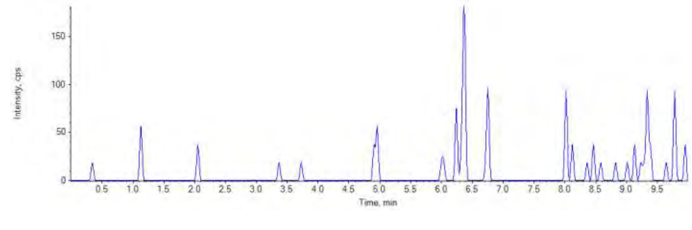
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.75 (7.74) min
Calculated Conc: 0.125 ng/L
Area Ratio: 0.00312
Sample Type: (Unknown)



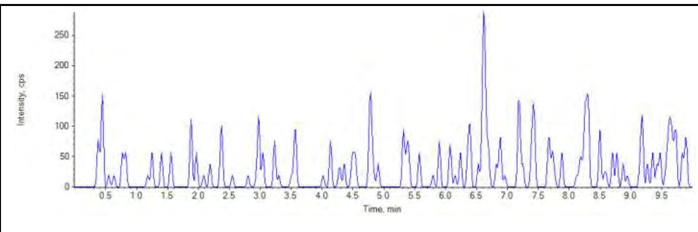
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



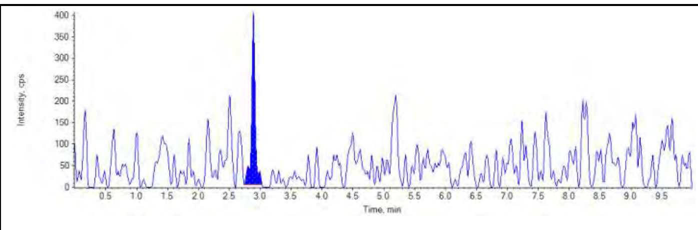
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Unknown)



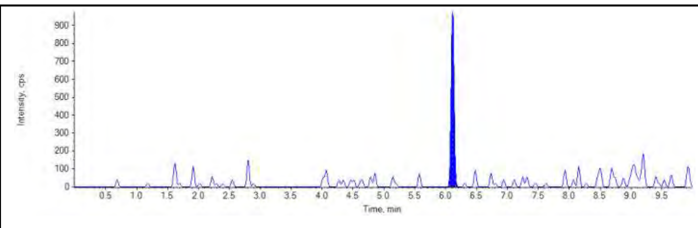
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min
Calculated Conc: 0.0267 ng/L
Area Ratio: 0.000836
Sample Type: (Unknown)



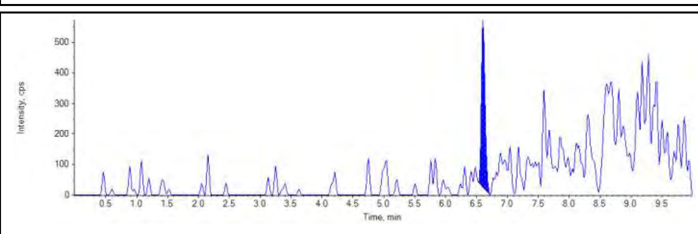
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min
Calculated Conc: 0.0768 ng/L
Area Ratio: 0.00176
Sample Type: (Unknown)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min
Calculated Conc: 0.276 ng/L
Area Ratio: 0.00141
Sample Type: (Unknown)



Sample ID	5907027~BLANK	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	10
Acquisition Date	2019/01/03 2:40:09 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	1990000.	4.80	1.00	-
MPFOS	244000.	5.53	1.00	-
D3-MeFOSAA IS	1570000.	6.34	1.00	-

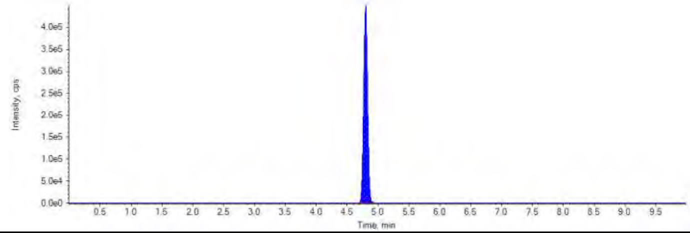
Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	0	0.00	0.00	N/A	N/A
PFHxA 1	0	0.00	0.00	N/A	N/A
PFHxS 1	0	0.00	0.00	N/A	N/A
PFHpA 1	0	0.00	0.00	N/A	N/A
PFOA 1	12900	4.82	0.00	0.190	N/A
PFOS 1	0	0.00	0.00	N/A	N/A
PFNA 1	0	0.00	0.00	N/A	N/A
PFDA 1	0	0.00	0.00	N/A	N/A
PFUnA 1	0	0.00	0.00	N/A	N/A
PFDoA 1	0	0.00	0.00	N/A	N/A
PFTrDA 1	0	0.00	0.00	N/A	N/A
PFTeDA 1	0	0.00	0.00	N/A	N/A
MeFOSAA 1	0	0.00	0.00	N/A	N/A
EtFOSAA 1	0	0.00	0.00	N/A	N/A
13C2-PFHxA	2280000	2.89	40.0	36.6	91.4
13C2-PFDA	1580000	6.11	40.0	34.6	86.5
D5-EtFOSAA	1260000	6.60	160.	157.	98.1

MPFOA (Internal Standard)

RT (Exp. RT): 4.80(4.84) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

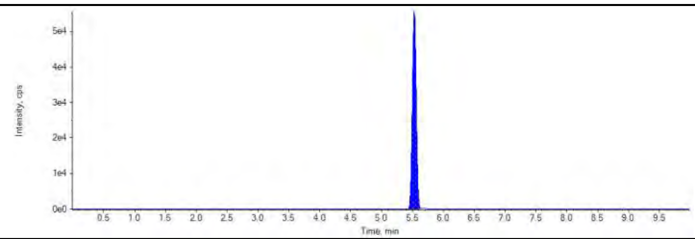


MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

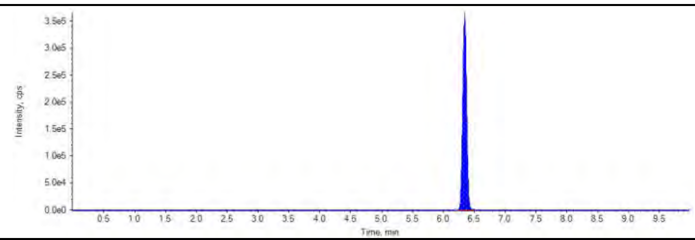


D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min

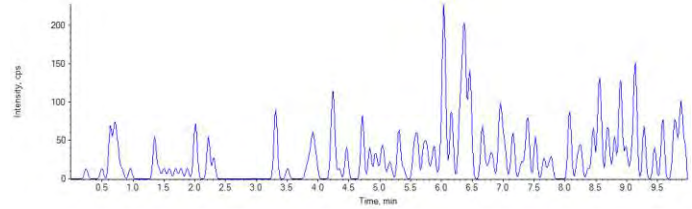
Concentration: 1.00 ng/L

Sample Type: (Quality Control)



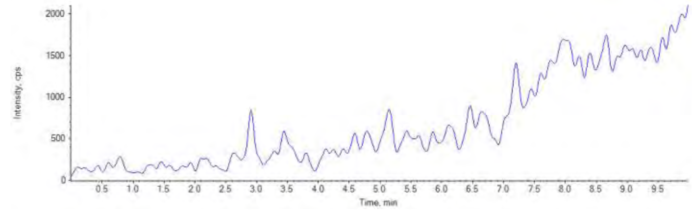
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.85) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Quality Control)



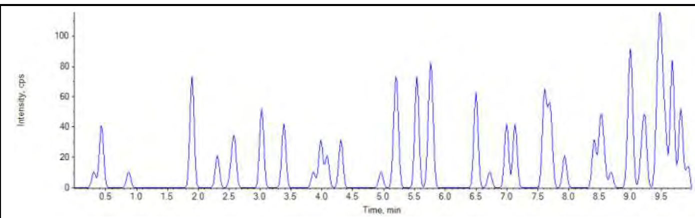
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 0.00 (2.97) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Quality Control)



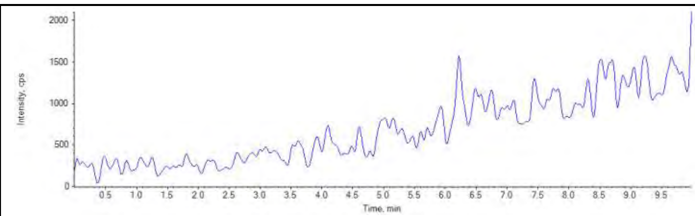
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 0.00 (4.00) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Quality Control)



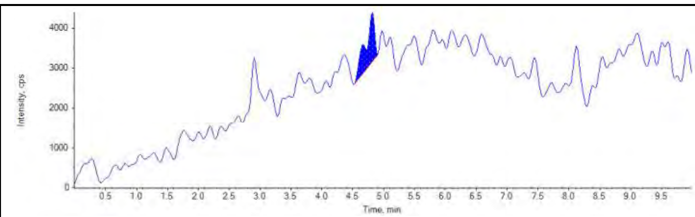
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 0.00 (3.91) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Quality Control)



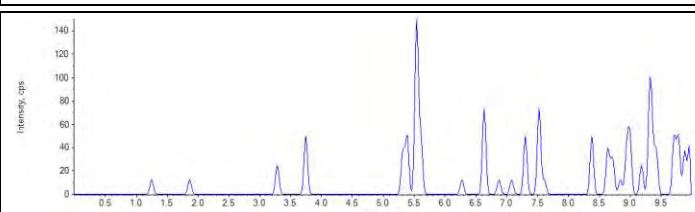
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.82 (4.89) min
Calculated Conc: 0.190 ng/L
Area Ratio: 0.00648
Sample Type: (Quality Control)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 0.00 (5.50) min
Calculated Conc: N/A ng/L
Area Ratio: 0.00
Sample Type: (Quality Control)



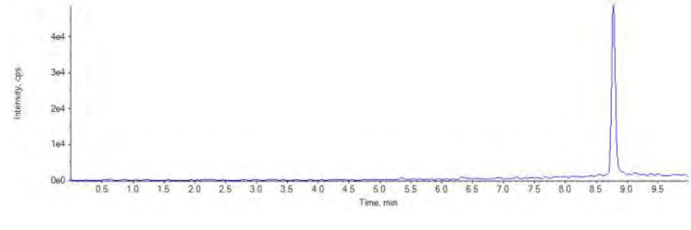
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 0.00 (5.49) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



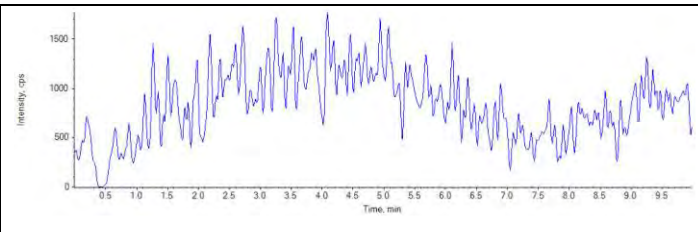
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 0.00 (6.07) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



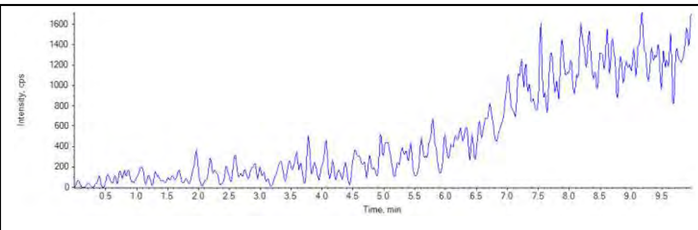
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 0.00 (6.62) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



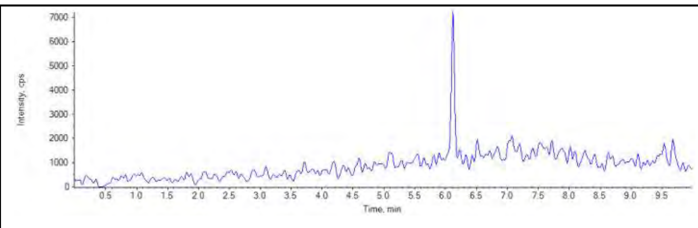
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 0.00 (7.04) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



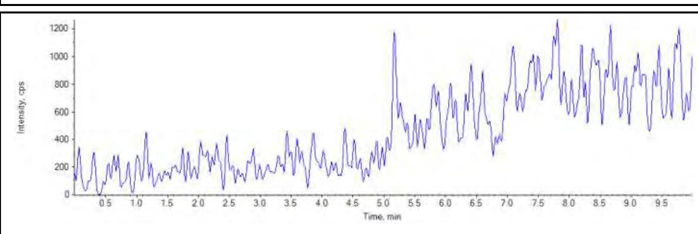
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 0.00 (7.38) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



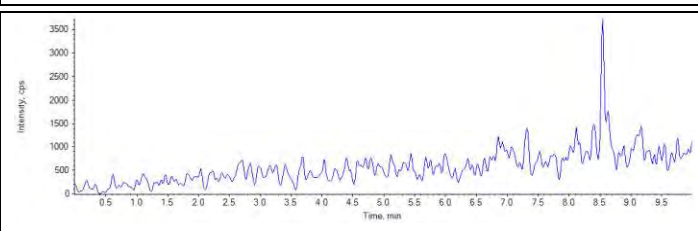
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 0.00 (7.74) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



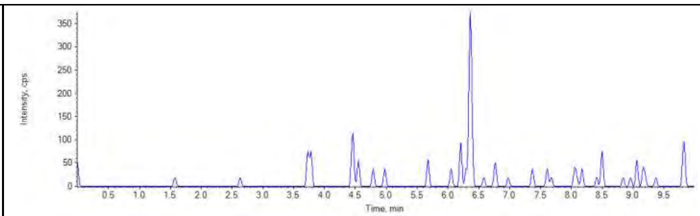
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 0.00 (6.29) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



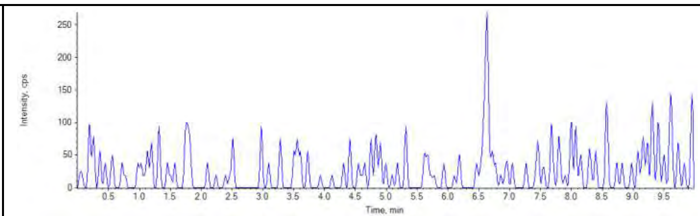
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 0.00 (6.66) min

Calculated Conc: N/A ng/L

Area Ratio: 0.00

Sample Type: (Quality Control)



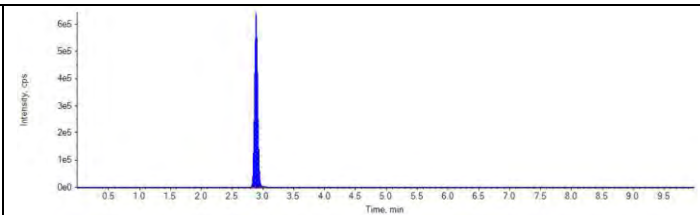
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.89 (2.96) min

Calculated Conc: 36.6 ng/L

Area Ratio: 1.14

Sample Type: (Quality Control)



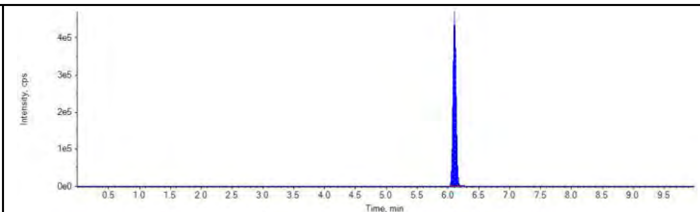
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.11 (6.19) min

Calculated Conc: 34.6 ng/L

Area Ratio: 0.793

Sample Type: (Quality Control)



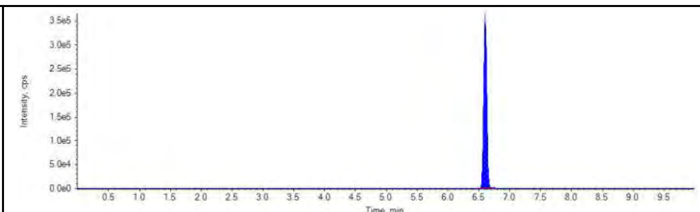
D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 157. ng/L

Area Ratio: 0.802

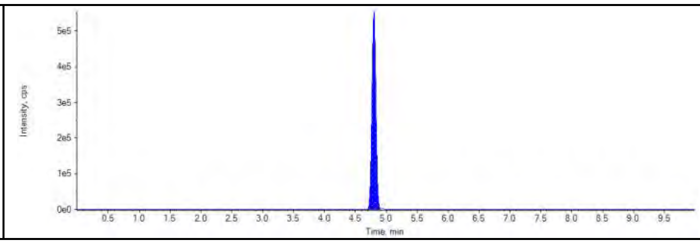
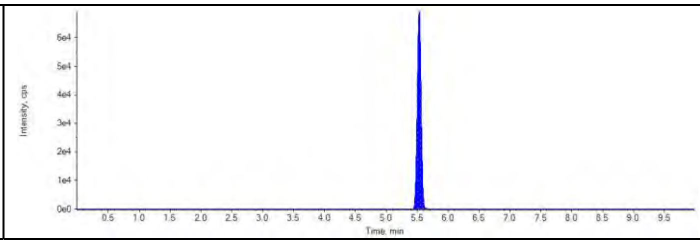
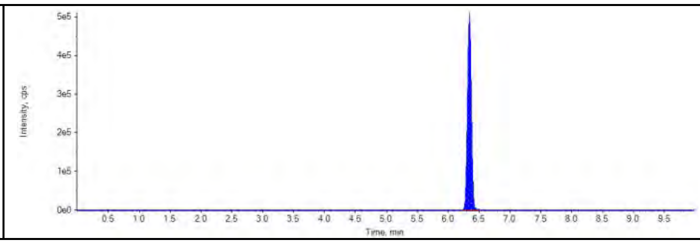
Sample Type: (Quality Control)



Sample ID	5907027~SPIKE	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	11
Acquisition Date	2019/01/03 2:55:44 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	-		

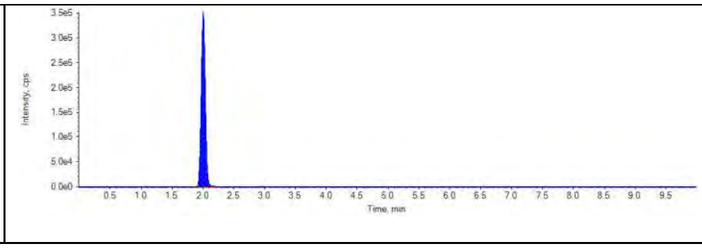
Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2440000.	4.80	1.00	-
MPFOS	307000.	5.53	1.00	-
D3-MeFOSAA IS	2180000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	1640000	2.01	50.0	40.4	80.7
PFHxA 1	3750000	2.90	50.0	45.6	91.3
PFHxS 1	971000	4.07	50.0	43.5	87.1
PFHpA 1	4420000	3.95	50.0	44.3	88.7
PFOA 1	3770000	4.81	50.0	45.5	91.1
PFOS 1	648000	5.54	50.0	47.5	95.1
PFNA 1	2590000	5.52	50.0	56.1	112.0
PFDA 1	2880000	6.12	50.0	45.8	91.5
PFUnA 1	2350000	6.62	50.0	46.6	93.2
PFDoA 1	2470000	7.05	50.0	44.6	89.2
PFTrDA 1	2440000	7.42	50.0	46.6	93.2
PFTeDA 1	2680000	7.74	50.0	44.0	87.9
MeFOSAA 1	2870000	6.36	200.	158.	79.1
EtFOSAA 1	2290000	6.61	200.	147.	73.6
13C2-PFHxA	2950000	2.89	40.0	38.8	97.0
13C2-PFDA	2000000	6.11	40.0	35.8	89.5
D5-EtFOSAA	1610000	6.60	160.	144.	90.1

MPFOA (Internal Standard) RT (Exp. RT): 4.80(4.84) min Concentration: 1.00 ng/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 5.53(5.38) min Concentration: 1.00 ng/L Sample Type: (Quality Control)	
D3-MeFOSAA IS (Internal Standard) RT (Exp. RT): 6.34(6.43) min Concentration: 1.00 ng/L Sample Type: (Quality Control)	

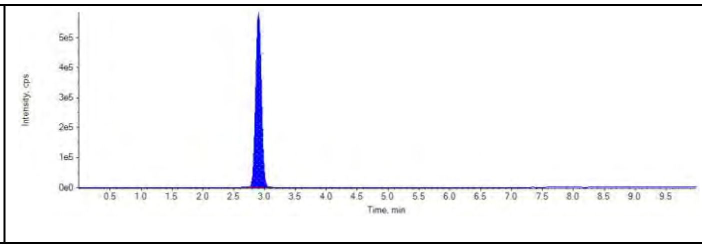
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT):	2.01 (1.85) min
Calculated Conc:	40.4 ng/L
Area Ratio:	5.36
Sample Type:	(Quality Control)



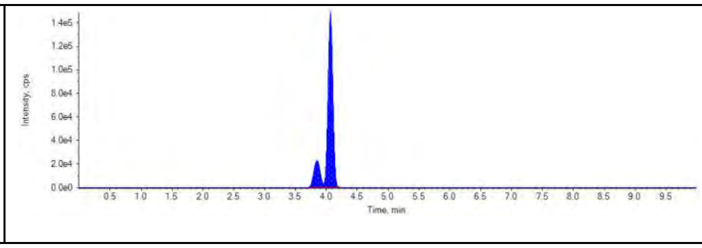
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT):	2.90 (2.97) min
Calculated Conc:	45.6 ng/L
Area Ratio:	1.54
Sample Type:	(Quality Control)



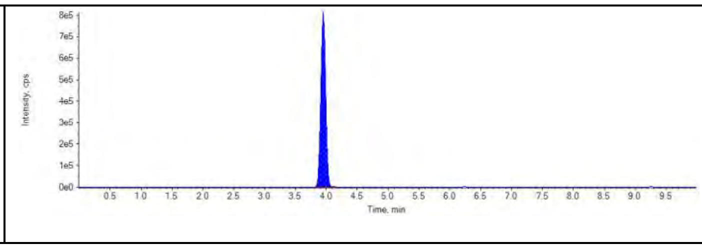
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT):	4.07 (4.00) min
Calculated Conc:	43.5 ng/L
Area Ratio:	3.17
Sample Type:	(Quality Control)



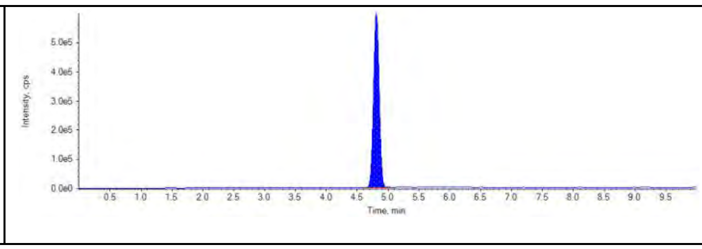
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT):	3.95 (3.91) min
Calculated Conc:	44.3 ng/L
Area Ratio:	1.82
Sample Type:	(Quality Control)



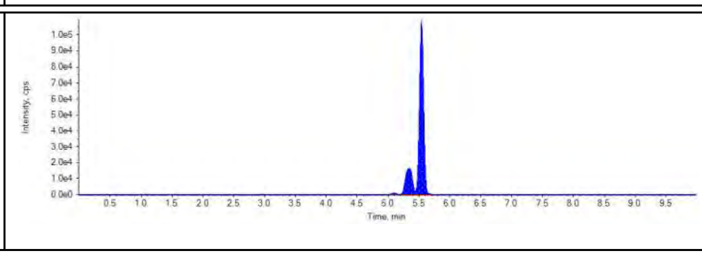
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT):	4.81 (4.89) min
Calculated Conc:	45.5 ng/L
Area Ratio:	1.55
Sample Type:	(Quality Control)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT):	5.54 (5.50) min
Calculated Conc:	47.5 ng/L
Area Ratio:	2.11
Sample Type:	(Quality Control)



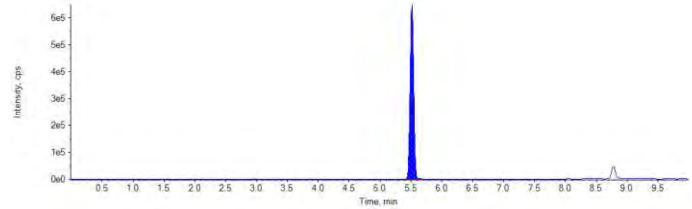
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.52 (5.49) min

Calculated Conc: 56.1 ng/L

Area Ratio: 1.06

Sample Type: (Quality Control)



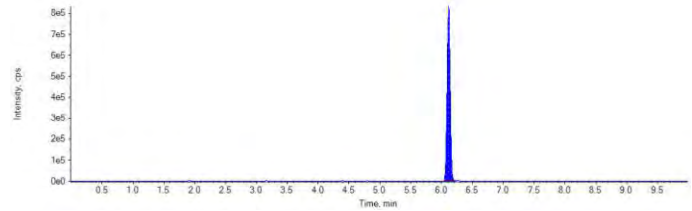
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.12 (6.07) min

Calculated Conc: 45.8 ng/L

Area Ratio: 1.18

Sample Type: (Quality Control)



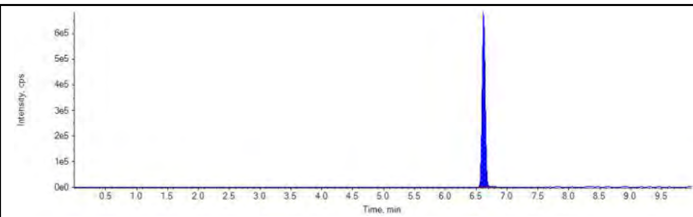
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.62 (6.62) min

Calculated Conc: 46.6 ng/L

Area Ratio: 0.967

Sample Type: (Quality Control)



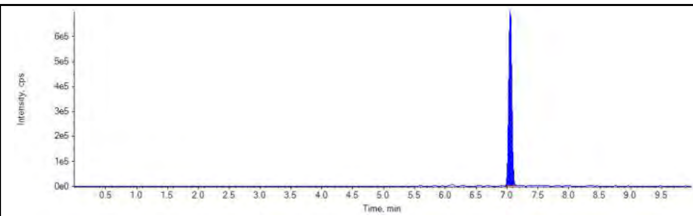
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.05 (7.04) min

Calculated Conc: 44.6 ng/L

Area Ratio: 1.01

Sample Type: (Quality Control)



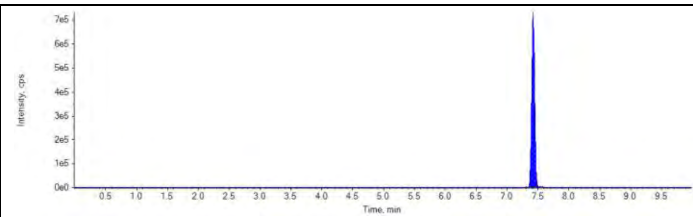
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.42 (7.38) min

Calculated Conc: 46.6 ng/L

Area Ratio: 1.00

Sample Type: (Quality Control)



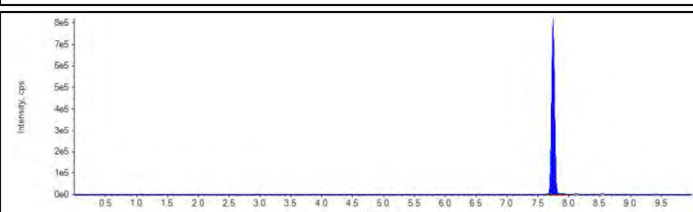
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.74 (7.74) min

Calculated Conc: 44.0 ng/L

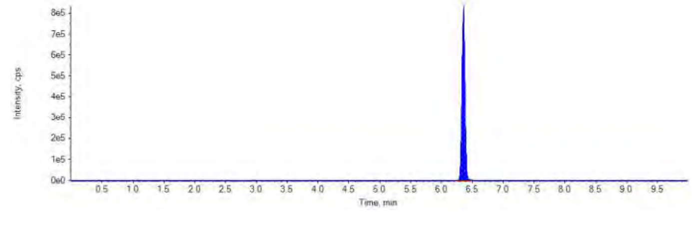
Area Ratio: 1.10

Sample Type: (Quality Control)



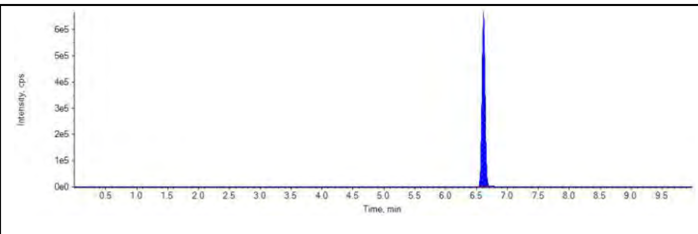
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT):	6.36 (6.29) min
Calculated Conc:	158. ng/L
Area Ratio:	1.31
Sample Type:	(Quality Control)



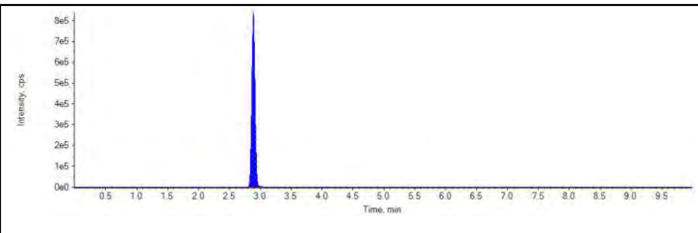
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT):	6.61 (6.66) min
Calculated Conc:	147. ng/L
Area Ratio:	1.05
Sample Type:	(Quality Control)



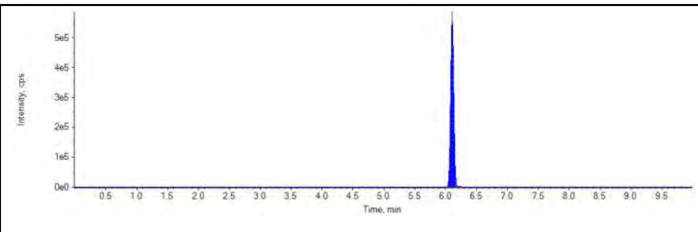
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT):	2.89 (2.96) min
Calculated Conc:	38.8 ng/L
Area Ratio:	1.21
Sample Type:	(Quality Control)



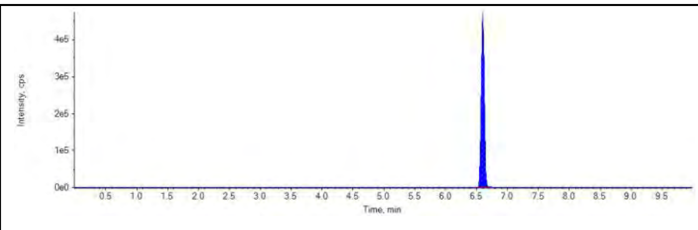
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT):	6.11 (6.19) min
Calculated Conc:	35.8 ng/L
Area Ratio:	0.820
Sample Type:	(Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT):	6.60 (6.68) min
Calculated Conc:	144. ng/L
Area Ratio:	0.736
Sample Type:	(Quality Control)



Created with Analyst Reporter
Printed: 09/01/2019 3:08:46 PM

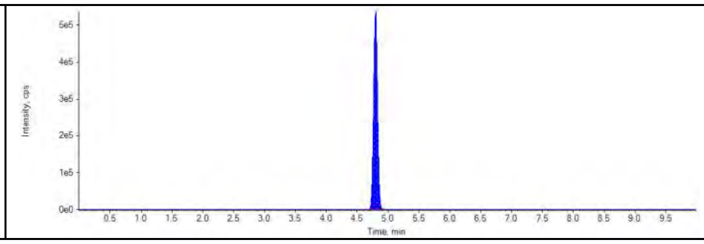
Sample ID	5907027~SPIKE:D1	**Injection Volume (μL)**	1.5
Sample Type	Quality Control	**Injection Vial**	12
Acquisition Date	2019/01/03 3:11:19 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injected to confirm IS recovery, reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	2400000.	4.80	1.00	-
MPFOS	306000.	5.53	1.00	-
D3-MeFOSAA IS	2020000.	6.34	1.00	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	1720000	2.00	50.0	42.2	84.5
PFHxA 1	3900000	2.90	50.0	48.2	96.5
PFHxS 1	934000	4.07	50.0	41.9	83.8
PFHpA 1	4420000	3.95	50.0	45.1	90.1
PFOA 1	3950000	4.81	50.0	48.5	96.9
PFOS 1	632000	5.54	50.0	46.4	92.8
PFNA 1	2570000	5.51	50.0	56.5	113.0
PFDA 1	2850000	6.11	50.0	45.9	91.9
PFUnA 1	2390000	6.62	50.0	48.1	96.1
PFDoA 1	2610000	7.05	50.0	48.0	96.0
PFTrDA 1	2250000	7.42	50.0	43.7	87.3
PFTeDA 1	2670000	7.75	50.0	44.5	88.9
MeFOSAA 1	2710000	6.36	200.	161.	80.7
EtFOSAA 1	2140000	6.61	200.	148.	74.2
13C2-PFHxA	3060000	2.89	40.0	40.9	102.0
13C2-PFDA	1970000	6.10	40.0	35.9	89.8
D5-EtFOSAA	1530000	6.60	160.	148.	92.3

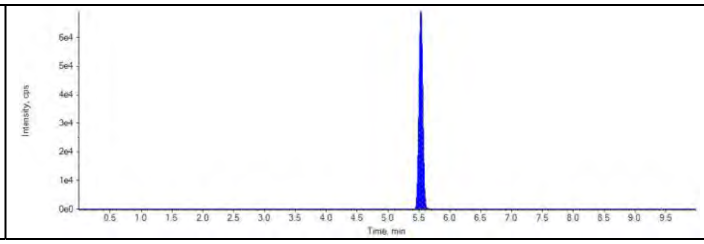
MPFOA (Internal Standard)

RT (Exp. RT): 4.80(4.84) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



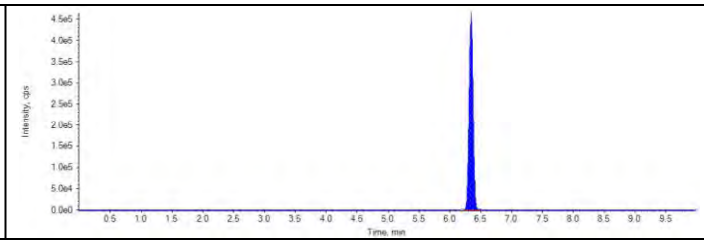
MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



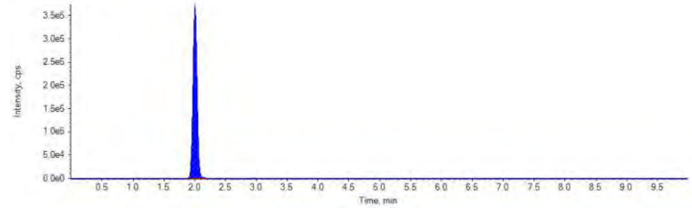
D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min
Concentration: 1.00 ng/L
Sample Type: (Quality Control)



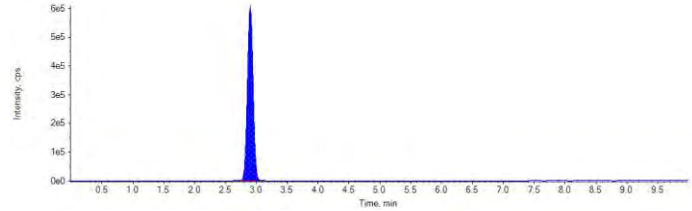
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 42.2 ng/L
Area Ratio: 5.60
Sample Type: (Quality Control)



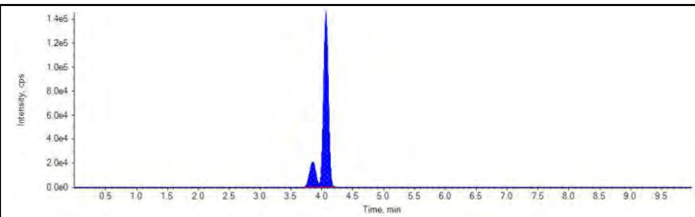
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 48.2 ng/L
Area Ratio: 1.63
Sample Type: (Quality Control)



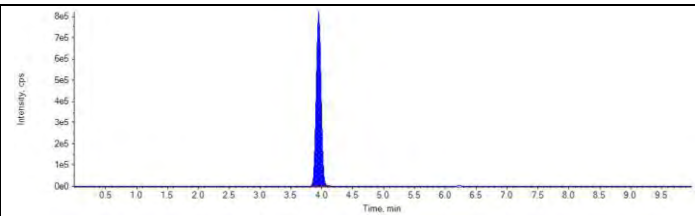
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.07 (4.00) min
Calculated Conc: 41.9 ng/L
Area Ratio: 3.05
Sample Type: (Quality Control)



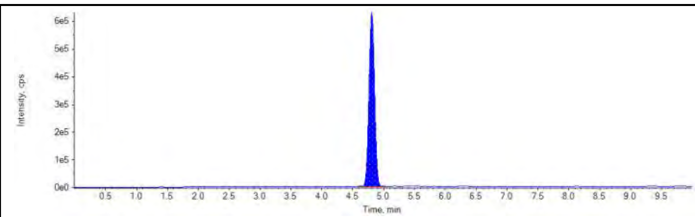
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 45.1 ng/L
Area Ratio: 1.85
Sample Type: (Quality Control)



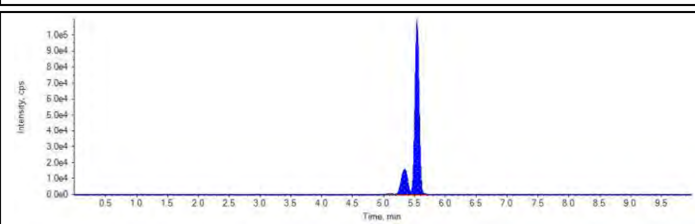
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 48.5 ng/L
Area Ratio: 1.65
Sample Type: (Quality Control)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 46.4 ng/L
Area Ratio: 2.06
Sample Type: (Quality Control)



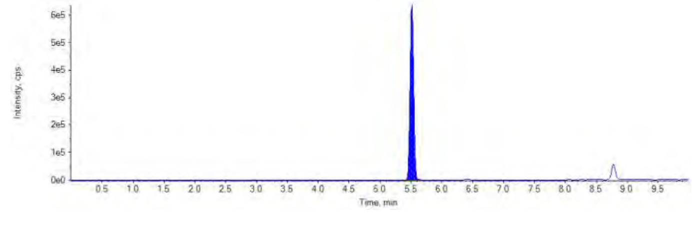
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.51 (5.49) min

Calculated Conc: 56.5 ng/L

Area Ratio: 1.07

Sample Type: (Quality Control)



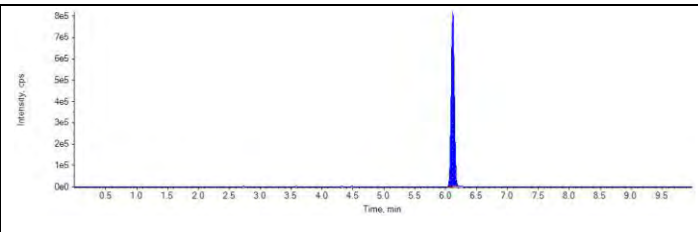
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.11 (6.07) min

Calculated Conc: 45.9 ng/L

Area Ratio: 1.19

Sample Type: (Quality Control)



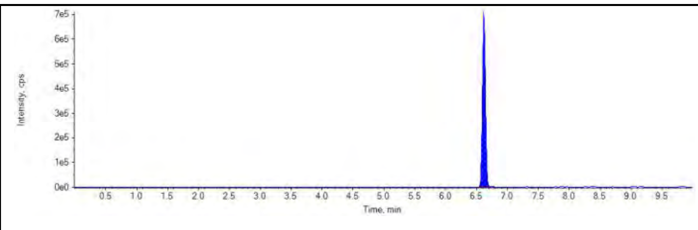
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.62 (6.62) min

Calculated Conc: 48.1 ng/L

Area Ratio: 0.997

Sample Type: (Quality Control)



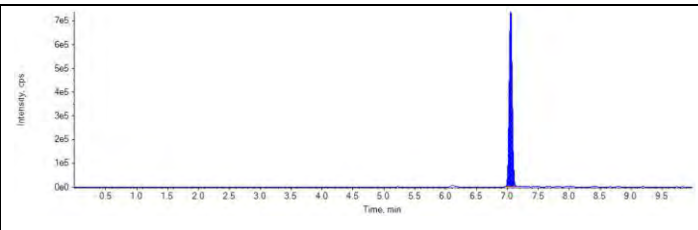
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.05 (7.04) min

Calculated Conc: 48.0 ng/L

Area Ratio: 1.09

Sample Type: (Quality Control)



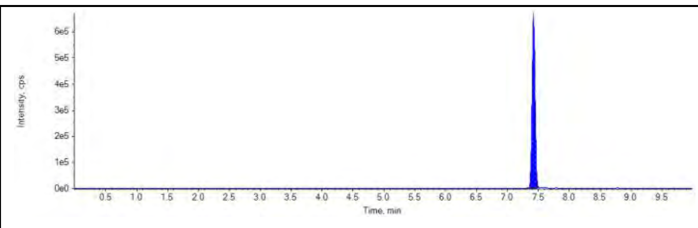
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.42 (7.38) min

Calculated Conc: 43.7 ng/L

Area Ratio: 0.939

Sample Type: (Quality Control)



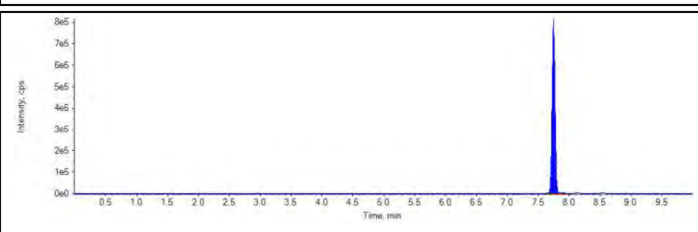
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.75 (7.74) min

Calculated Conc: 44.5 ng/L

Area Ratio: 1.11

Sample Type: (Quality Control)



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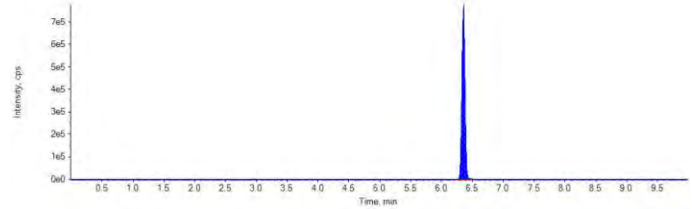
A Bureau Veritas Group Company

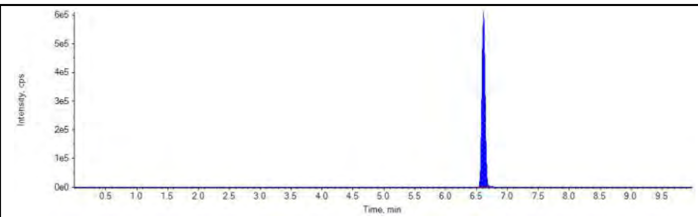
MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT):	6.36 (6.29) min
Calculated Conc:	161. ng/L
Area Ratio:	1.34
Sample Type:	(Quality Control)



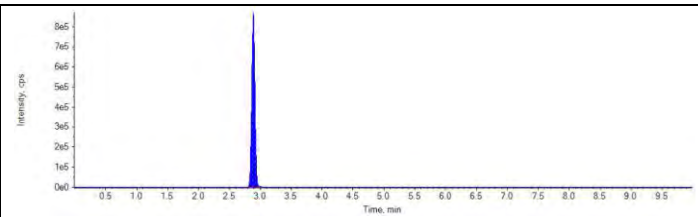
EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT):	6.61 (6.66) min
Calculated Conc:	148. ng/L
Area Ratio:	1.06
Sample Type:	(Quality Control)



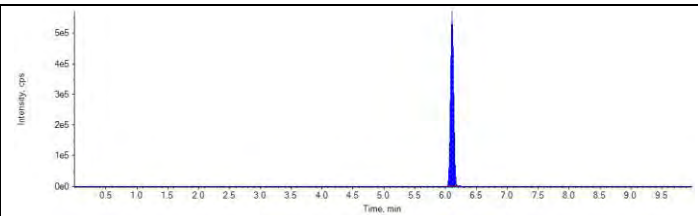
13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT):	2.89 (2.96) min
Calculated Conc:	40.9 ng/L
Area Ratio:	1.28
Sample Type:	(Quality Control)



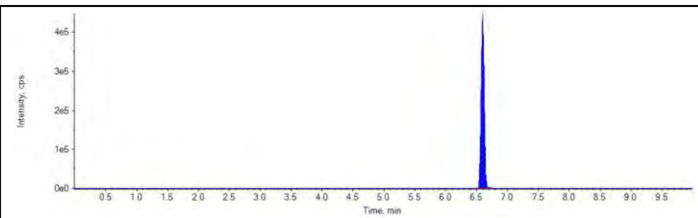
13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT):	6.10 (6.19) min
Calculated Conc:	35.9 ng/L
Area Ratio:	0.823
Sample Type:	(Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT):	6.60 (6.68) min
Calculated Conc:	148. ng/L
Area Ratio:	0.754
Sample Type:	(Quality Control)



Sample ID	5907027~SPIKE:D1	**Injection Volume (µL)**	1.5
Sample Type	Quality Control	**Injection Vial**	12
Acquisition Date	2019/01/04 2:47:00 PM	**Dilution Factor**	0.00400
Acquisition Method	PFC_Water_EPA537.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_181228\WS#5907027.wiff		
Result Table	PFC_Water_181231_5907027_EPA537_MI_EToxics.rdb		
Samples Annotation	Re-injection, not reported		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)
MPFOA	3350000.	4.79	1.00	-
MPFOS	415000.	5.53	1.00	-
D3-MeFOSAA IS	2850000.	6.34	1.00	-

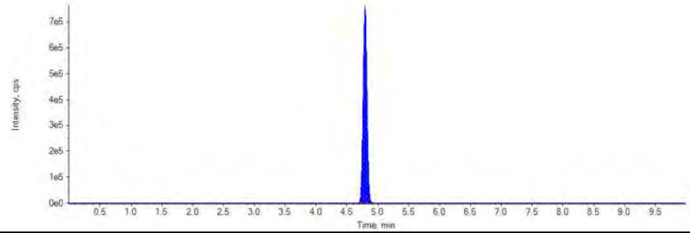
Target Analyte	Area (cps)	RT (min)	Target Conc. (ng/L)	Calc. Conc. (ng/L)	Accuracy (%)
PFBS 1	2280000	2.00	50.0	41.5	82.9
PFHxA 1	5220000	2.90	50.0	46.2	92.5
PFHxS 1	1180000	4.06	50.0	39.1	78.2
PFHpA 1	5850000	3.95	50.0	42.6	85.2
PFOA 1	5130000	4.81	50.0	44.9	89.9
PFOS 1	824000	5.54	50.0	44.7	89.4
PFNA 1	3430000	5.51	50.0	53.8	108.0
PFDA 1	3690000	6.11	50.0	42.6	85.2
PFUnA 1	3480000	6.62	50.0	50.0	100.0
PFDoA 1	3560000	7.05	50.0	46.8	93.6
PFTrDA 1	3200000	7.42	50.0	44.4	88.8
PFTeDA 1	3720000	7.75	50.0	44.3	88.7
MeFOSAA 1	3380000	6.35	200.	143.	71.5
EtFOSAA 1	2880000	6.61	200.	142.	71.1
13C2-PFHxA	3390000	2.88	40.0	32.4	81.0
13C2-PFDA	3030000	6.10	40.0	39.5	98.7
D5-EtFOSAA	2120000	6.60	160.	146.	91.2

MPFOA (Internal Standard)

RT (Exp. RT): 4.79(4.84) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

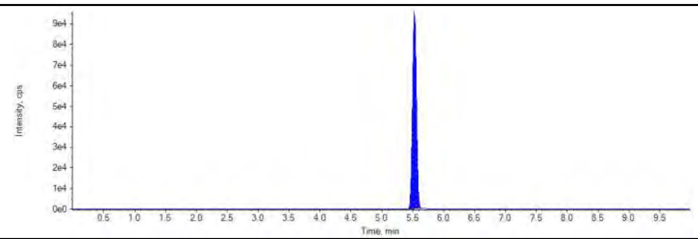


MPFOS (Internal Standard)

RT (Exp. RT): 5.53(5.38) min

Concentration: 1.00 ng/L

Sample Type: (Quality Control)

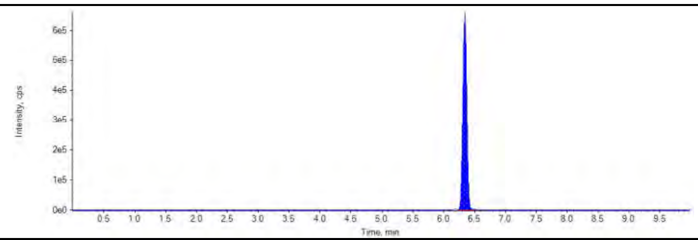


D3-MeFOSAA IS (Internal Standard)

RT (Exp. RT): 6.34(6.43) min

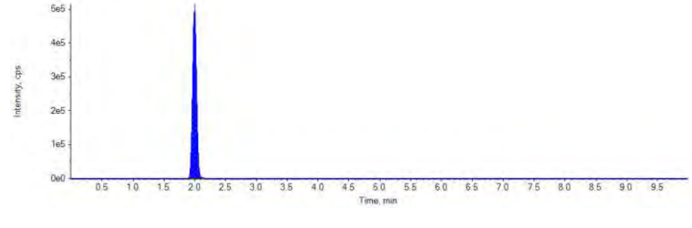
Concentration: 1.00 ng/L

Sample Type: (Quality Control)



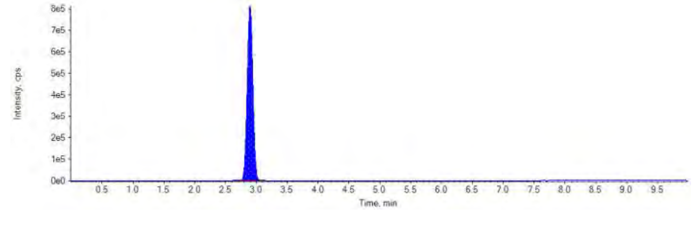
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 2.00 (1.85) min
Calculated Conc: 41.5 ng/L
Area Ratio: 5.50
Sample Type: (Quality Control)



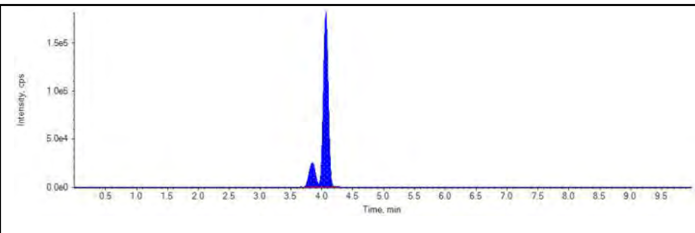
PFHxA 1 (313.000/269.000 Da)

RT (Exp. RT): 2.90 (2.97) min
Calculated Conc: 46.2 ng/L
Area Ratio: 1.56
Sample Type: (Quality Control)



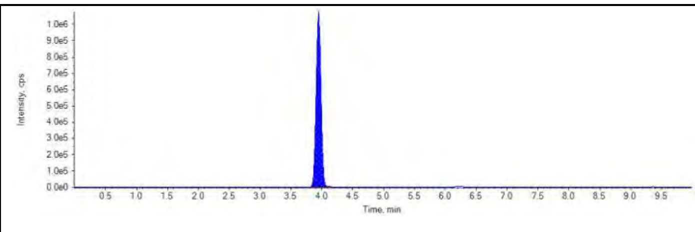
PFHxS 1 (398.900/79.900 Da)

RT (Exp. RT): 4.06 (4.00) min
Calculated Conc: 39.1 ng/L
Area Ratio: 2.84
Sample Type: (Quality Control)



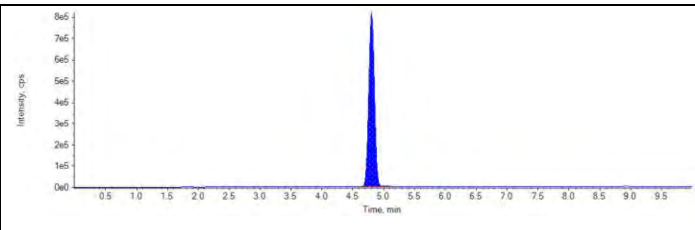
PFHpA 1 (363.000/319.000 Da)

RT (Exp. RT): 3.95 (3.91) min
Calculated Conc: 42.6 ng/L
Area Ratio: 1.74
Sample Type: (Quality Control)



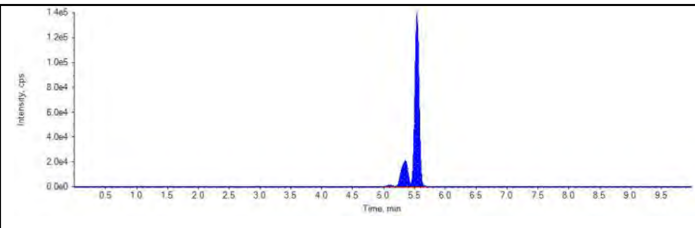
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 4.81 (4.89) min
Calculated Conc: 44.9 ng/L
Area Ratio: 1.53
Sample Type: (Quality Control)



PFOS 1 (498.800/79.900 Da)

RT (Exp. RT): 5.54 (5.50) min
Calculated Conc: 44.7 ng/L
Area Ratio: 1.99
Sample Type: (Quality Control)



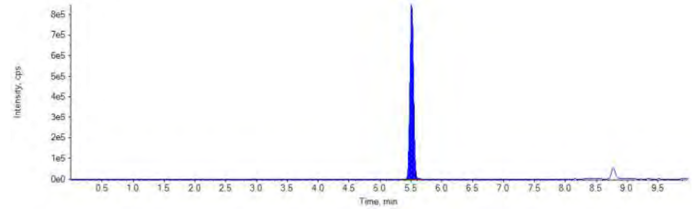
PFNA 1 (462.900/419.200 Da)

RT (Exp. RT): 5.51 (5.49) min

Calculated Conc: 53.8 ng/L

Area Ratio: 1.02

Sample Type: (Quality Control)



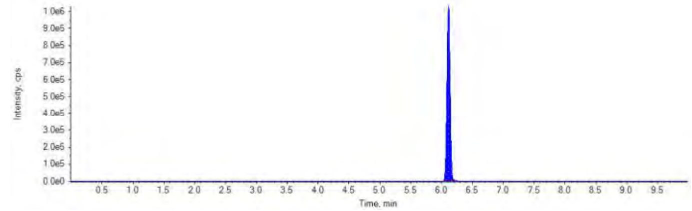
PFDA 1 (513.000/469.100 Da)

RT (Exp. RT): 6.11 (6.07) min

Calculated Conc: 42.6 ng/L

Area Ratio: 1.10

Sample Type: (Quality Control)



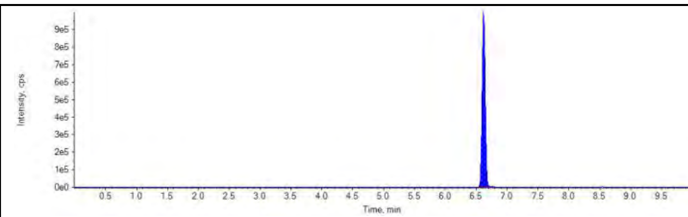
PFUnA 1 (562.900/519.000 Da)

RT (Exp. RT): 6.62 (6.62) min

Calculated Conc: 50.0 ng/L

Area Ratio: 1.04

Sample Type: (Quality Control)



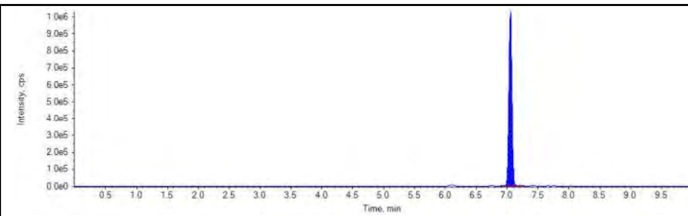
PFDoA 1 (612.900/569.000 Da)

RT (Exp. RT): 7.05 (7.04) min

Calculated Conc: 46.8 ng/L

Area Ratio: 1.06

Sample Type: (Quality Control)



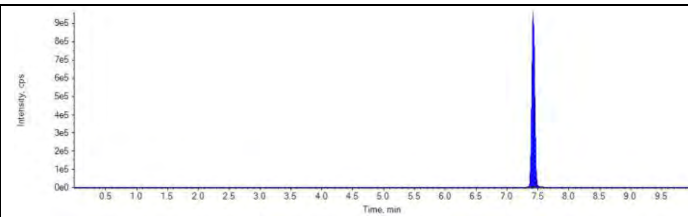
PFTrDA 1 (663.000/619.000 Da)

RT (Exp. RT): 7.42 (7.38) min

Calculated Conc: 44.4 ng/L

Area Ratio: 0.955

Sample Type: (Quality Control)



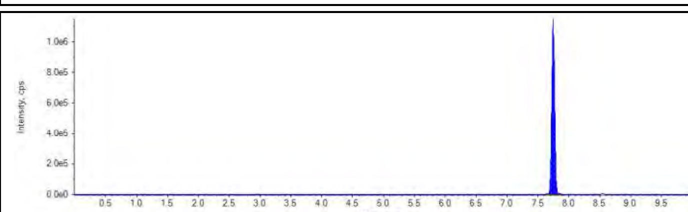
PFTeDA 1 (713.000/669.000 Da)

RT (Exp. RT): 7.75 (7.74) min

Calculated Conc: 44.3 ng/L

Area Ratio: 1.11

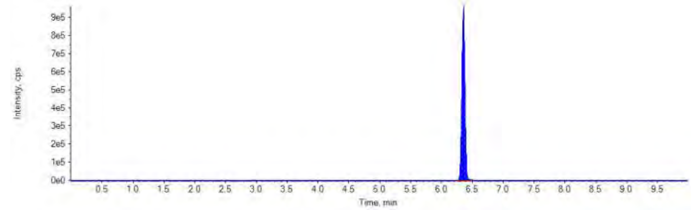
Sample Type: (Quality Control)



MeFOSAA 1 (570.100/419.100 Da)

RT (Exp. RT): 6.35 (6.29) min

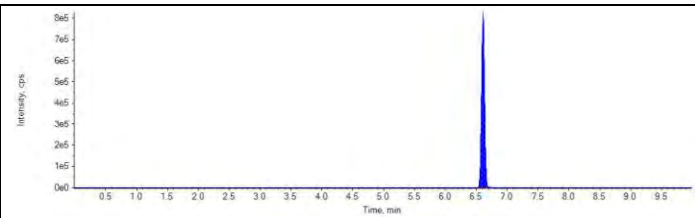
Calculated Conc: 143. ng/L
Area Ratio: 1.19
Sample Type: (Quality Control)



EtFOSAA 1 (584.100/419.100 Da)

RT (Exp. RT): 6.61 (6.66) min

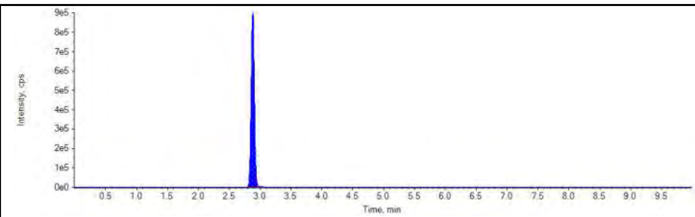
Calculated Conc: 142. ng/L
Area Ratio: 1.01
Sample Type: (Quality Control)



13C2-PFHxA (314.900/270.000 Da)

RT (Exp. RT): 2.88 (2.96) min

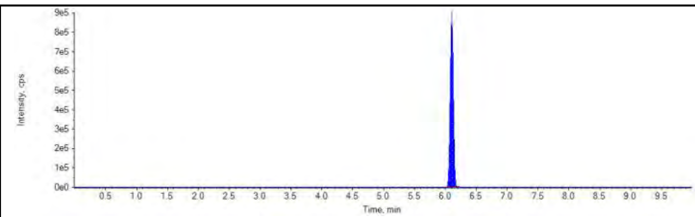
Calculated Conc: 32.4 ng/L
Area Ratio: 1.01
Sample Type: (Quality Control)



13C2-PFDA (514.900/470.000 Da)

RT (Exp. RT): 6.10 (6.19) min

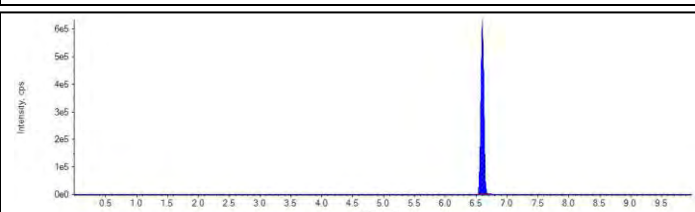
Calculated Conc: 39.5 ng/L
Area Ratio: 0.904
Sample Type: (Quality Control)



D5-EtFOSAA (589.200/419.000 Da)

RT (Exp. RT): 6.60 (6.68) min

Calculated Conc: 146. ng/L
Area Ratio: 0.745
Sample Type: (Quality Control)



Quantitation Results

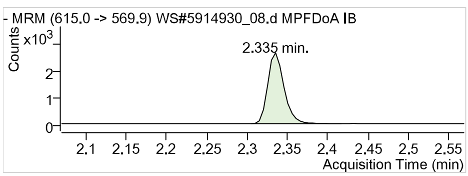
Agilent Technologies

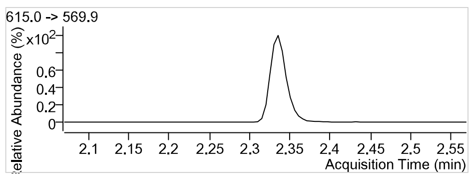
Batch Path	T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics

Sample Name	IB	**Instrument**	LCMS04
Data File	WS#5914930_08.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P3-D7
Acq. Date	2019/01/05 8:15:04 PM	**Injection Volume**	Per Method
Sample Annotation	-		

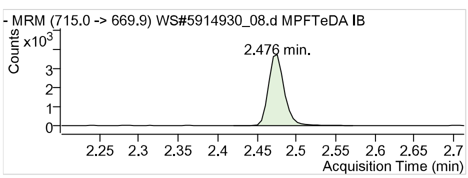
ISTD Compounds	Response	RT	Target conc.		
MPFDoA	3714	2.34	1 µg/L		
MPFTeDA	5139	2.48	1 µg/L		
13C9-PFDA IS	14644	2.15	1 µg/L		

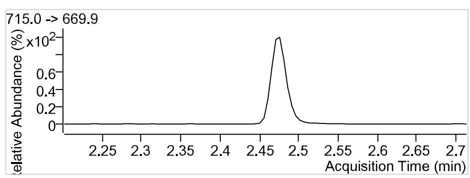
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFDoA	3714	2.34	-	91.54 µg/L	-
13C2-PFTeDA	5139	2.48	-	92.74 µg/L	-
13C9-PFDA	14644	2.15	-	2.46 µg/L	-



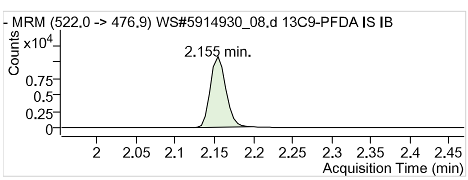


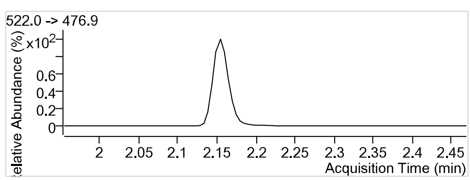
MPFDoA Internal Standard
RT (Exp. RT): 2.335 (2.335)
Concentration: 1 µg/L
Sample type: Sample



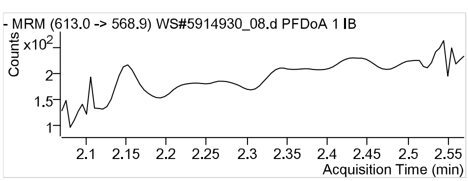


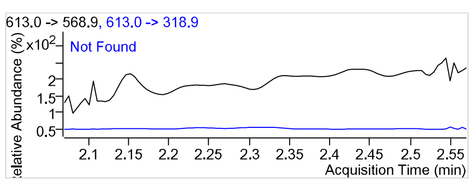
MPFTeDA Internal Standard
RT (Exp. RT): 2.476 (2.476)
Concentration: 1 µg/L
Sample type: Sample



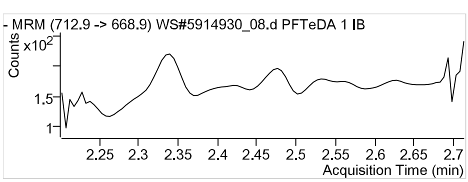


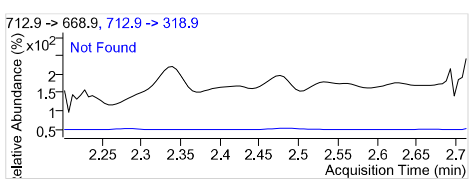
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.155 (2.155)
Concentration: 1 µg/L
Sample type: Sample



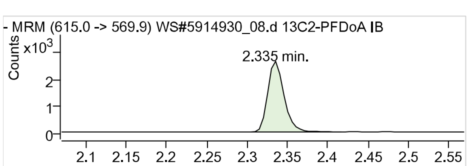


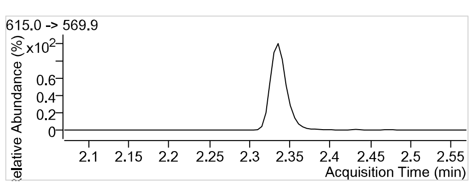
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.336)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



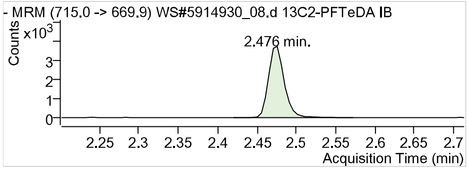


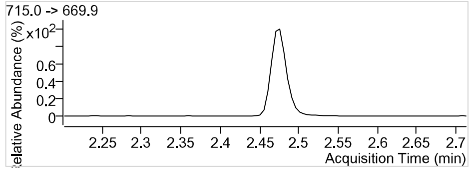
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.476)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



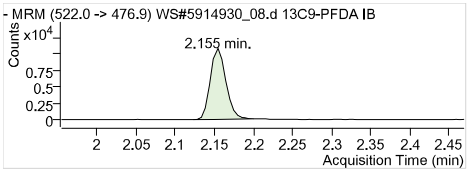


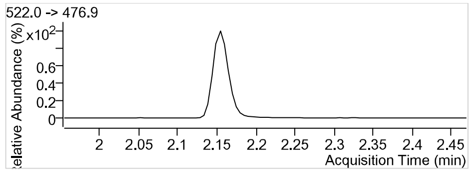
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.335 (2.335)
Calc. conc. 91.54 µg/L
Area ratio: 0.25362
Sample type: Sample





13C2-PFTeDA	715.0 -> 669.9
RT (Exp. RT):	2.476 (2.476)
Calc. conc.	92.74 µg/L
Area ratio:	0.35093
Sample type:	Sample





13C9-PFDA	522.0 -> 476.9
RT (Exp. RT):	2.155 (2.155)
Calc. conc.	2.46 µg/L
Area ratio:	0
Sample type:	Sample

Quantitation Results

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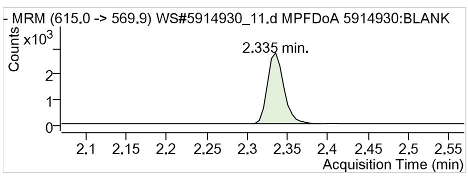
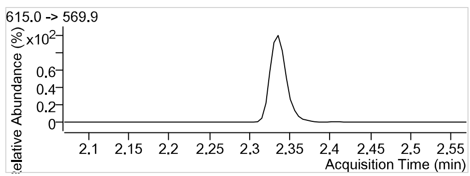
Batch Path	T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics		
Sample Name	**5914930:BLANK**	**Instrument**	LCMS04
Data File	WS#5914930_11.d	**Operator**	
Sample Type	Sample	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P3-D9
Acq. Date	2019/01/05 8:29:48 PM	**Injection Volume**	Per Method
Sample Annotation			

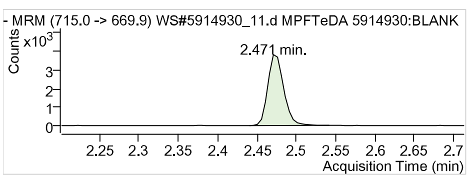
ISTD Compounds	Response	RT	Target conc.		
MPFDoA	3957	2.34	1 µg/L		
MPFTeDA	5225	2.47	1 µg/L		
13C9-PFDA IS	17130	2.15	1 µg/L		

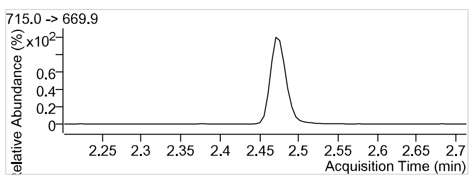
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1			-	ND	-
PFTeDA 1			-	ND	-
13C2-PFDoA	3957	2.34	-	83.37 µg/L	-
13C2-PFTeDA	5225	2.47	-	80.61 µg/L	-
13C9-PFDA	17130	2.15	-	2.88 µg/L	-



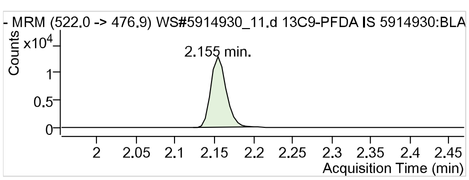


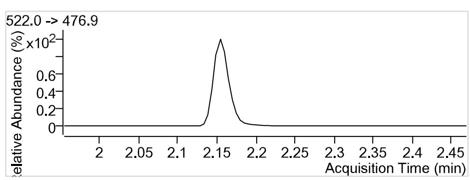
MPFDoA Internal Standard
RT (Exp. RT): 2.335 (2.335)
Concentration: 1 µg/L
Sample type: Sample



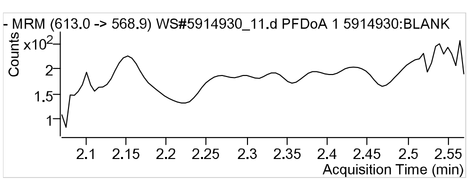


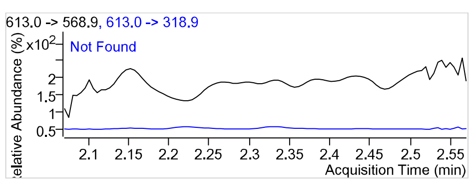
MPFTeDA Internal Standard
RT (Exp. RT): 2.471 (2.476)
Concentration: 1 µg/L
Sample type: Sample



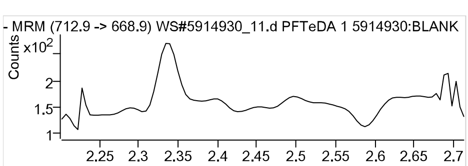


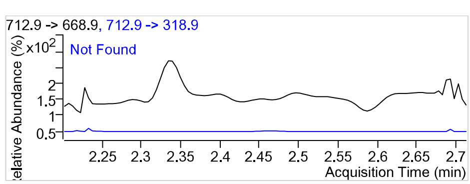
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.155 (2.155)
Concentration: 1 µg/L
Sample type: Sample



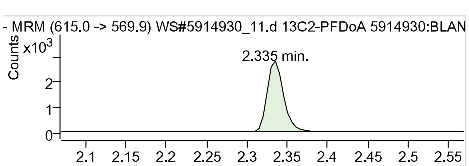


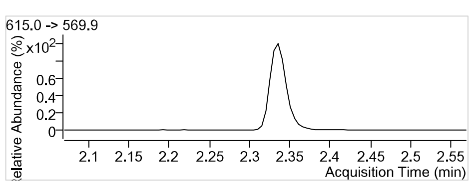
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.336)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample





PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.476)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample





13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.335 (2.335)
Calc. conc. 83.37 µg/L
Area ratio: 0.23100
Sample type: Sample

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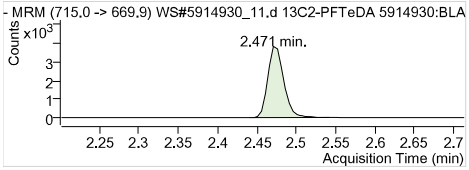
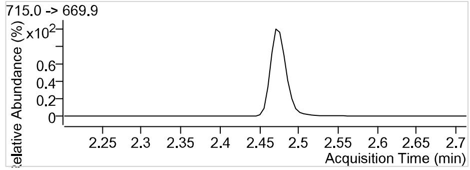
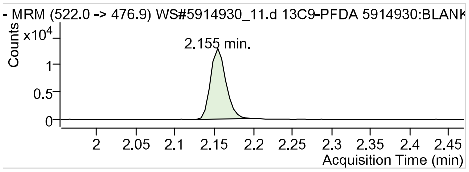
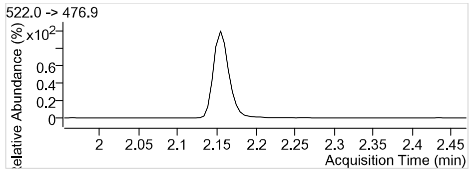




13C2-PFTeDA 715.0 -> 669.9
RT (Exp. RT): 2.471 (2.476)
Calc. conc. 80.61 µg/L
Area ratio: 0.30502
Sample type: Sample





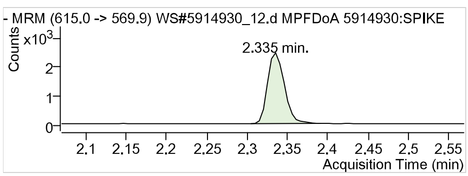
13C9-PFDA 522.0 -> 476.9
RT (Exp. RT): 2.155 (2.155)
Calc. conc. 2.88 µg/L
Area ratio: 0
Sample type: Sample

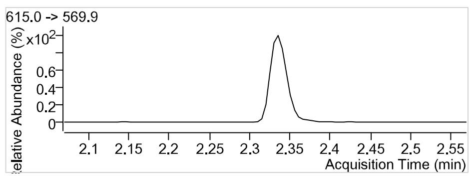
Batch Path	T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics

Sample Name	**5914930:SPIKE**	**Instrument**	LCMS04
Data File	WS#5914930_12.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P3-E1
Acq. Date	2019/01/05 8:34:43 PM	**Injection Volume**	Per Method
Sample Annotation	-		

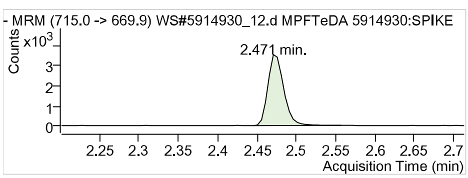
ISTD Compounds	Response	RT	Target conc.		
MPFDoA	3536	2.34	1 µg/L		
MPFTeDA	4861	2.47	1 µg/L		
13C9-PFDA IS	14264	2.15	1 µg/L		

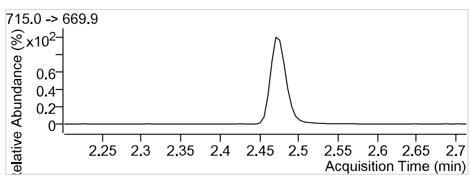
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1	33266	2.33	20.80	0.48 µg/L	96.47
PFTeDA 1	41784	2.47	20.80	0.48 µg/L	96.25
13C2-PFDoA	3536	2.34	100.00	89.47 µg/L	89.47
13C2-PFTeDA	4861	2.47	100.00	90.06 µg/L	90.06
13C9-PFDA	14264	2.15	100.00	2.39 µg/L	99.76



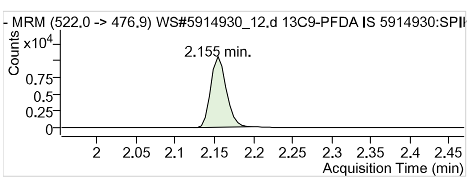


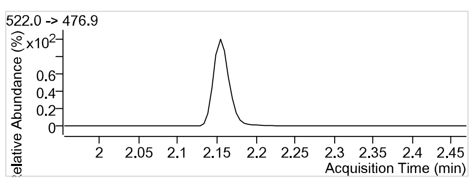
MPFDoA Internal Standard
RT (Exp. RT): 2.335 (2.335)
Concentration: 1 µg/L
Sample type: QC



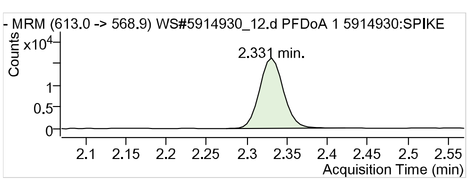


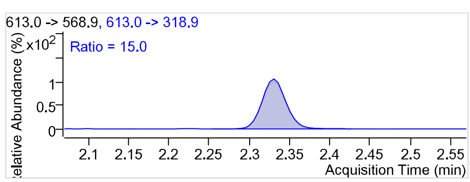
MPFTeDA Internal Standard
RT (Exp. RT): 2.471 (2.476)
Concentration: 1 µg/L
Sample type: QC



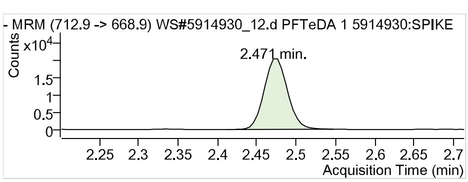


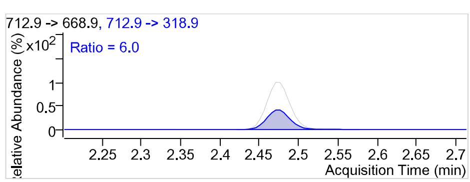
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.155 (2.155)
Concentration: 1 µg/L
Sample type: QC



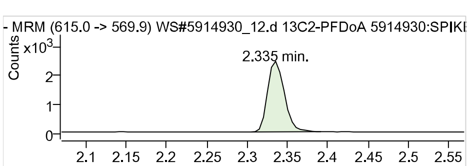


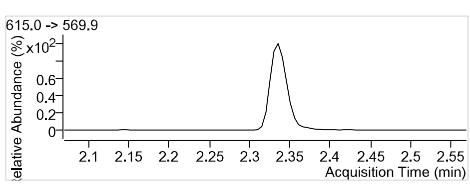
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 2.331 (2.336)
Calc. conc. 0.48 µg/L
Area ratio: 9.40781
Sample type: QC



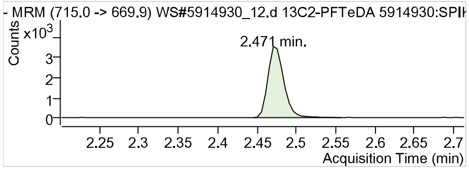


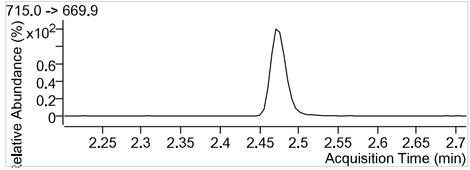
PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 2.471 (2.476)
Calc. conc. 0.48 µg/L
Area ratio: 8.59576
Sample type: QC





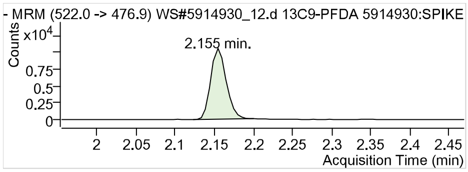
13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.335 (2.335)
Calc. conc. 89.47 µg/L
Area ratio: 0.24790
Sample type: QC

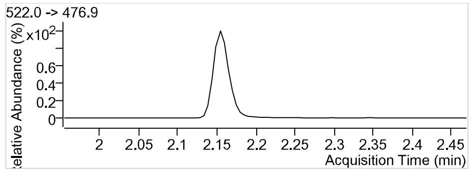




13C2-PFTeDA 715.0 -> 669.9

RT (Exp. RT):	2.471 (2.476)
Calc. conc.	90.06 µg/L
Area ratio:	0.34079
Sample type:	QC





13C9-PFDA 522.0 -> 476.9

RT (Exp. RT):	2.155 (2.155)
Calc. conc.	2.39 µg/L
Area ratio:	0
Sample type:	QC

Quantitation Results

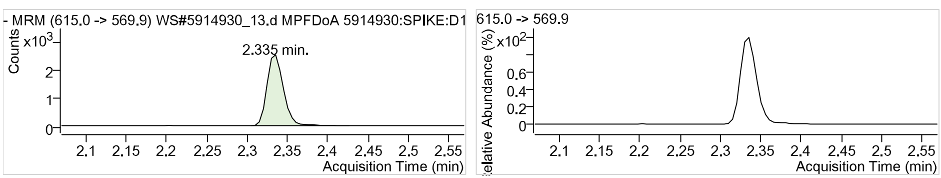
Agilent Technologies

Batch Path T:\LCMS04\PFC\20190105\WS#5914930\QuantResults\PFC_Water_Low_190105_WS#5914930_EToxics

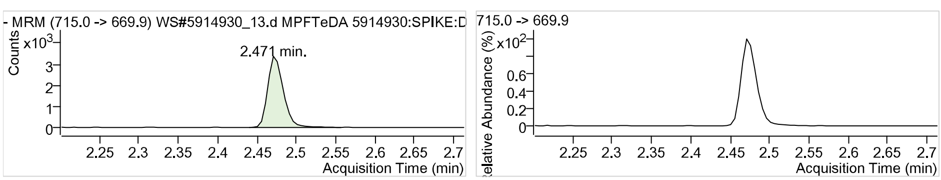
Sample Name	**5914930:SPIKE:D1**	**Instrument**	LCMS04
Data File	WS#5914930_13.d	**Operator**	
Sample Type	QC	**Dilution**	0.024
Acq. Method	PFC_Water_Low.m	**Position**	P3-E2
Acq. Date	2019/01/05 8:39:37 PM	**Injection Volume**	Per Method
Sample Annotation	-		

ISTD Compounds	Response	RT	Target conc.		
MPFDoA	3505	2.34	1 µg/L		
MPFTeDA	4591	2.47	1 µg/L		
13C9-PFDA IS	14923	2.15	1 µg/L		

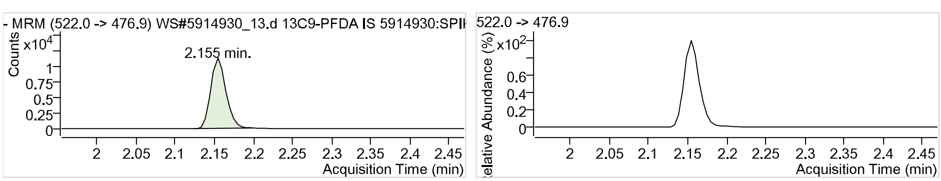
Compound	Response	RT	Target Conc.	Calc. Conc.	Accuracy
PFDoA 1	34552	2.33	20.80	0.50 µg/L	101.07
PFTeDA 1	41012	2.47	20.80	0.50 µg/L	100.02
13C2-PFDoA	3505	2.34	100.00	84.77 µg/L	84.77
13C2-PFTeDA	4591	2.47	100.00	81.30 µg/L	81.30
13C9-PFDA	14923	2.15	100.00	2.50 µg/L	104.37



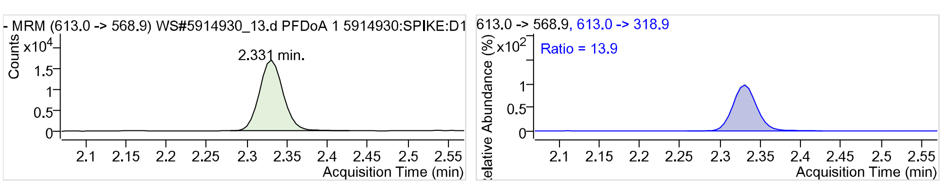
MPFDoA Internal Standard
RT (Exp. RT): 2.335 (2.335)
Concentration: 1 µg/L
Sample type: QC



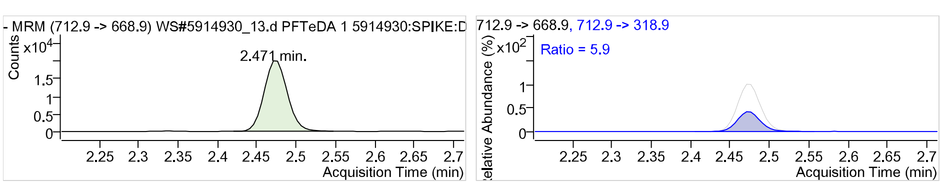
MPFTeDA Internal Standard
RT (Exp. RT): 2.471 (2.476)
Concentration: 1 µg/L
Sample type: QC



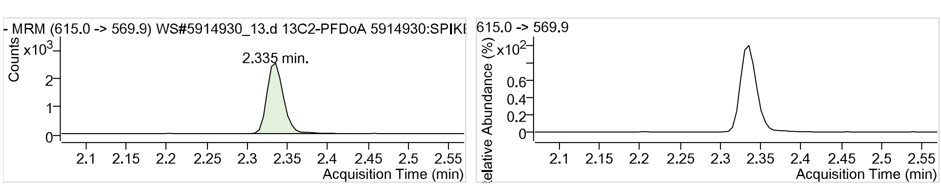
13C9-PFDA IS Internal Standard
RT (Exp. RT): 2.155 (2.155)
Concentration: 1 µg/L
Sample type: QC



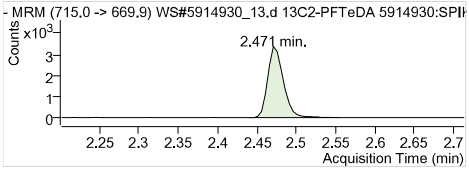
PFDoA 1 613.0 -> 568.9
RT (Exp. RT): 2.331 (2.336)
Calc. conc. 0.50 µg/L
Area ratio: 9.85792
Sample type: QC

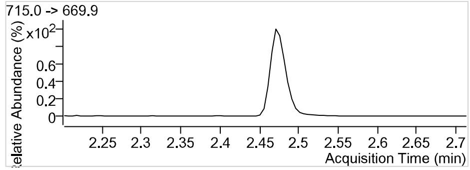


PFTeDA 1 712.9 -> 668.9
RT (Exp. RT): 2.471 (2.476)
Calc. conc. 0.50 µg/L
Area ratio: 8.93313
Sample type: QC



13C2-PFDoA 615.0 -> 569.9
RT (Exp. RT): 2.335 (2.335)
Calc. conc. 84.77 µg/L
Area ratio: 0.23487
Sample type: QC





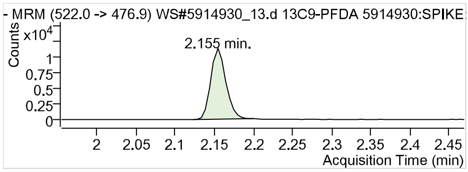
13C2-PFTeDA 715.0 -> 669.9

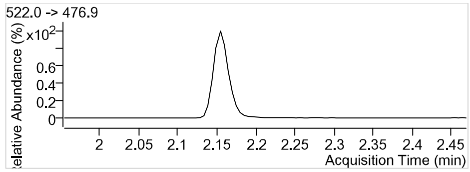
RT (Exp. RT): 2.471 (2.476)

Calc. conc. 81.30 µg/L

Area ratio: 0.30765

Sample type: QC





13C9-PFDA 522.0 -> 476.9

RT (Exp. RT): 2.155 (2.155)

Calc. conc. 2.50 µg/L

Area ratio: 0

Sample type: QC

DoD Projects - Internal Data Validation Checklist

Run date: 2018/12/21

Worksheet # (s): 5897102

Analysis: PFOSALCM-W

Primary review by the analyst - 1st 100 % analysis review

#	Item	1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria	✓			✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, SRM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria		✓		✓
8	Method Blank meets acceptance criteria	✓			✓
9	Matrix Spike recovery(s) meets acceptance criteria	✓			✓
10	Duplicate precision meets acceptance criteria	✓			✓
11	QC is documented on the run logs	✓			✓
12	Runs checked for carryover	✓			✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed			✓	✓
17	Dilution factors (where justified) have been checked for correctness and entered	✓			✓
18	Analytical observations/anomalies documented in LIMS			✓	✓
19	Random calculation checked and in correct units	✓			✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated	✓			✓
22	Transferred data is validated in LIMS for correctness	✓			✓
23	Data package assembled (where required)	✓			✓

Reviewed by: AKH | Date: 2019/01/03

Comments:

Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review

#	Item	yes	no	n/a
1	Repeats documented and referenced	✓		
2	Method and sample deviations noted, anomalies described (if applicable)	✓		
3	Data and QC validated in LIMS	✓		
4	Random calculation checked	✓		
5	Benchsheet (s) signed and dated	✓		
6	Data Package (if required) checked for completeness	✓		

Reviewed by: [signature] | Date: 2019/01/04

Comments: Samples IOF232 and IOF233 were re-analyzed due to extracted internal standard recoveries not ~~being~~ meeting criteria

M 2019/01/04

[signature] 2019/01/04

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5897102 | Testcode: PFOSA LCM-W

Sample Preparation		yes	no	n/a
1	Samples extracted within hold time	✓		
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	✓		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded	✓		
9	Matrix spike / Duplicate performed on IOL samples if present			✓
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	✓		
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			✓
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.	✓		
15	Worksheet and reagent tracking record completed and authorized.	✓		

Reviewed by: KPG | Date: 2018/12/19

Comments:

Worksheet Approval		yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

AKA 2019/01/07

Reviewed by: | Date:

Comments:

Worksheet Validation		yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: | Date:

Comments:

WS# : 5897102

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Wednesday, December 19, 2018

Assigned to : Kevalkumar Patel

Test Code : PFOSALCM-W

Instrument Id:

Test Description : PFOS and PFOA in water by LC-MS/MS

sediment (cm) (ml) (ml) KPG 2018/12/19

	Job Number	Sample Number	D	Sample ID	F	% ~~Moisture~~	~~Wt~~ or Vol	Final Vol	DF or AF	# Cont	Expiry Date ✓	Test DeadLine ✓	Criteria	Extract Date
7-9		MTRX SPK	0	PFOS IOF254-01		<0.1	264	6	1x					2018/12/19
7-10		MTRX SPK	1	PFOS IOF254-01		<0.1	258	6	1x					2018/12/19
7-7		SPIKE		PFOS		0.0	125	3	1x					2018/12/19
7-5		BLANK				0.0	125	3	1x					2018/12/19
7-22	B8X5580	*IOF231-01R		GP001		<0.1	270	6	1x	2	2018/12/19	2018/12/31 23:00	DOD	2018/12/19
7-23	B8X5580	*IOF232-01R		GP002		<0.1	25	6	10x	2	2018/12/19	2018/12/31 23:00	DOD	2018/12/19
7-24	B8X5580	*IOF233-01R		GP003		<0.1	25	6	10x	2	2018/12/19	2018/12/31 23:00	DOD	2018/12/19
8-1	B8X5580	*IOF234-01R		GP004		<0.1	270	6	1x	2	2018/12/19	2018/12/31 23:00	DOD	2018/12/19
8-3	B8X5580	*IOF236-01R		GP006		<0.1	258	6	1x	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/19
8-5	B8X5580	*IOF237-01R		GP007		<0.1	268	6	1x	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/19
8-7	B8X5580	*IOF238-01R		GP008		<0.1	268	6	1x	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/19
8-9	B8X5580	*IOF239-01R		GP009		<0.1	250	6	1x	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/19
8-11	B8X5580	*IOF254-01R		GP024		<0.1	250	6	1x	4	2018/12/21	2018/12/31 23:00	DOD	2018/12/19

KPG 2018/12/19

Remarks: IOF232 & IOF233 : For these samples only did 10x dilution as per Adam suggested. Samples had floating sediments.

Samples extracted by: Kevalkumar Patel KPG 2018/12/19

Instrumentation performed by: [signature] Date: 2018/12/21

Calculations performed by: A.K.H Date: 2019/01/03

Validated by: [signature] Date: 2019/01/04

WS#: **5897102** Test Code: **PFOSALCM-W** Page #: 2/2

Job No.	Rep / Remarks	Client Name	Contact	Client Tier	National
GB8X5580	SP8	Earth Toxics Inc	Brian Nagy	Tier 5 (Enviro.)	AECOM

DKN, nreg, PFOSALCM-W/PFAADW-W Standard Navy 14 PFAS MS/MSD required on IOF242, IOF247, IOF254
Sample: GP005 placed on HOLD as per client request SP8 18/12/19 Project #: N62742-12-D-1829

KPG 2018/12/19

Job	Sample	Lab Comments
	MTRX SPK	
	MTRX SPK	
	SPIKE	
	BLANK	
B8X5580	IOF231-01R	
B8X5580	IOF232-01R	
B8X5580	IOF233-01R	
B8X5580	IOF234-01R	
B8X5580	IOF236-01R	All the Samples were received in non-standard container.
B8X5580	IOF237-01R	
B8X5580	IOF238-01R	
B8X5580	IOF239-01R	
B8X5580	IOF254-01R	

folder: 20181221
AKH
2019/01/02

HPLC/LCMS Calibration Standard Preparation Sheet

Worksheet : 5897102

PFOSALCM-W (SPE)/ PFOSLOW-W					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	2825	25			150
S2	2800	50	100 ng/mL	SK-8290	150
S3	2700	150			150
S4	2813	37.5			150
S5	2775	75	1 ug/mL	I-5563	150
S6	2725	~~12.5~~ 125			150
ICV	2788	62.5	1 ug/mL	I-5562	150
IB	2850	NA			150

PFOSALCM-W (High)						
Calibration Standard	Volume of MeOH (uL)	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	480	0.75	20			100
S2	463	0.75	37.5	30 ng/mL		100
S3	485	0.75	15			100
S4	463	0.75	37.5	300 ng/mL		100
S5	478	0.75	22.5	1 ug/mL		100
S6	463	0.75	37.5			100
ICV	500	0.75	18	1 ug/mL		100
IB	500	0.75	NA			100

PFOSALCM-S					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1885	15			100
S2	1870	30	100 ng/mL		100
S3	1810	90			100
S4	1878	22.5			100
S5	1855	45	1 ug/mL		100
S6	1825	75			100
ICV	1863	37.5	1 ug/mL		100
IB	1900	NA			100

PFC-TI					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1890	10			100
S2	1880	20	100 ng/mL		100
S3	1840	60			100
S4	1885	15			100
S5	1870	30	1 ug/mL		100
S6	1850	50			100
ICV	1875	25	1 ug/mL		100

CLO4LCMS-W/ CLO4LCMS-S				
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#
S1	9.95	50		
S2	9.9	100		
S3	9.75	250	10ug/L	
S4	9.5	500		
S5	9	1000		
S6	8	2000		
ICV	1	1000	10 ug/L	

MORPH-L					
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1	20	200 ug/L		50
S2	1	50			50
S3	1	20	2500 ug/L		50
S4	1	80			50
S5	1	200			50
S6	1	400			50
ICV	1	80	2500 ug/L		50

STERIL-S					
Calibration Standard	Volume of 60: 40 Water : MEOH (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	5	20	*****		50
S2	5	30	Solution B		50
S3	5	40			50
S4	5	80			50
S5	5	22	*****		50
S6	5	40	Solution A		50
ICV	5	20	*****		50

GLYPHO-LIQ/ GLYPHOLO-S				
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#
S1	2	8		
S2	2	20		
S3	2	40	2.5 ug/mL	
S4	2	60		
S5	2	80		
ICV	2	40	2.5 ug/mL	

***** Concentration of individual parameters in Solution A & Solution B varies

Witnessed by : GSZ

Worksheet Reagent Tracking Record

Worksheet # 5897102

Surrogate/Spike solutions	√	Solution ID #	Conc.	Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
				Volume (µL)					
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
Comp. PFC Working Solution A	✓	I-5562(1/3)	1ug/mL	75	21 62.5	75	21 62.5	NA	NA
PFC Internal Standard Solution	✓	SI-7291(2/4) GSZ	50/125 ng/mL	200	100 150	200	100 ~~150~~ 300	200	100/~~150~~ 300
PFC Injection IS	✓	SI-7239(4/4) GSZ	100 ~~400~~ ng/mL	20	20	20	20	20	20
ICV	✓	I-5562(1/3)	1 µg/ml		62.5				

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared
DCM				50% NaOH			
Ottawa Sand				o-Phosphoric Acid			
Methanol	✓	SHBK1963	2018/12/19	Borax			
2-Propanol (IPA)				Calcium Chloride			
Acetonitrile				EDTA			
Sodium Sulfate				Phosphate Buffer			
70:30 Methanol: Water				Sodium Thiosulphate			
60:40 Water: Methanol	✓	PRLRE-	124-168	DNPH			
DCM:Ethyl Ether (75:25)				FMOC			
Hexane:IPA (98:2)				5M Acetate Buffer			
2% Formic Acid	✓	PRLRE-	124-169	0.2% NH_4OH	✓	PRLRE-	124-171
0.2% Formic Acid				Leachate Fluid			
0.05M KOH				Reagent Water	✓	58248	2018/12/19
0.05M HCl							
Envi Carb	✓	107564					

*Spiked by:	KPC
Spike Date	2018/12/19
Spike Syringe/Pipette ID#	M23487B
Int. Std Syringe/Pipette ID#	Q40174G
*Spiking Witnessed by:	GSZ
Final pH	

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #
Pipettor K52290G K19865F	✓	SPE Cartridge	00438246A	✓	QC Balance ID	FC-1
	✓	Filter			Thermometer ID &Temp	
Dispenser		Centrifuge	42148683	✓		
		Sonicator				

Bottle Tracking	
Bottle#	20264
Cap#	20259
Systems plus Lot#	18-11-13

Comments: 250 ml Volumetric cylinder (#30627)

* - SPIKING OF QC's & SAMPLES MUST BE WITNESSED AT ALL TIMES.

Bench Level Planned Deviation / Non-Conformance Form

Date: 2019/01/04

Affected SOP #, and/or WI /section(s): CAM SOP-00894/14, Section 13.2.2

Affected Job(s) / WS(s): B8X5580 / 5897102

Affected samples ID: All samples associated with worksheet 5897102

Initiated by (print name) Adam Robinson (sign)

DESCRIPTION:

The matrix spike (MS) and matrix spike duplicate (MSD) were not spiked according to the procedure outlined in CAM SOP-00894 Sec. 13.2.2.

INVESTIGATION/CAUSE:

The samples used for MS/MSD were received in 250 mL containers instead of the standard 125 mL container typically used for this analysis. Due to the increased sample volume, the spiking volume should have been increased proportionally, however, spiking was performed based on a 125 mL sample volume (refer to CAM FCD-00710; Reagent Tracking Record for spiking volume).

RATIONALE & ACTION TAKEN:

MS/MSD recoveries were calculated based on the adjusted target concentration.

EFFECT ON DATA QUALITY (Evaluation of the significance):

There is no impact on data quality. MS/MSD were spiked >LOQ and <mid-level Cal Standard in accordance with DoD QSM 5.1.1 table B-15. MS/MSD recoveries were within method and project specified acceptance criteria.

STEPS TAKEN TO PREVENT FURTHER OCCURRENCE:

The Analyst was informed of the incident and reminded to verify sample and spiking volumes prior to proceeding.

No further action will be taken as this is an isolated incident.

(Check one box only)

☐ Bench Level Planned Deviation ☒ Bench Level Non-Conformance

Manager or Supervisor or Section Head : (PRINT NAME) Rodney Watson

SIGNATURE: **DATE:** 2019/01/04

Definitions:

Bench Level Planned Deviation: Changes to approved process/SOP are planned before their implementation

Bench Level Non-Conformance: Changes to approved process/SOP discovered after their implementation

Worksheet Number: **5897102**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	Units	MTRX SPK	MTRX SPK Dup1	SPIKE	BLANK	B8X5580 IOF231	DL
6:2 Fluorotelomer sulfonate	ug/L	103.36	109.21	110.86892	0	N/A*******	0.02
8:2 Fluorotelomer sulfonate	ug/L	107.27	106.386	106.01599	0	N/A*******	0.02
EtFOSA	ug/L	94.26	103.08	108.61738	0	N/A*******	0.02
EtFOSAA	ug/L	102.7	99.32	105.82162	0	0	0.02
EtFOSE	ug/L	96.93	101.46	100.39347	0	N/A*******	0.02
MeFOSA	ug/L	94.81	105.32	101.22009	0	N/A*******	0.02
MeFOSAA	ug/L	101.12	105.73	99.43060	0	0	0.02
MeFOSE	ug/L	104.04	104.5	106.23110	0	N/A*******	0.02
Perfluorobutanoic acid	ug/L	101.57	106.43	103.98714	0	N/A*******	0.02
Perfluorobutane Sulfonate (PFBS)	ug/L	101.96	101.47	100.29615	0	0	0.02
Perfluorodecane Sulfonate	ug/L	98.436	101.11	92.78046	0	N/A*******	0.02
Perfluoroheptanoic Acid (PFHpA)	ug/L	101.76	102.75	107.44893	0	0	0.02
Perfluoroheptane sulfonate	ug/L	101.67	105.12	108.24895	0	N/A*******	0.02
Perfluorohexanoic Acid (PFHxA)	ug/L	102.2	103.83	102.56791	0	0	0.02
Perfluorohexane Sulfonate (PFHxS)	ug/L	102.2	103.36	103.19140	0	0	0.02
Perfluorononanoic Acid (PFNA)	ug/L	98.715	97.59	99.24278	0	0	0.02
Perfluorooctane Sulfonamide (PFOSA)	ug/L	103.55	109.33	101.54574	0	N/A*******	0.02
Perfluoropentanoic Acid (PFPeA)	ug/L	98.61	98.92	99.08930	0	N/A*******	0.02
Perfluorotetradecanoic Acid	ug/L	107.07	106.66	106.47103	0	0	0.02
Perfluorotridecanoic Acid	ug/L	105.07	108.83	107.62443	0	0	0.02
Perfluoroundecanoic Acid (PFUnA)	ug/L	99.51	106.098	99.30984	0	0	0.02
Perfluorodecanoic Acid (PFDA)	ug/L	108.76	108.57	101.61890	0	0	0.02
Perfluorododecanoic Acid (PFDoA)	ug/L	100.6	106.67	109.37537	0	0	0.02
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	100.6	106.19	103.75509	0	0	0.02
Perfluorooctane Sulfonate (PFOS)	ug/L	103.09	96.097	108.83179	0	0	0.02
13C2-6:2 Fluorotelomer sulfonate	ug/L	89.6921313	87.6902747	81.5072332	86.6058890	N/A*******	
13C2-8:2 Fluorotelomer sulfonate	ug/L	88.9778406	84.8361530	85.0770153	79.2285676	N/A*******	
13C2-perfluorotetradecanoic acid	ug/L	77.5941798	79.7005713	79.2993465	67.9888918	82.7299665	
13C3-Perfluorobutanesulfonic acid	ug/L	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	
13C4-Perfluorobutanoic acid	ug/L	83.0092217	83.2646469	89.0919950	81.3549092	N/A*******	
D3-MeFOSAA	ug/L	81.4483669	81.5967453	79.0436937	74.6304964	84.2391710	
D5-EtFOSAA	ug/L	80.1713775	83.0671440	74.7344224	68.4441154	80.5104608	
D7-MeFOSE	ug/L	77.8299516	76.3283467	76.2486174	66.1423092	N/A*******	
D9-EtFOSE	ug/L	77.9041005	78.0151976	76.4039583	67.1102285	N/A*******	
13C2-Perfluorodecanoic acid	ug/L	84.1558816	88.7519289	90.1266433	74.5384538	85.3728865	
13C2-Perfluorododecanoic acid	ug/L	78.3252348	85.7736762	81.3845374	71.8517844	85.7952908	
13C2-Perfluorohexanoic acid	ug/L	89.8254614	89.6689492	89.3498782	77.6293334	89.0895555	
13C2-Perfluoroundecanoic acid	ug/L	91.4301953	86.9308230	90.3041016	76.5772068	94.7483690	
13C4-Perfluoroheptanoic acid	ug/L	90.5563056	90.6249814	86.1908769	80.7032330	91.4884613	
13C5-Perfluorononanoic acid	ug/L	91.5419497	96.3722965	91.7524190	79.2337831	90.5420303	
13C4-Perfluorooctanoic acid	ug/L	92.2202630	91.6597926	89.3254314	82.7970724	90.2335315	
13C4-Perfluorooctanesulfonate	ug/L	87.3902365	94.1319924	82.8488262	80.5497605	83.0537234	
13C5-Perfluoropentanoic acid	ug/L	89.3987986	90.6317415	89.1708384	79.8021324	N/A*******	
13C8-Perfluorooctane Sulfonamide	ug/L	82.1581241	81.3012725	80.8805063	71.7662683	N/A*******	
18O2-Perfluorohexanesulfonate	ug/L	90.1590887	92.3760588	88.7297771	84.0136109	88.8933082	

Worksheet Number: **5897102**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

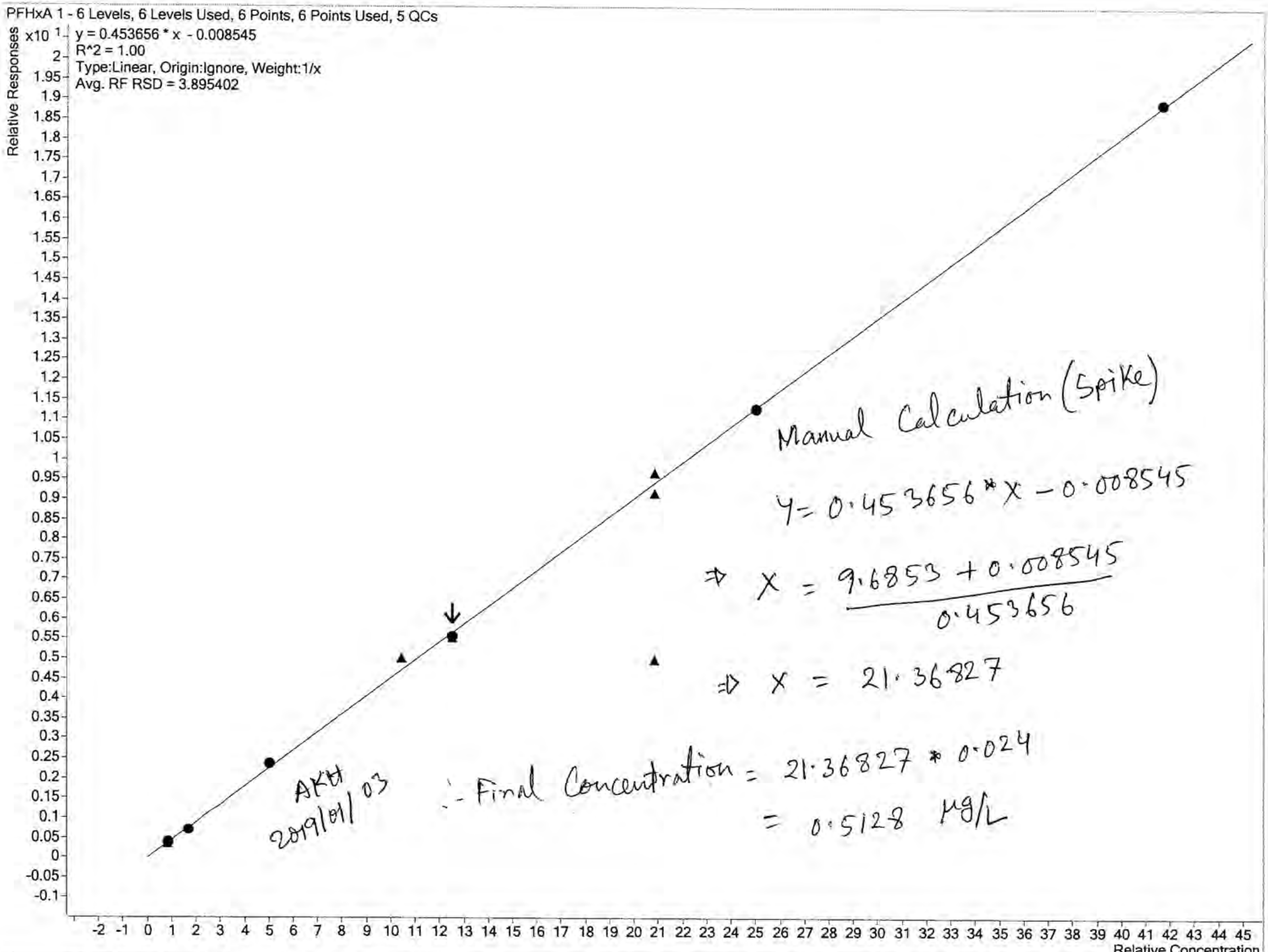
Parameter Name	B8X5580 IOF232	B8X5580 IOF233	DL	B8X5580 IOF234	B8X5580 IOF236	B8X5580 IOF237	B8X5580 IOF238
6:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
8:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
EtFOSA	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
EtFOSAA	0	0	0.2	0	0	0	0
EtFOSE	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
MeFOSA	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
MeFOSAA	0	0	0.2	0	0	0	0
MeFOSE	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorobutanoic acid	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorobutane Sulfonate (PFBS)	0	0	0.2	0	0	0	0
Perfluorodecane Sulfonate	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluoroheptanoic Acid (PFHpA)	0	0	0.2	0	0	0	0
Perfluoroheptane sulfonate	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorohexanoic Acid (PFHxA)	0	0	0.2	0	0	0	0.00363144
Perfluorohexane Sulfonate (PFHxS)	0	0	0.2	0	0	0	0.02035163
Perfluorononanoic Acid (PFNA)	0	0	0.2	0	0	0	0
Perfluorooctane Sulfonamide (PFOSA)	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluoropentanoic Acid (PFPeA)	N/A*******	N/A*******	0.2	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorotetradecanoic Acid	0	0	0.2	0	0	0	0
Perfluorotridecanoic Acid	0	0	0.2	0	0	0	0
Perfluoroundecanoic Acid (PFUnA)	0	0	0.2	0	0	0	0
Perfluorodecanoic Acid (PFDA)	0	0	0.2	0	0	0	0
Perfluorododecanoic Acid (PFDoA)	0	0	0.2	0	0	0	0
Perfluoro-n-Octanoic Acid (PFOA)	0	0	0.2	0	0	0	0
Perfluorooctane Sulfonate (PFOS)	0	0	0.2	0	0	0	0.00802646
13C2-6:2 Fluorotelomer sulfonate	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
13C2-8:2 Fluorotelomer sulfonate	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
13C2-perfluorotetradecanoic acid	!! 27.2752	!! 26.0586		73.9104044	60.8073101	60.1086105	90.1367717
13C3-Perfluorobutanesulfonic acid	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
13C4-Perfluorobutanoic acid	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
D3-MeFOSAA	74.1675582	68.8995405		80.0844554	83.6320888	83.1850188	94.2667763
D5-EtFOSAA	65.6439167	63.5247922		75.0443897	81.6921761	79.0344139	92.8289573
D7-MeFOSE	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
D9-EtFOSE	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
13C2-Perfluorodecanoic acid	77.3956808	73.6266650		92.9275181	84.1754197	88.0347302	93.6766694
13C2-Perfluorododecanoic acid	!! 46.5576	!! 44.5647		78.8545197	81.6853328	79.6207956	96.3039987
13C2-Perfluorohexanoic acid	92.9788973	89.5999576		91.4909360	89.3007097	90.3586285	92.3070977
13C2-Perfluoroundecanoic acid	67.8708101	59.4105431		86.7936848	85.2025942	84.6187708	93.6442262
13C4-Perfluoroheptanoic acid	90.8330203	91.5149703		91.9945244	91.3395189	90.1069065	95.3860652
13C5-Perfluorononanoic acid	84.0094751	82.8185985		94.3488055	87.8025977	96.0418416	93.5051714
13C4-Perfluorooctanoic acid	87.7608442	83.2021967		90.6696807	89.9261712	95.1263637	95.6758739
13C4-Perfluorooctanesulfonate	75.4850449	74.7867061		91.5132936	90.8154310	88.9444938	96.3578066
13C5-Perfluoropentanoic acid	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
13C8-Perfluorooctane Sulfonamide	N/A*******	N/A*******		N/A*******	N/A*******	N/A*******	N/A*******
18O2-Perfluorohexanesulfonate	92.3733306	88.4168008		93.6011975	87.4424542	89.9665896	83.7072912

Worksheet Number: **5897102**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	B8X5580 IOF239	B8X5580 IOF254	DL	RDL	MDL	IDL	
6:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.02	0.02	0.0066	0	
8:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.02	0.02	0.0066	0	
EtFOSA	N/A*******	N/A*******	0.02	0.02	0.01	0	
EtFOSAA	0	0	0.02	0.02	0.0033	0	
EtFOSE	N/A*******	N/A*******	0.02	0.02	0.0079	0	
MeFOSA	N/A*******	N/A*******	0.02	0.02	0.013	0	
MeFOSAA	0	0	0.02	0.02	0.0029	0	
MeFOSE	N/A*******	N/A*******	0.02	0.02	0.012	0	
Perfluorobutanoic acid	N/A*******	N/A*******	0.02	0.02	0.0055	0	
Perfluorobutane Sulfonate (PFBS)	0	0	0.02	0.02	0.0054	0	
Perfluorodecane Sulfonate	N/A*******	N/A*******	0.02	0.02	0.006	0	
Perfluoroheptanoic Acid (PFHpA)	0	0.00511893	0.02	0.02	0.0074	0	
Perfluoroheptane sulfonate	N/A*******	N/A*******	0.02	0.02	0.008	0	
Perfluorohexanoic Acid (PFHxA)	0	0.00696258	0.02	0.02	0.0035	0	
Perfluorohexane Sulfonate (PFHxS)	0	0.01092537	0.02	0.02	0.0056	0	
Perfluorononanoic Acid (PFNA)	0	0	0.02	0.02	0.0087	0	
Perfluorooctane Sulfonamide (PFOSA)	N/A*******	N/A*******	0.02	0.02	0.0034	0	
Perfluoropentanoic Acid (PFPeA)	N/A*******	N/A*******	0.02	0.02	0.0075	0	
Perfluorotetradecanoic Acid	0	0	0.02	0.02	0.0027	0	
Perfluorotridecanoic Acid	0	0	0.02	0.02	0.0038	0	
Perfluoroundecanoic Acid (PFUnA)	0	0	0.02	0.02	0.0025	0	
Perfluorodecanoic Acid (PFDA)	0	0	0.02	0.02	0.0061	0	
Perfluorododecanoic Acid (PFDoA)	0	0	0.02	0.02	0.005	0	
Perfluoro-n-Octanoic Acid (PFOA)	0	0.004321	0.02	0.02	0.0033	0	
Perfluorooctane Sulfonate (PFOS)	0	0.03462977	0.02	0.02	0.006	0	
13C2-6:2 Fluorotelomer sulfonate	93.5665043	N/A*******					
13C2-8:2 Fluorotelomer sulfonate	N/A*******	N/A*******					
13C2-perfluorotetradecanoic acid	77.7165445	82.6819629					
13C3-Perfluorobutanesulfonic acid	N/A*******	N/A*******					
13C4-Perfluorobutanoic acid	N/A*******	N/A*******					
D3-MeFOSAA	84.8303218	91.0884615					
D5-EtFOSAA	79.6199924	90.5533774					
D7-MeFOSE	N/A*******	N/A*******					
D9-EtFOSE	N/A*******	N/A*******					
13C2-Perfluorodecanoic acid	85.0217067	87.6919914					
13C2-Perfluorododecanoic acid	80.0391735	83.4806119					
13C2-Perfluorohexanoic acid	91.2475677	90.9960595					
13C2-Perfluoroundecanoic acid	83.5804456	89.1949222					
13C4-Perfluoroheptanoic acid	90.3967054	94.9670091					
13C5-Perfluorononanoic acid	93.4423877	94.3671728					
13C4-Perfluorooctanoic acid	93.3559346	92.1064151					
13C4-Perfluorooctanesulfonate	88.1396596	94.5399221					
13C5-Perfluoropentanoic acid	N/A*******	N/A*******					
13C8-Perfluorooctane Sulfonamide	N/A*******	N/A*******					
18O2-Perfluorohexanesulfonate	89.7787090	93.8174540					



Manual Calculation (Spike)

$y = 0.453656 * x - 0.008545$

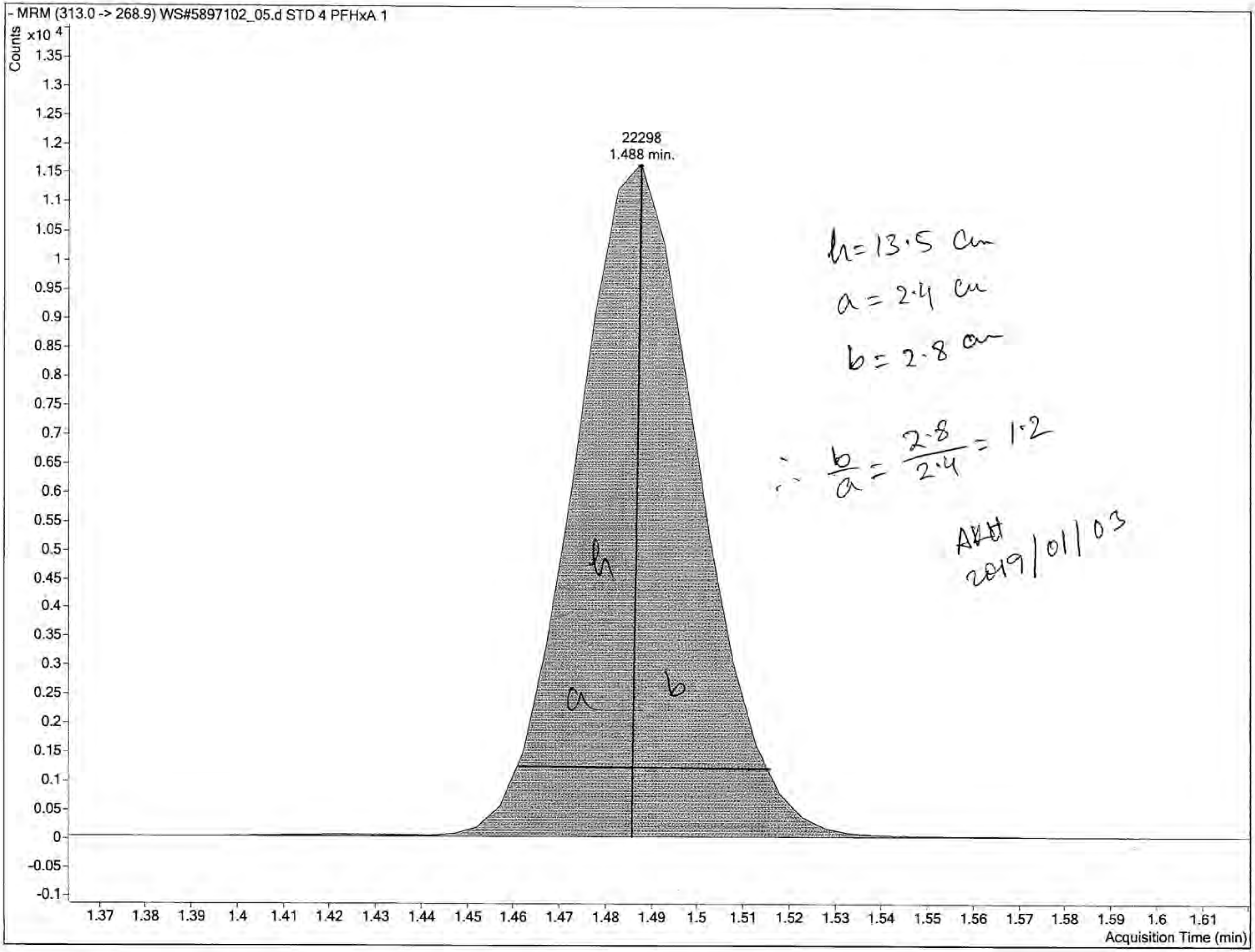
$\Rightarrow x = \dfrac{9.6853 + 0.008545}{0.453656}$

$\Rightarrow x = 21.36827$

$\therefore$ Final Concentration $= 21.36827 * 0.024$

$= 0.5128$ µg/L

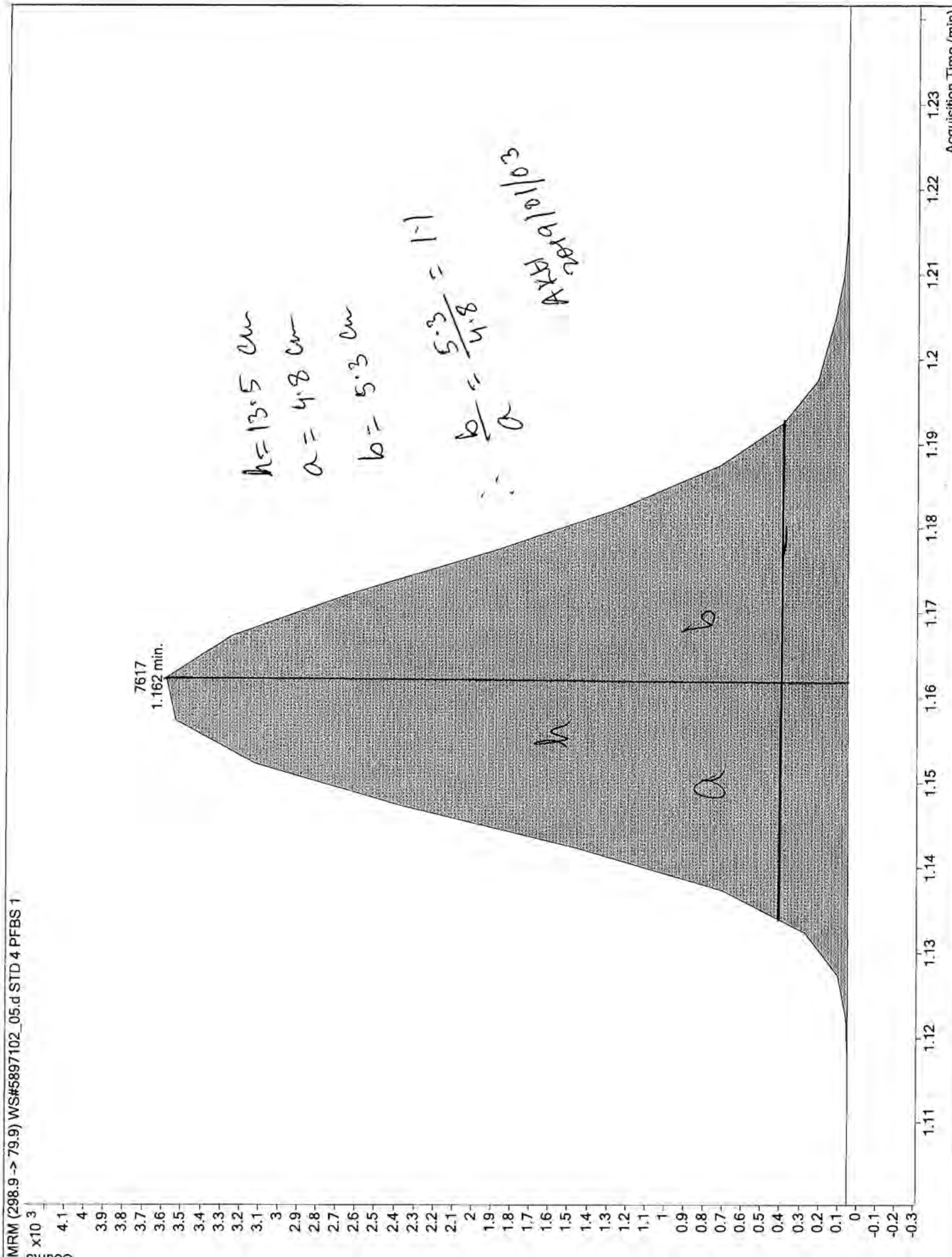
AKH
2019/01/03



h = 13.5 cm
a = 2.4 cm
b = 2.8 cm

$\therefore \frac{b}{a} = \frac{2.8}{2.4} = 1.2$

AH
2019/01/03


- MRM (298.9 -> 79.9) WS#5897102_05.d STD 4 PFBS 1
Counts x10 3
7617
1.162 min.
h
a
b
Acquisition Time (min)
h = 13.5 cm
a = 4.8 cm
b = 5.3 cm
∴ b/a = 5.3/4.8 = 1.1
AKH 2019/01/03

Report Name: Worksheet - Parameter Lists
Report Date: 2018/12/19

Test Code: **PFOSALCM-W**
Worksheet Number: **5897102**

Sample Number	Parameter Code	Parameter	
IOF231-01	ETFOSAA	EtFOSAA	*
IOF232-01	MEFOSAA	MeFOSAA	*
IOF233-01	PFBS	Perfluorobutane Sulfonate (PFBS)	
IOF234-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
IOF236-01	PFHXA	Perfluorohexanoic Acid (PFHxA)	
IOF237-01	PFHXS	Perfluorohexane Sulfonate (PFHxS)	
IOF238-01	PFNA	Perfluorononanoic Acid (PFNA)	
IOF239-01	PFTEDA	Perfluorotetradecanoic Acid	
IOF254-01	PFTRDA	Perfluorotridecanoic Acid	
	PFUNA	Perfluoroundecanoic Acid (PFUnA)	
	PFDA	Perfluorodecanoic Acid (PFDA)	
	PFDOA	Perfluorododecanoic Acid (PFDoA)	
	PFOA	Perfluoro-n-Octanoic Acid (PFOA)	
	PFOS	Perfluorooctane Sulfonate (PFOS)	

* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 5897102 Instrument Sequences

1.	5897102:MTRX SPK	MTRX SPK
2.	5897102:MTRX SPK:D1	MTRX SPK :D1
3.	5897102:SPIKE	SPIKE
4.	5897102:BLANK	BLANK
5.	5897102:IOF231-01	GP001
6.	5897102:IOF232-01	GP002
7.	5897102:IOF233-01	GP003
8.	5897102:IOF234-01	GP004
9.	5897102:IOF236-01	GP006
10.	5897102:IOF237-01	GP007
11.	5897102:IOF238-01	GP008
12.	5897102:IOF239-01	GP009
13.	5897102:IOF254-01	GP024

Worklist Report

Agilent Technologies

Instrument Name: LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_181221_Low_A.wkl

Operator Name:	---
Run Type:	Standard Start
Part of Method to Run:	Acquisition Only
Execution of Acquisition-DA:	Synchronous
Acquisition Method Path:	D:\MassHunter\Acquisition Method
DA Method Path:	D:\MassHunter\methods
Data File Path:	D:\MassHunter\data\PFC\20181221\WS#5897102
Pre-Worklist Script:	---
Post-Worklist Script:	SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
Acquisition Clean Up Script:	---
Overlapped Injection:	No
Clear Sample Selection After Run:	Yes
Wait Time for Ready(Min):	10
Threshold Disk Value(GB):	10
Comment:	Column #355 MP A1: Solution #462 [FSRE18] MP B1: Methanol lot# SHBK5051, Sigma

verified by AKH 2018/12/21

2018/12/21 [initials]

Plate Barcode:

Plate	Barcode
P2	

Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	RINSE	P2-A1	PFC_Water_Low.m	WS#5897102_01.d	Sample		As Method	-
2	STD 1	P2-A2	PFC_Water_Low.m	WS#5897102_02.d	Calibration	STD 1	As Method	-
3	STD 2	P2-A3	PFC_Water_Low.m	WS#5897102_03.d	Calibration	STD 2	As Method	-
4	STD 3	P2-A4	PFC_Water_Low.m	WS#5897102_04.d	Calibration	STD 3	As Method	-
5	STD 4	P2-A5	PFC_Water_Low.m	WS#5897102_05.d	Calibration	STD 4	As Method	-
6	STD 5	P2-A6	PFC_Water_Low.m	WS#5897102_06.d	Calibration	STD 5	As Method	-
7	STD 6	P2-A7	PFC_Water_Low.m	WS#5897102_07.d	Calibration	STD 6	As Method	-

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
8	IB	P2-A8	PFC_Water_Low.m	WS#5897102_08.d	Sample		As Method	-
9	ICV	P2-A9	PFC_Water_Low.m	WS#5897102_09.d	QC	ICV	As Method	-
10	ISC	P2-A2	PFC_Water_Low.m	WS#5897102_10.d	QC	STD 1	As Method	-
11	5897102:BLANK	P2-B1	PFC_Water_Low.m	WS#5897102_11.d	Sample		As Method	-
12	5897102:SPIKE	P2-B2	PFC_Water_Low.m	WS#5897102_12.d	QC	ICV	As Method	-
13	5897102:MTRX SPK	P2-B3	PFC_Water_Low.m	WS#5897102_13.d	QC	ICV	As Method	-
14	5897102:MTRX SPK:D1	P2-B4	PFC_Water_Low.m	WS#5897102_14.d	Sample		As Method	-
15	IB	P2-A8	PFC_Water_Low.m	WS#5897102_15.d	Sample		As Method	-
16	5897102:IOF231-01	P2-B5	PFC_Water_Low.m	WS#5897102_16.d	Sample		As Method	-
17	5897102:IOF232-01:10x	P2-B6	PFC_Water_Low.m	WS#5897102_17.d	QC	ICV	As Method	-
18	5897102:IOF233-01:10x	P2-B7	PFC_Water_Low.m	WS#5897102_18.d	Sample		As Method	-
19	5897102:IOF234-01	P2-B8	PFC_Water_Low.m	WS#5897102_19.d	Sample		As Method	-
20	5897102:IOF236-01	P2-B9	PFC_Water_Low.m	WS#5897102_20.d	Sample		As Method	-
21	5897102:IOF237-01	P2-C1	PFC_Water_Low.m	WS#5897102_21.d	Sample		As Method	-
22	5897102:IOF238-01	P2-C2	PFC_Water_Low.m	WS#5897102_22.d	Sample		As Method	-
23	5897102:IOF239-01	P2-C3	PFC_Water_Low.m	WS#5897102_23.d	Sample		As Method	-
24	5897102:IOF254-01	P2-C4	PFC_Water_Low.m	WS#5897102_24.d	Sample		As Method	-
25	CCV	P2-A5	PFC_Water_Low.m	WS#5897102_25.d	ConCal	STD 4	As Method	-

Worklist Report

Agilent Technologies

Instrument Name: LCMS04

Worklist Path: D:\MassHunter\Worklists\PFCs\PFC_181221_Low_A_FOSAA.wkl

Operator Name: ---
Run Type: Standard Start
Part of Method to Run: Acquisition Only
Execution of Acquisition-DA: Synchronous
Acquisition Method Path: D:\MassHunter\Acquisition Method
DA Method Path: D:\MassHunter\methods
Data File Path: D:\MassHunter\data\PFC\20181221\WS#5897102_FOSAA
Pre-Worklist Script: ---
Post-Worklist Script: SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
Acquisition Clean Up Script: ---
Overlapped Injection: No
Clear Sample Selection After Run: Yes
Wait Time for Ready(Min): 10
Threshold Disk Value(GB): 10
Comment: Column #355
MP A1: Solution #462 [FSRE18]
MP B2: Solution #459 [FSRE18]

verified by AKH 2018/12/21

2018/12/21

Plate Barcode:

Plate	Barcode
P2	

Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	RINSE	P2-A1	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_01.d	Sample		As Method	-
2	STD 1	P2-A2	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_02.d	Calibration	STD 1	As Method	-
3	STD 2	P2-A3	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_03.d	Calibration	STD 2	As Method	-
4	STD 3	P2-A4	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_04.d	Calibration	STD 3	As Method	-
5	STD 4	P2-A5	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_05.d	Calibration	STD 4	As Method	-
6	STD 5	P2-A6	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_06.d	Calibration	STD 5	As Method	-
7	STD 6	P2-A7	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_07.d	Calibration	STD 6	As Method	-
8	IB	P2-A8	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_08.d	Sample		As Method	-

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
9	ICV	P2-A9	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_09.d	QC	ICV	As Method	-
10	ISC	P2-A2	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_10.d	QC	STD 1	As Method	-
11	5897102:BLANK	P2-B1	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_11.d	Sample		As Method	-
12	5897102:SPIKE	P2-B2	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_12.d	QC	ICV	As Method	-
13	5897102:MTRX SPK	P2-B3	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_13.d	QC	ICV	As Method	-
14	5897102:MTRX SPK:D1	P2-B4	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_14.d	Sample		As Method	-
15	IB	P2-A8	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_15.d	Sample		As Method	-
16	5897102:IOF231-01	P2-B5	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_16.d	Sample		As Method	-
17	5897102:IOF232-01:10x	P2-B6	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_17.d	QC	ICV	As Method	-
18	5897102:IOF233-01:10x	P2-B7	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_18.d	Sample		As Method	-
19	5897102:IOF234-01	P2-B8	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_19.d	Sample		As Method	-
20	5897102:IOF236-01	P2-B9	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_20.d	Sample		As Method	-
21	5897102:IOF237-01	P2-C1	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_21.d	Sample		As Method	-
22	5897102:IOF238-01	P2-C2	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_22.d	Sample		As Method	-
23	5897102:IOF239-01	P2-C3	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_23.d	Sample		As Method	-
24	5897102:IOF254-01	P2-C4	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_24.d	Sample		As Method	-
25	CCV	P2-A5	PFC_Water_Low_FOSAA.m	WS#5897102_FOSAA_25.d	ConCal	STD 4	As Method	-

FINAL INJECTION SEQUENCE

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2018/12/21 7:26 PM	WS#5897102_02.d	PFC_Water_Low.m	P2-A2
STD 2	-	2018/12/21 7:31 PM	WS#5897102_03.d	PFC_Water_Low.m	P2-A3
STD 3	-	2018/12/21 7:36 PM	WS#5897102_04.d	PFC_Water_Low.m	P2-A4
STD 4	-	2018/12/21 7:41 PM	WS#5897102_05.d	PFC_Water_Low.m	P2-A5
STD 5	-	2018/12/21 7:46 PM	WS#5897102_06.d	PFC_Water_Low.m	P2-A6
STD 6	-	2018/12/21 7:51 PM	WS#5897102_07.d	PFC_Water_Low.m	P2-A7
IB	-	2018/12/21 7:56 PM	WS#5897102_08.d	PFC_Water_Low.m	P2-A8
ICV	-	2018/12/21 8:01 PM	WS#5897102_09.d	PFC_Water_Low.m	P2-A9
ISC	-	2018/12/21 8:06 PM	WS#5897102_10.d	PFC_Water_Low.m	P2-A2
5897102:BLANK	-	2018/12/21 8:11 PM	WS#5897102_11.d	PFC_Water_Low.m	P2-B1
5897102:SPIKE	-	2018/12/21 8:16 PM	WS#5897102_12.d	PFC_Water_Low.m	P2-B2
5897102:MTRX SPK	IOF254	2018/12/21 8:20 PM	WS#5897102_13.d	PFC_Water_Low.m	P2-B3
5897102:MTRX SPK:D1	IOF254	2018/12/21 8:25 PM	WS#5897102_14.d	PFC_Water_Low.m	P2-B4
IB	-	2018/12/21 8:30 PM	WS#5897102_15.d	PFC_Water_Low.m	P2-A8
5897102:IOF231-01	-	2018/12/21 8:35 PM	WS#5897102_16.d	PFC_Water_Low.m	P2-B5
5897102:IOF232-01:10x	-	2018/12/21 8:40 PM	WS#5897102_17.d	PFC_Water_Low.m	P2-B6
5897102:IOF233-01:10x	-	2018/12/21 8:45 PM	WS#5897102_18.d	PFC_Water_Low.m	P2-B7
5897102:IOF234-01	-	2018/12/21 8:50 PM	WS#5897102_19.d	PFC_Water_Low.m	P2-B8
5897102:IOF236-01	-	2018/12/21 8:55 PM	WS#5897102_20.d	PFC_Water_Low.m	P2-B9
5897102:IOF237-01	-	2018/12/21 9:00 PM	WS#5897102_21.d	PFC_Water_Low.m	P2-C1
5897102:IOF238-01	-	2018/12/21 9:05 PM	WS#5897102_22.d	PFC_Water_Low.m	P2-C2
5897102:IOF239-01	-	2018/12/21 9:10 PM	WS#5897102_23.d	PFC_Water_Low.m	P2-C3
5897102:IOF254-01	-	2018/12/21 9:14 PM	WS#5897102_24.d	PFC_Water_Low.m	P2-C4
CCV	-	2018/12/21 9:19 PM	WS#5897102_25.d	PFC_Water_Low.m	P2-A5

LCMS04

FINAL INJECTION SEQUENCE

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2018/12/22 12:31 AM	WS#5897102_FOSAA_02.d	PFC_Water_Low_FOSAA.m	P2-A2
STD 2	-	2018/12/22 12:34 AM	WS#5897102_FOSAA_03.d	PFC_Water_Low_FOSAA.m	P2-A3
STD 3	-	2018/12/22 12:36 AM	WS#5897102_FOSAA_04.d	PFC_Water_Low_FOSAA.m	P2-A4
STD 4	-	2018/12/22 12:38 AM	WS#5897102_FOSAA_05.d	PFC_Water_Low_FOSAA.m	P2-A5
STD 5	-	2018/12/22 12:41 AM	WS#5897102_FOSAA_06.d	PFC_Water_Low_FOSAA.m	P2-A6
STD 6	-	2018/12/22 12:43 AM	WS#5897102_FOSAA_07.d	PFC_Water_Low_FOSAA.m	P2-A7
IB	-	2018/12/22 12:45 AM	WS#5897102_FOSAA_08.d	PFC_Water_Low_FOSAA.m	P2-A8
ICV	-	2018/12/22 12:48 AM	WS#5897102_FOSAA_09.d	PFC_Water_Low_FOSAA.m	P2-A9
ISC	-	2018/12/22 12:50 AM	WS#5897102_FOSAA_10.d	PFC_Water_Low_FOSAA.m	P2-A2
5897102:BLANK	-	2018/12/22 12:53 AM	WS#5897102_FOSAA_11.d	PFC_Water_Low_FOSAA.m	P2-B1
5897102:SPIKE	-	2018/12/22 12:55 AM	WS#5897102_FOSAA_12.d	PFC_Water_Low_FOSAA.m	P2-B2
5897102:MTRX SPK	IOF254	2018/12/22 12:57 AM	WS#5897102_FOSAA_13.d	PFC_Water_Low_FOSAA.m	P2-B3
5897102:MTRX SPK:D1	IOF254	2018/12/22 1:00 AM	WS#5897102_FOSAA_14.d	PFC_Water_Low_FOSAA.m	P2-B4
IB	-	2018/12/22 1:02 AM	WS#5897102_FOSAA_15.d	PFC_Water_Low_FOSAA.m	P2-A8
5897102:IOF231-01	-	2018/12/22 1:05 AM	WS#5897102_FOSAA_16.d	PFC_Water_Low_FOSAA.m	P2-B5
5897102:IOF232-01:10x	-	2018/12/22 1:07 AM	WS#5897102_FOSAA_17.d	PFC_Water_Low_FOSAA.m	P2-B6
5897102:IOF233-01:10x	-	2018/12/22 1:09 AM	WS#5897102_FOSAA_18.d	PFC_Water_Low_FOSAA.m	P2-B7
5897102:IOF234-01	-	2018/12/22 1:12 AM	WS#5897102_FOSAA_19.d	PFC_Water_Low_FOSAA.m	P2-B8
5897102:IOF236-01	-	2018/12/22 1:14 AM	WS#5897102_FOSAA_20.d	PFC_Water_Low_FOSAA.m	P2-B9
5897102:IOF237-01	-	2018/12/22 1:16 AM	WS#5897102_FOSAA_21.d	PFC_Water_Low_FOSAA.m	P2-C1
5897102:IOF238-01	-	2018/12/22 1:19 AM	WS#5897102_FOSAA_22.d	PFC_Water_Low_FOSAA.m	P2-C2
5897102:IOF239-01	-	2018/12/22 1:21 AM	WS#5897102_FOSAA_23.d	PFC_Water_Low_FOSAA.m	P2-C3
5897102:IOF254-01	-	2018/12/22 1:24 AM	WS#5897102_FOSAA_24.d	PFC_Water_Low_FOSAA.m	P2-C4
CCV	-	2018/12/22 1:26 AM	WS#5897102_FOSAA_25.d	PFC_Water_Low_FOSAA.m	P2-A5

LCMS04

DoD Projects - Internal Data Validation Checklist

Run date: 2018\12\21

Worksheet # (s): 5898852

Analysis: PFAADW-W

	Primary review by the analyst - 1st 100 % analysis review	1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria	✓			✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, SRM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria		✓		✓
8	Method Blank meets acceptance criteria		✓		✓
9	Matrix Spike recovery(s) meets acceptance criteria		✓		✓
10	Duplicate precision meets acceptance criteria		✓		✓
11	QC is documented on the run logs			✓	✓
12	Runs checked for carryover	✓			✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed	✓			✓
17	Dilution factors (where justified) have been checked for correctness and entered			✓	✓
18	Analytical observations/anomalies documented in LIMS	✓			✓
19	Random calculation checked and in correct units			✓	✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated			✓	✓
22	Transferred data is validated in LIMS for correctness			✓	✓
23	Data package assembled (where required)	✓			✓

Reviewed by: [signature] Date: 2018/12/27

Comments: All samples reworked due to Low Surrogate recoveries & low recovery for the Spike. [initials] 2018/12/27.

	Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review	yes	no	n/a
1	Repeats documented and referenced	✓		
2	Method and sample deviations noted, anomalies described (if applicable)			✓
3	Data and QC validated in LIMS	✓		
4	Random calculation checked	✓		
5	Benchsheet (s) signed and dated	✓		
6	Data Package (if required) checked for completeness	✓		

Reviewed by: [signature] Date: 2019/01/08

Comments:

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5B98852	Testcode: PFAADW -W

	Sample Preparation	yes	no	n/a
1	Samples extracted within hold time	✓		
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract			
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded	✓		
9	Matrix spike / Duplicate performed on IOL samples if present			✓
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet			✓
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)	✓		
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.			✓
15	Worksheet and reagent tracking record completed and authorized.	✓		

Reviewed by: EG1 Date: 2018/12/20
Comments:

	Worksheet Approval	yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

Reviewed by: Date: See BRC FCD002.
Comments:

	Worksheet Validation	yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: Date:
Comments:

WS# : 5898852

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Thursday, December 20, 2018

Assigned to : Esraa Ghaoush

Test Code : PFAADW-W

Instrument Id:

Test Description : PFAAs in drinking water by SPE and LC/MS/MS

Job Number	Sample Number	D	Sample ID	F	% Moisture	Wt or Vol ml	Final Vol ml	DF or AF	# Cont	Expiry Date	Test DeadLine	Criteria	Extract Date
	MTRX SPK	0	PFDWM IOF242-01		0	280	1	1X					2018/12/20
	MTRX SPK	1	PFDWM IOF242-01		0	280	1	1X					2018/12/20
	SPIKE		PFDWM		0	250	1	1X					2018/12/20
	BLANK				0	250	1	1X					2018/12/20
B8P9750	*HXO250-01R		[redacted]		0	250	1	1X	1		2018/12/28 23:00		2018/12/20
B8P9750	*HXO252-01R		[redacted]		0	250	1	1X	1		2018/12/28 23:00		2018/12/20
B8X5580	*IOF240-01R		GP010		0	270	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF241-01R		GP011		0	250	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF242-01R		GP012		0	280	1	1X	4	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF243-01R		GP013		0	265	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF244-01R		GP014		0	250	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF245-01R		GP015		0	285	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF246-01R		GP016		0	275	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/20

EG
2018/12/20

Remarks: medium

Samples extracted by: Esraa Ghaoush EG

Instrumentation performed by: [signature] Date: 2018/12/24

Calculations performed by: [signature] Date: 2018/12/27

Validated by: [signature] Date: 2019/01/08

Job No.	Rep / Remarks	Client Name	Contact	Client Tier	National
GB8P9750	[redacted]				
GB8X5580	SP8	Earth Toxics Inc	Brian Nagy	Tier 5 (Enviro.)	AECOM

DKN, nreg, PFOSALCM-W/PFAADW-W Standard Navy 14 PFAS MS/MSD required on IOF242, IOF247, IOF254
Sample: GP005 placed on HOLD as per client request SP8 18/12/19 Project #: N62742-12-D-1829

Job	Sample	Lab Comments
	MTRX SPK	
	MTRX SPK	
	SPIKE	
	BLANK	
B8P9750	HXO250-01R	
B8P9750	HXO252-01R	
B8X5580	IOF240-01R	
B8X5580	IOF241-01R	EG 2018/12/20
B8X5580	IOF242-01R	
B8X5580	IOF243-01R	
B8X5580	IOF244-01R	
B8X5580	IOF245-01R	
B8X5580	IOF246-01R	

Amount Spiked (µl)

S1 → 40
S2 → 80
S3 → 240
] DWB SK-7774

S4 → 56
S5 → 120
S6 → 200
] DWA I-5418

ICV → 100] DWA (second source) I-5427

EPFoA → 100] EPFoA (spiking soln) I-5514

+ 100 µL I.S SI-7232 + 100 µl surrogates SI-7169 AC1121

Witnessed By: DDA

Worksheet Reagent Tracking Record Worksheet # 5898852

Surrogate/Spike solutions	√	Solution ID #	Conc.	Volume (µL) Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
Second Source PFAA ~~Comp. PFC Working Solution A~~	✓	I - 5427	1ug/mL	75	~~21~~ ~~62.5~~ 100	75	~~21~~ ~~62.5~~ 100	NA	NA
~~PFC~~ Internal Standard Solution		SI - 7232	50/125 ng/mL	200	100 / 150	200	100 / 150	200	100/150
~~PFC Injection IS~~ surrogate std	✓	SI - 7169 A(1/2)	400 ng/mL	20	~~20~~ 180	20	~~20~~ 180	20	~~20~~ 180
ICV	✓	I - 5927			100				

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared
DCM				50% NaOH			
Ottawa Sand				o-Phosphoric Acid			
Methanol	✓	SHBK5051	2018/12/19	Borax			
2-Propanol (IPA)				Calcium Chloride			
Acetonitrile				EDTA			
Sodium Sulfate				Phosphate Buffer			
70:30 Methanol: Water				Sodium Thiosulphate			
60:40 Water: Methanol				DNPH			
DCM:Ethyl Ether (75:25)				FMOC			
Hexane:IPA (98:2)				5M Acetate Buffer			
2% Formic Acid				0.2% NH_4OH			
0.2% Formic Acid				Leachate Fluid			
0.05M KOH				Reagent Water	✓	58248	2018/12/19
0.05M HCl				96:4 Acetonitrile	✓	PRCRF	124 - 07
				Trizma	✓	SLBT4699	2018/11/15

*Spiked by: EGI

Spike Date: 2018/12/20

Spike Syringe/Pipette ID#: M234878

Int. Std Syringe/Pipette ID#: J36551H

*Spiking Witnessed by: W

Final pH:

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #
Pipettor K52290G M25679G, M4011F J36551H, K26250F	✓	SPE Cartridge	6341059-05	✓	QC Balance ID	FC-1
		Filter		✓	Thermometer ID &Temp	181292679 65 °C
Dispenser		Centrifuge				
		Sonicator				

Bottle Tracking	
Bottle#	
Cap#	
Systems plus Lot#	

Comments:

* - SPIKING OF QC's & SAMPLES MUST BE WITNESSED AT ALL TIMES.

Worksheet Number: **5898852**

PFAAs in drinking water by SPE and LC/MS - Water

ng/L

Parameter Name	Units	MTRX SPK	MTRX SPK Dup1	SPIKE	BLANK	B8P9750 HXO250	B8P9750 HXO252
Perfluorobutanesulfonic acid	ng/L	!! 35.5420	!! 50.1420	!! 35.8000	0	0	0.17800
Perfluorohexanoic Acid (PFHxA)	ng/L	77.42000	86.22000	73.20000	0	0.15200	0.64000
Perfluorohexanesulfonic acid	ng/L	79.80000	!! 67.6000	71.80000	0	0	1.35000
Perfluoroheptanoic Acid (PFHpA)	ng/L	76.38200	83.58200	75.20000	0	0	1.26000
Perfluoro-n-Octanoic Acid (PFOA)	ng/L	72.38000	79.78000	78.20000	0	0	1.68000
Perfluorooctanesulfonic acid	ng/L	93.40000	73.80000	77.20000	0	0	1.78000
Perfluorononanoic Acid (PFNA)	ng/L	92.69600	90.89600	98.20000	0	0	1.81000
Perfluorodecanoic Acid (PFDA)	ng/L	83.20000	75.20000	77.60000	0	0	1.27000
Perfluoroundecanoic Acid (PFUnA)	ng/L	76.40000	82.20000	83.40000	0	0.04320	1.59000
Perfluorododecanoic Acid (PFDoA)	ng/L	73.20000	73.40000	73.60000	0	0	1.27000
Perfluorotridecanoic Acid	ng/L	70.80000	!! 65.2000	73.20000	0	0	1.30000
Perfluorotetradecanoic Acid	ng/L	!! 68.4000	!! 65.6000	!! 67.8000	0	0.04910	1.16000
MeFOSAA	ng/L	!! 69.0000	71.00000	75.00000	0	0	4.43000
EtFOSAA	ng/L	!! 68.0000	!! 63.5000	72.00000	0	0	4.75000
D5-EtFOSAA	ng/L	79.2	76.7	86.6	77	77.7	82.1
13C2-Perfluorodecanoic acid	ng/L	82.1	82.1	82.9	70.7	81.4	77.4
13C2-Perfluorohexanoic acid	ng/L	71.4	89.9	!! 67.9	!! 2.62	76.6	!! 31

Parameter Name	B8X5580 IOF240	B8X5580 IOF241	B8X5580 IOF242	B8X5580 IOF243	B8X5580 IOF244	B8X5580 IOF245	B8X5580 IOF246
Perfluorobutanesulfonic acid	0.17300	0.24400	0.22900	2.23000	0.21700	0	0.06470
Perfluorohexanoic Acid (PFHxA)	0.68200	0.92500	1.19000	3.58000	1.30000	0	0.32000
Perfluorohexanesulfonic acid	2.33000	27.10000	16.30000	17.00000	1.31000	0	1.48000
Perfluoroheptanoic Acid (PFHpA)	0	0.83500	0.90900	1.24000	0	0	0
Perfluoro-n-Octanoic Acid (PFOA)	0.76700	3.00000	1.71000	2.01000	0.93300	0	0.67800
Perfluorooctanesulfonic acid	0	60.90000	29.80000	33.40000	0	0	0
Perfluorononanoic Acid (PFNA)	0.20400	0	0.25200	0.26200	0	0	0
Perfluorodecanoic Acid (PFDA)	0	0	0	0	0	0	0
Perfluoroundecanoic Acid (PFUnA)	0	0	0	0	0.10800	0	0
Perfluorododecanoic Acid (PFDoA)	0	0	0	0	0	0	0
Perfluorotridecanoic Acid	0	0	0	0	0	0	0
Perfluorotetradecanoic Acid	0	0	0	0	0	0	0
MeFOSAA	0	0	0	0	0	0	0
EtFOSAA	0	0	0	0	0	0	0
D5-EtFOSAA	72.3	74.3	72.7	!! 62.2	77.7	!! 59.4	!! 67.4
13C2-Perfluorodecanoic acid	80.3	88.4	79.1	79.2	82.5	!! 63.4	76
13C2-Perfluorohexanoic acid	!! 69.4	!! 21	!! 23.5	86.5	92.2	!! 62.8	!! 59.8

Parameter Name	DL	RDL	MDL	IDL			
Perfluorobutanesulfonic acid	2	2	0.32	0			
Perfluorohexanoic Acid (PFHxA)	2	2	0.36	0			
Perfluorohexanesulfonic acid	2	2	0.27	0			
Perfluoroheptanoic Acid (PFHpA)	2	2	0.36	0			
Perfluoro-n-Octanoic Acid (PFOA)	2	2	0.48	0			
Perfluorooctanesulfonic acid	2	2	0.37	0			
Perfluorononanoic Acid (PFNA)	2	2	0.42	0			
Perfluorodecanoic Acid (PFDA)	2	2	0.22	0			
Perfluoroundecanoic Acid (PFUnA)	2	2	0.3	0			
Perfluorododecanoic Acid (PFDoA)	2	2	0.36	0			
Perfluorotridecanoic Acid	2	2	0.44	0			
Perfluorotetradecanoic Acid	2	2	0.33	0			
MeFOSAA	8	8	1.7	0			
EtFOSAA	8	8	1.3	0			
D5-EtFOSAA							
13C2-Perfluorodecanoic acid							
13C2-Perfluorohexanoic acid							

Report Name: Worksheet - Parameter Lists
Report Date: 2018/12/20

Test Code: **PFAADW-W**
Worksheet Number: **5898852**

Sample Number	Parameter Code	Parameter	
HXO250-01	PFBSA	Perfluorobutanesulfonic acid	
HXO252-01	PFHXA	Perfluorohexanoic Acid (PFHxA)	
IOF240-01	PFHXSA	Perfluorohexanesulfonic acid	
IOF241-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
IOF242-01	PFOA	Perfluoro-n-Octanoic Acid (PFOA)	
IOF243-01	PFOS2	Perfluorooctanesulfonic acid	
IOF244-01	PFNA	Perfluorononanoic Acid (PFNA)	
IOF245-01	PFDA	Perfluorodecanoic Acid (PFDA)	
IOF246-01	PFUNA	Perfluoroundecanoic Acid (PFUnA)	
	PFDOA	Perfluorododecanoic Acid (PFDoA)	
	PFTRDA	Perfluorotridecanoic Acid	
	PFTEDA	Perfluorotetradecanoic Acid	
	MEFOSAA	MeFOSAA	*
	ETFOSAA	EtFOSAA	*

* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 5898852 Instrument Sequences

1.	5898852:MTRX SPK	MTRX SPK
2.	5898852:MTRX SPK:D1	MTRX SPK :D1
3.	5898852:SPIKE	SPIKE
4.	5898852:BLANK	BLANK
5.	5898852:HXO250-01	[redacted]
6.	5898852:HXO252-01	[redacted]
7.	5898852:IOF240-01	GP010
8.	5898852:IOF241-01	GP011
9.	5898852:IOF242-01	GP012
10.	5898852:IOF243-01	GP013
11.	5898852:IOF244-01	GP014
12.	5898852:IOF245-01	GP015
13.	5898852:IOF246-01	GP016

Batch Name: D:\Analyst Data\Projects\Enviro\PFOS\Batch\PFC_181221_EPA537.dab

Printing Date: Friday, December 21, 2018

Project: D:\Analyst Data\Projects\Enviro\PFOS Batch:PFC_181221_EPA537 Tab:Sample Set:SET1 AcqMethod:PFC_Water_EPA537.dam
Sample

	Sample Name	Rack Code	Rack Position	Plate Code	Plate Position	Vial Position	Data File	Inj.Volume (µl)
1	RINSE	2 Well Plates	1	*54VialPlate*	2	1	PFC_181221\WS#5898852	1.500
2	STD 1	2 Well Plates	1	*54VialPlate*	2	2	PFC_181221\WS#5898852	1.500
3	STD 2	2 Well Plates	1	*54VialPlate*	2	3	PFC_181221\WS#5898852	1.500
4	STD 3	2 Well Plates	1	*54VialPlate*	2	4	PFC_181221\WS#5898852	1.500
5	STD 4	2 Well Plates	1	*54VialPlate*	2	5	PFC_181221\WS#5898852	1.500
6	STD 5	2 Well Plates	1	*54VialPlate*	2	6	PFC_181221\WS#5898852	1.500
7	STD 6	2 Well Plates	1	*54VialPlate*	2	7	PFC_181221\WS#5898852	1.500
8	ICV	2 Well Plates	1	*54VialPlate*	2	8	PFC_181221\WS#5898852	1.500
9	CCV	2 Well Plates	1	*54VialPlate*	2	2	PFC_181221\WS#5898852	1.500
10	IPFOA	2 Well Plates	1	*54VialPlate*	2	9	PFC_181221\WS#5898852	1.500
11	5898852~BLANK	2 Well Plates	1	*54VialPlate*	2	10	PFC_181221\WS#5898852	1.500
12	5898852~SPIKE	2 Well Plates	1	*54VialPlate*	2	11	PFC_181221\WS#5898852	1.500
13	5898852~MTRX SPK	2 Well Plates	1	*54VialPlate*	2	12	PFC_181221\WS#5898852	1.500
14	5898852~MTRX SPK D	2 Well Plates	1	*54VialPlate*	2	13	PFC_181221\WS#5898852	1.500
15	5898852~HXO250-01	2 Well Plates	1	*54VialPlate*	2	14	PFC_181221\WS#5898852	1.500
16	5898852~HXO252-01	2 Well Plates	1	*54VialPlate*	2	15	PFC_181221\WS#5898852	1.500
17	5898852~IOF240-01	2 Well Plates	1	*54VialPlate*	2	16	PFC_181221\WS#5898852	1.500
18	5898852~IOF241-01	2 Well Plates	1	*54VialPlate*	2	17	PFC_181221\WS#5898852	1.500
19	5898852~IOF242-01	2 Well Plates	1	*54VialPlate*	2	18	PFC_181221\WS#5898852	1.500
20	5898852~IOF243-01	2 Well Plates	1	*54VialPlate*	2	19	PFC_181221\WS#5898852	1.500
21	5898852~IOF244-01	2 Well Plates	1	*54VialPlate*	2	20	PFC_181221\WS#5898852	1.500
22	5898852~IOF245-01	2 Well Plates	1	*54VialPlate*	2	21	PFC_181221\WS#5898852	1.500
23	5898852~IOF246-01	2 Well Plates	1	*54VialPlate*	2	22	PFC_181221\WS#5898852	1.500
24	CCV	2 Well Plates	1	*54VialPlate*	2	5	PFC_181221\WS#5898852	1.500

Column # 225
MPA = Soln# 460, FJRE18
MPB = MeOH, SHBK1963
GY
2018/12/21

Verified ō 2018/12/21

*FINAL INJECTION SEQUENCE

Printing Time: 2:28:20 PM

Results Path: T:\LCMS03\Analyst Data\Projects\Enviro\PFOS\Results\PFC_Water_181221_5898852_EPA537_EToxics.rdb

Wednesday, January 09, 2019

	Sample ID	Sample Annotation	Acquisition Date	File Name	Acquisition Method	Rack Type	Rack Position	Vial Position	Plate Type	Plate Position
1	STD 1	-	2018/12/21 11:56:49 AM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	2	*54VialPlate*	2
2	STD 2	-	2018/12/21 12:12:24 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	3	*54VialPlate*	2
3	STD 3	-	2018/12/21 12:27:58 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	4	*54VialPlate*	2
4	STD 4	-	2018/12/21 12:43:33 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	5	*54VialPlate*	2
5	STD 5	Re-injected	2018/12/21 12:59:07 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	6	*54VialPlate*	2
6	STD 6	-	2018/12/21 1:14:42 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	7	*54VialPlate*	2
7	STD 5	-	2018/12/21 1:45:51 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	6	*54VialPlate*	2
8	ICV	-	2018/12/21 2:01:25 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	8	*54VialPlate*	2
9	CCV	-	2018/12/21 2:16:58 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	2	*54VialPlate*	2
10	tPFOA	-	2018/12/21 2:32:32 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	9	*54VialPlate*	2
11	5898852~BLANK	-	2018/12/21 2:48:07 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	10	*54VialPlate*	2
12	5898852~SPIKE	-	2018/12/21 3:03:41 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	11	*54VialPlate*	2
13	5898852~MTRX SPK	IOF242	2018/12/21 3:19:16 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	12	*54VialPlate*	2
14	5898852~MTRX SPK:D1	IOF242	2018/12/21 3:34:50 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	13	*54VialPlate*	2
15	5898852~HXO250-01	-	2018/12/21 3:50:25 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	14	*54VialPlate*	2
16	5898852~HXO252-01	-	2018/12/21 4:06:00 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	15	*54VialPlate*	2
17	5898852~IOF240-01	-	2018/12/21 4:21:34 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	16	*54VialPlate*	2
18	5898852~IOF241-01	-	2018/12/21 4:37:09 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	17	*54VialPlate*	2
19	5898852~IOF242-01	-	2018/12/21 4:52:44 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	18	*54VialPlate*	2
20	5898852~IOF243-01	-	2018/12/21 5:08:18 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	19	*54VialPlate*	2
21	5898852~IOF244-01	-	2018/12/21 5:23:53 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	20	*54VialPlate*	2
22	5898852~IOF245-01	-	2018/12/21 5:39:28 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	21	*54VialPlate*	2
23	5898852~IOF246-01	-	2018/12/21 5:55:03 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	22	*54VialPlate*	2
24	CCV	-	2018/12/21 6:10:38 PM	PFC_181221\WS#5898852.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	5	*54VialPlate*	2

DoD Projects - Internal Data Validation Checklist

Run date: 2018|12|21

Worksheet # (s): 5899819

Analysis: PFOSALCM-W

	Primary review by the analyst - 1st 100 % analysis review	1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria		✓		✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, SRM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria	✓			✓
8	Method Blank meets acceptance criteria	✓			✓
9	Matrix Spike recovery(s) meets acceptance criteria	✓			✓
10	Duplicate precision meets acceptance criteria	✓			✓
11	QC is documented on the run logs	✓			✓
12	Runs checked for carryover	✓			✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed			✓	✓
17	Dilution factors (where justified) have been checked for correctness and entered	✓			✓
18	Analytical observations/anomalies documented in LIMS			✓	✓
19	Random calculation checked and in correct units	✓			✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated			✓	✓
22	Transferred data is validated in LIMS for correctness	✓			✓
23	Data package assembled (where required)	✓			✓

Reviewed by: AD Date: 2018|12|27

Comments:

	Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review	yes	no	n/a	
1	Repeats documented and referenced			✓	
2	Method and sample deviations noted, anomalies described (if applicable)	✓			
3	Data and QC validated in LIMS	✓			
4	Random calculation checked	✓			
5	Benchsheet (s) signed and dated	✓			
6	Data Package (if required) checked for completeness	✓			

Reviewed by: [signature] Date: 2018/12/27

Comments:

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5899819 | Testcode: PFOSALCR-W

Sample Preparation

#	Item	yes	no	n/a
1	Samples extracted within hold time		–	
2	Client sample ID verified against Lab ID (waters & oils)			
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	–		
4	Height of sediment or if sample was decanted, recorded on worksheet	–		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	–		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	–		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	–		
8	If performed any additional dilution clearly recorded	–		
9	Matrix spike / Duplicate performed on IOL samples if present			–
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	–		
11	Spiking process witnessed and signed off	–		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			–
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			–
14	Job Remarks reviewed on 2nd page of worksheet.	–		
15	Worksheet and reagent tracking record completed and authorized.	–		

Reviewed by: H,N | Date: 2018/12/20

Comments:

Worksheet Approval

#	Item	yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

NA

Refer to BRL FCD-00002/9

AD

2018/12/27

Reviewed by: | Date:

Comments:

Worksheet Validation

#	Item	yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: | Date:

Comments:

WS# : 5899819

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Thursday, December 20, 2018

Assigned to : Mira Nasser

Test Code : PFOSALCM-W

Instrument Id:

Test Description : PFOS and PFOA in water by LC-MS/MS

Job Number	Sample Number	D	Sample ID	F	sed % ~~M~~oisture	mL Wt or Vol	mL Final Vol	DF or AF	# Cont	Expiry Date	Test DeadLine	Criteria	Extract Date
	MTRX SPK	0	PFOS IOF247-01		<0.1	278	6	1x					2018/12/20
	MTRX SPK	1	PFOS IOF247-01		<0.1	285	6	1x					2018/12/20
	SPIKE		PFOS		0	125	3	1x					2018/12/20
	BLANK				0	125	3	1x					2018/12/20
B8W8572	*IMQ358-01R		[redacted]		<0.1	125	3	1x	2	2018/12/20	2018/12/20 23:00	DOD	2018/12/20
B8W8572	*IMW968-00C		[redacted]		<0.1	~~25~~ 246	6	~~1x~~ 10x	2	2018/12/19	2018/12/20 23:00	DOD	2018/12/20
B8W8572	*IMW970-00C		[redacted]		<0.1	250	6	1x	2	2018/12/20	2018/12/20 23:00	DOD	2018/12/20
B8W8572	*IMW971-00C		[redacted]		<0.1	250	6	1x	2	2018/12/19	2018/12/20 23:00	DOD	2018/12/20
B8X2476	*INO671-01R		[redacted]		<0.1	125	3	1x	2	2018/12/20	2018/12/27 23:00	DOD	2018/12/20
B8X5580	*IOF247-01R		GP017		<0.1	260	6	1x	4	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF248-01R		GP018		<0.1	256	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF249-01R		GP019		<0.1	272	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF250-01R		GP020		<0.1	282	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF251-01R		GP021		<0.1	256	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF252-01R		GP022		<0.1	264	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF253-01R		GP023		<0.1	285	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF255-01R		GP025		<0.1	278	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF256-01R		GP026		<0.1	262	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20
B8X5580	*IOF257-01R		GP027		<0.1	250	6	1x	2	2018/12/21	2018/12/31 23:00	DOD	2018/12/20

2018/12/27 MIN

Remarks:

Samples extracted by: Mira Nasser 2018/12/27 MIN

Instrumentation performed by: DAD Date: 2018/12/21

Calculations performed by: AD Date: 2018/12/27

Validated by: AD Date: 2018/12/27

Job No.	Rep / Client Name / Remarks	Contact	Client Tier	National 2018/12/20 HN
GB8W8572	[redacted]			
GB8X2476				
GB8X5580	SP8 Earth Toxics Inc	Brian Nagy	Tier 5 (Enviro.)	AECOM

DKN, nreg, PFOSALCM-W/PFAADW-W Standard Navy 14 PFAS MS/MSD required on IOF242, IOF247, IOF254
Sample: GP005 placed on HOLD as per client request SP8 18/12/19 Project #: N62742-12-D-1829

Job	Sample	Lab Comments
	MTRX SPK	
	MTRX SPK	
	SPIKE	
	BLANK	
B8W8572	IMQ358-01R	
B8W8572	IMW968-00C	
B8W8572	IMW970-00C	
B8W8572	IMW971-00C	
B8X2476	INO671-01R	
B8X5580	IOF247-01R	
B8X5580	IOF248-01R	
B8X5580	IOF249-01R	
B8X5580	IOF250-01R	
B8X5580	IOF251-01R	
B8X5580	IOF252-01R	
B8X5580	IOF253-01R	
B8X5580	IOF255-01R	
B8X5580	IOF256-01R	
B8X5580	IOF257-01R	

Folder: 20181221

AD
2018/12/27

HPLC/LCMS Calibration Standard Preparation Sheet
Worksheet : 5899819

PFOSALCM-W (SPE)/ PFOSLOW-W					
Calibration Standard	**Volume of MeOH (uL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	2825	25		SK-8290	150
S2	2800	50	100 ng/mL	(1/3)	150
S3	2700	150			150
S4	2813	37.5		I-5563	150
S5	2775	75	1 ug/mL	(1/3)	150
S6	2725	12.5 125			150
ICV	2788	62.5	1 ug/mL	I-5562	150
IB	2850	NA		(1/3)	150

PFOSALCM-W (High)						
Calibration Standard	**Volume of MeOH (uL)**	**Volume of Water (mL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	480	0.75	20			100
S2	463	0.75	37.5	30 ng/mL		100
S3	485	0.75	15			100
S4	463	0.75	37.5	300 ng/mL		100
S5	478	0.75	22.5	1 ug/mL		100
S6	463	0.75	37.5			100
ICV	500	0.75	18	1 ug/mL		100
IB	500	0.75	NA			100

PFOSALCM-S					
Calibration Standard	**Volume of MeOH (uL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	1885	15			100
S2	1870	30	100 ng/mL		100
S3	1810	90			100
S4	1878	22.5			100
S5	1855	45	1 ug/mL		100
S6	1825	75			100
ICV	1863	37.5	1 ug/mL		100
IB	1900	NA			100

PFC-TI					
Calibration Standard	**Volume of MeOH (uL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	1890	10			100
S2	1880	20	100 ng/mL		100
S3	1840	60			100
S4	1885	15			100
S5	1870	30	1 ug/mL		100
S6	1850	50			100
ICV	1875	25	1 ug/mL		100

CLO4LCMS-W/ CLO4LCMS-S				
Calibration Standard	**Volume of Water (mL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**
S1	9.95	50		
S2	9.9	100		
S3	9.75	250	10ug/L	
S4	9.5	500		
S5	9	1000		
S6	8	2000		
ICV	1	1000	10 ug/L	

MORPH-L					
Calibration Standard	**Volume of Water (mL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	1	20	200 ug/L		50
S2	1	50			50
S3	1	20	2500 ug/L		50
S4	1	80			50
S5	1	200			50
S6	1	400			50
ICV	1	80	2500 ug/L		50

STERIL-S					
Calibration Standard	**Volume of 60: 40 Water : MEOH (mL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**	**Internal Standard (uL)**
S1	5	20	*****		50
S2	5	30	Solution B		50
S3	5	40			50
S4	5	80			50
S5	5	22	*****		50
S6	5	40	Solution A		50
ICV	5	20	*****		50

GLYPHO-LIQ/ GLYPHOLO-S				
Calibration Standard	**Volume of Water (mL)**	**Amount Spiked (uL)**	**Solution Conc.**	**Solution ID#**
S1	2	8		
S2	2	20		
S3	2	40	2.5 ug/mL	
S4	2	60		
S5	2	80		
ICV	2	40	2.5 ug/mL	

******* Concentration of individual parameters in Solution A & Solution B varies**

witnessed by, GGZ 2018/12/20

Worksheet Reagent Tracking Record

Worksheet # 5899819

Surrogate/Spike solutions	√	Solution ID #	Conc.	Volume (µL) Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
Comp. PFC Working Solution A	✓	I_5562 (1/3)	1ug/mL	75	21 62.5	75	21 62.5	NA	NA
PFC Internal Standard Solution	✓	SI-7291 (3/4) GSZ	50/125 ng/mL	200	100 150	200	100 150	200	100/150
PFC Injection IS	✓	SI-7239 (4/4) GSZ	10/500 ng/mL	20	20	20	20	20	20
ICV	✓	I-5562 (1/3)	1µg/mL	62.5µL					

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared
DCM				50% NaOH			
Ottawa Sand				o-Phosphoric Acid			
Methanol	✓	SHBK5051	2018/12/20	Borax			
2-Propanol (IPA)				Calcium Chloride			
Acetonitrile				EDTA			
Sodium Sulfate				Phosphate Buffer			
70:30 Methanol: Water				Sodium Thiosulphate			
60:40 Water: Methanol	✓	PRLRE124-168		DNPH			
DCM:Ethyl Ether (75:25)				FMOC			
Hexane:IPA (98:2)				5M Acetate Buffer			
2% Formic Acid	✓	PRLRE124-169		0.2% NH_4OH	✓	PRLRE124-177	
0.2% Formic Acid				Leachate Fluid			
0.05M KOH				Reagent Water	✓	58248	2018/12/20
0.05M HCl							
Carbon	✓	107564					

*Spiked by: MIN

Spike Date: 2018/12/20

Spike Syringe/Pipette ID#: M23487B

Int. Std Syringe/Pipette ID#: 236551H

*Spiking Witnessed by: GSZ

Final pH:

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #
Pipettor K19865F, K522906, 236551H		SPE Cartridge	003938 072A	✓	QC Balance ID	FC-1
	✓	Filter			Thermometer ID &Temp	
Dispenser ~~FC-1~~ MIN 2018/12/20	✓	Centrifuge	42148683	✓		
		Sonicator				

Bottle Tracking

Bottle# 20264

Cap# 20259

Systems plus Lot# 18-11-13

Comments: Vol. cylinder # 3026

* - SPIKING OF QC's & SAMPLES MUST BE WITNESSED AT ALL TIMES.

Bench Level Planned Deviation / Non-Conformance Form

Date: 2018/12/28

Affected SOP #, and/or WI /section(s): CAM SOP-00894/14, Section 13.2.2

Affected Job(s) / WS(s): B8W8572, B8X2476 & B8X5580 / 5899819

Affected samples ID: All samples associated with worksheet 5899819

Initiated by (print name) Adam Robinson (sign) AL

DESCRIPTION:

The matrix spike (MS) and matrix spike duplicate (MSD) were not spiked according to the procedure outlined in CAM SOP-00894 Sec. 13.2.2.

INVESTIGATION/CAUSE:

The samples used for MS/MSD were received in 250 mL containers instead of the standard 125 mL container typically used for this analysis. Due to the increased sample volume, the spiking volume should have been increased proportionally, however, spiking was performed based on a 125 mL sample volume (refer to CAM FCD-00710; Reagent Tracking Record for spiking volume).

RATIONALE & ACTION TAKEN:

MS/MSD recoveries were calculated based on the adjusted target concentration.

EFFECT ON DATA QUALITY (Evaluation of the significance):

There is no impact on data quality. MS/MSD were spiked >LOQ and <mid-level Cal Standard in accordance with DoD QSM 5.1.1 table B-15. MS/MSD recoveries were within method and project specified acceptance criteria.

STEPS TAKEN TO PREVENT FURTHER OCCURRENCE:

The Analyst was informed of the incident and reminded to verify sample and spiking volumes prior to proceeding.

No further action will be taken as this is an isolated incident.

(Check one box only)

☐ Bench Level Planned Deviation ☒ Bench Level Non-Conformance

Manager or Supervisor or Section Head : (PRINT NAME) Alicia Rahamat

SIGNATURE: Mahamat **DATE:** 2018/12/28

Definitions:

Bench Level Planned Deviation: Changes to approved process/SOP are planned before their implementation

Bench Level Non-Conformance: Changes to approved process/SOP discovered after their implementation

Worksheet Number: **5899819**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	Units	MTRX SPK	MTRX SPK Dup1	SPIKE	BLANK	B8W8572 IMQ358 ReWork	B8W8572 IMW968 ReWork
6:2 Fluorotelomer sulfonate	ug/L	103.8	94.9	102.66708	0	0	0.07695954
8:2 Fluorotelomer sulfonate	ug/L	104.2	97.8	102.00361	0	0	0
EtFOSA	ug/L	96.6	95.2	90.49410	0	N/A*******	N/A*******
EtFOSAA	ug/L	98.2	96.7	96.85806	0	N/A*******	N/A*******
EtFOSE	ug/L	96.5	93.0	98.70457	0	N/A*******	N/A*******
MeFOSA	ug/L	92.6	90.6	96.84136	0	N/A*******	N/A*******
MeFOSAA	ug/L	89.5	98.1	97.65021	0	N/A*******	N/A*******
MeFOSE	ug/L	97.1	89.1	101.77439	0	N/A*******	N/A*******
Perfluorobutanoic acid	ug/L	97.7	92.5	100.97038	0	0	0.01688272
Perfluorobutane Sulfonate (PFBS)	ug/L	98.8	94.7	104.85856	0	0	0.01186966
Perfluorodecane Sulfonate	ug/L	90.9	89.7	95.61025	0	N/A*******	N/A*******
Perfluoroheptanoic Acid (PFHpA)	ug/L	95.7	90.9	103.12043	0	0	0.02728290
Perfluoroheptane sulfonate	ug/L	96.4	92.1	101.82288	0	0	0.01883056
Perfluorohexanoic Acid (PFHxA)	ug/L	100.3	93.8	101.55223	0	0	0.06559451
Perfluorohexane Sulfonate (PFHxS)	ug/L	96.6	96.6	102.17032	0	0	0.25475164
Perfluorononanoic Acid (PFNA)	ug/L	101.7	99.6	102.78840	0	0	0.00374897
Perfluorooctane Sulfonamide (PFOSA)	ug/L	97.3	93.9	99.55712	0	0	0
Perfluoropentanoic Acid (PFPeA)	ug/L	95.4	91.4	98.83985	0	0	0.04862056
Perfluorotetradecanoic Acid	ug/L	98.2	96.4	101.20354	0	N/A*******	N/A*******
Perfluorotridecanoic Acid	ug/L	112.2	107.8	105.10178	0	N/A*******	N/A*******
Perfluoroundecanoic Acid (PFUnA)	ug/L	96.5	91.3	103.21209	0	N/A*******	N/A*******
Perfluorodecanoic Acid (PFDA)	ug/L	93.1	91.3	101.52553	0	N/A*******	N/A*******
Perfluorododecanoic Acid (PFDoA)	ug/L	96.6	95.1	103.28417	0	N/A*******	N/A*******
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	100.8	97.9	103.32299	0	0	0.04917905
Perfluorooctane Sulfonate (PFOS)	ug/L	99.3	97.9	97.75446	0	0	0.46914323
13C2-6:2 Fluorotelomer sulfonate	ug/L	90.3115584	94.3555237	95.5970595	107.006729	110.351927	93.3561239
13C2-8:2 Fluorotelomer sulfonate	ug/L	87.4107604	89.7365276	94.8592950	103.112261	98.6876456	92.8589236
13C2-perfluorotetradecanoic acid	ug/L	66.4420125	67.4734593	82.8452113	80.8204066	N/A*******	N/A*******
13C3-Perfluorobutanesulfonic acid	ug/L	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
13C4-Perfluorobutanoic acid	ug/L	83.7878657	87.2638126	92.1176971	95.2068273	94.3610837	57.4395375
D3-MeFOSAA	ug/L	82.6167564	81.8255343	81.9679545	87.7232538	N/A*******	N/A*******
D5-EtFOSAA	ug/L	79.7583557	86.6972437	81.1427977	83.8399900	N/A*******	N/A*******
D7-MeFOSE	ug/L	77.4784792	85.1319532	78.2074694	83.0879443	N/A*******	N/A*******
D9-EtFOSE	ug/L	72.3242570	78.4634821	77.2207502	78.5434349	N/A*******	N/A*******
13C2-Perfluorodecanoic acid	ug/L	89.7593639	88.7668315	93.6051425	92.0208506	N/A*******	N/A*******
13C2-Perfluorododecanoic acid	ug/L	82.5736247	83.5178423	86.2942895	87.2908591	N/A*******	N/A*******
13C2-Perfluorohexanoic acid	ug/L	85.2538743	89.2517807	93.8795021	97.6616784	98.9414733	90.4078799
13C2-Perfluoroundecanoic acid	ug/L	84.9000130	87.4037378	92.6112596	91.7074203	N/A*******	N/A*******
13C4-Perfluoroheptanoic acid	ug/L	89.6077077	92.5631772	92.5538254	99.9373368	98.3758951	94.9771850
13C5-Perfluorononanoic acid	ug/L	85.1963957	83.2448388	92.1424750	96.7371519	95.3599950	92.4054403
13C4-Perfluorooctanoic acid	ug/L	88.9548535	89.4717409	94.9466217	97.9570753	97.0425951	89.6225709
13C4-Perfluorooctanesulfonate	ug/L	87.2574837	90.2843271	101.299685	103.872548	103.422088	92.2188445
13C5-Perfluoropentanoic acid	ug/L	85.4531347	86.9442048	91.9653845	94.6508870	96.8269364	73.2168123
13C8-Perfluorooctane Sulfonamide	ug/L	86.0689352	88.4115537	89.2846313	90.8650627	93.5820664	85.0213486
18O2-Perfluorohexanesulfonate	ug/L	88.6856225	90.3573540	92.5074700	100.830476	104.177562	99.1579563

Worksheet Number: **5899819**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	B8W8572 IMW970 ReWork	B8W8572 IMW971 ReWork	B8X2476 INO671	DL	B8X5580 IOF247	B8X5580 IOF248	DL
6:2 Fluorotelomer sulfonate	0	0	0	0.02	N/A*******	N/A*******	0.019
8:2 Fluorotelomer sulfonate	0	0	0	0.02	N/A*******	N/A*******	0.019
EtFOSA	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******	0.019
EtFOSAA	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
EtFOSE	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******	0.019
MeFOSA	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******	0.019
MeFOSAA	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
MeFOSE	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******	0.019
Perfluorobutanoic acid	0.00317292	0.00492541	0	0.02	N/A*******	N/A*******	0.019
Perfluorobutane Sulfonate (PFBS)	0	0	0	0.02	0	0	0.019
Perfluorodecane Sulfonate	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******	0.019
Perfluoroheptanoic Acid (PFHpA)	0	0	0	0.02	0	0	0.019
Perfluoroheptane sulfonate	0	0	0	0.02	N/A*******	N/A*******	0.019
Perfluorohexanoic Acid (PFHxA)	0	0	0	0.02	0	0	0.019
Perfluorohexane Sulfonate (PFHxS)	0	0	0	0.02	0	0	0.019
Perfluorononanoic Acid (PFNA)	0	0	0	0.02	0	0	0.019
Perfluorooctane Sulfonamide (PFOSA)	0	0	0	0.02	N/A*******	N/A*******	0.019
Perfluoropentanoic Acid (PFPeA)	0	0	0	0.02	N/A*******	N/A*******	0.019
Perfluorotetradecanoic Acid	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
Perfluorotridecanoic Acid	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
Perfluoroundecanoic Acid (PFUnA)	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
Perfluorodecanoic Acid (PFDA)	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
Perfluorododecanoic Acid (PFDoA)	N/A*******	N/A*******	N/A*******	0.02	0	0	0.019
Perfluoro-n-Octanoic Acid (PFOA)	0	0	0	0.02	0	0	0.019
Perfluorooctane Sulfonate (PFOS)	0	0	0	0.02	0	0	0.019
13C2-6:2 Fluorotelomer sulfonate	99.1836017	90.6199383	102.900292		N/A*******	N/A*******	
13C2-8:2 Fluorotelomer sulfonate	93.2115010	97.4596275	103.648661		N/A*******	N/A*******	
13C2-perfluorotetradecanoic acid	N/A*******	N/A*******	N/A*******		62.3330975	60.6846554	
13C3-Perfluorobutanesulfonic acid	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******	
13C4-Perfluorobutanoic acid	62.9219923	66.6226487	91.3395818		N/A*******	N/A*******	
D3-MeFOSAA	N/A*******	N/A*******	N/A*******		80.7872793	80.2791170	
D5-EtFOSAA	N/A*******	N/A*******	N/A*******		76.3256750	78.5231115	
D7-MeFOSE	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******	
D9-EtFOSE	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******	
13C2-Perfluorodecanoic acid	N/A*******	N/A*******	N/A*******		80.4573020	85.6673898	
13C2-Perfluorododecanoic acid	N/A*******	N/A*******	N/A*******		79.0693082	80.9489971	
13C2-Perfluorohexanoic acid	93.4978060	90.0529587	91.5921112		81.7079602	88.3318668	
13C2-Perfluoroundecanoic acid	N/A*******	N/A*******	N/A*******		77.1376908	82.7644390	
13C4-Perfluoroheptanoic acid	100.410263	92.3727433	97.8822186		83.0991213	86.4685298	
13C5-Perfluorononanoic acid	89.9557375	93.9956300	94.6089088		86.1041669	83.7845726	
13C4-Perfluorooctanoic acid	97.7237845	92.3195325	95.1180688		83.9358044	82.9576558	
13C4-Perfluorooctanesulfonate	103.224249	106.123987	99.8750542		84.4940369	87.8211614	
13C5-Perfluoropentanoic acid	57.5446811	91.2060078	93.0983909		N/A*******	N/A*******	
13C8-Perfluorooctane Sulfonamide	87.3506027	89.2703753	92.8111241		N/A*******	N/A*******	
18O2-Perfluorohexanesulfonate	106.879413	94.3796260	101.875122		87.7662739	92.2831837	

Worksheet Number: **5899819**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	B8X5580 IOF249	B8X5580 IOF250	DL	B8X5580 IOF251	B8X5580 IOF252	DL	B8X5580 IOF253
6:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
8:2 Fluorotelomer sulfonate	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
EtFOSA	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
EtFOSAA	0	0	0.018	0	0	0.019	0
EtFOSE	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
MeFOSA	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
MeFOSAA	0	0	0.018	0	0	0.019	0
MeFOSE	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluorobutanoic acid	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluorobutane Sulfonate (PFBS)	0	0	0.018	0	0.00685833	0.019	0
Perfluorodecane Sulfonate	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluoroheptanoic Acid (PFHpA)	0	0	0.018	0.00698249	0.00425906	0.019	0
Perfluoroheptane sulfonate	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluorohexanoic Acid (PFHxA)	0	0	0.018	0.01160977	0.00895526	0.019	0
Perfluorohexane Sulfonate (PFHxS)	0	0	0.018	0.00995477	0.02663809	0.019	0
Perfluorononanoic Acid (PFNA)	0	0	0.018	0	0	0.019	0
Perfluorooctane Sulfonamide (PFOSA)	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluoropentanoic Acid (PFPeA)	N/A*******	N/A*******	0.018	N/A*******	N/A*******	0.019	N/A*******
Perfluorotetradecanoic Acid	0	0	0.018	0	0	0.019	0
Perfluorotridecanoic Acid	0	0	0.018	0	0	0.019	0
Perfluoroundecanoic Acid (PFUnA)	0	0	0.018	0	0	0.019	0
Perfluorodecanoic Acid (PFDA)	0	0	0.018	0	0	0.019	0
Perfluorododecanoic Acid (PFDoA)	0	0	0.018	0	0	0.019	0
Perfluoro-n-Octanoic Acid (PFOA)	0	0	0.018	0.00477864	0.00220589	0.019	0
Perfluorooctane Sulfonate (PFOS)	0	0	0.018	0.04765165	0.05847436	0.019	0
13C2-6:2 Fluorotelomer sulfonate	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
13C2-8:2 Fluorotelomer sulfonate	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
13C2-perfluorotetradecanoic acid	64.1297472	61.5511530		77.4360874	78.0440847		78.1193470
13C3-Perfluorobutanesulfonic acid	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
13C4-Perfluorobutanoic acid	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
D3-MeFOSAA	85.6072429	81.7857961		87.6639455	90.1845480		84.0873852
D5-EtFOSAA	82.1020031	82.3098268		83.9656019	93.2494856		80.5608024
D7-MeFOSE	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
D9-EtFOSE	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
13C2-Perfluorodecanoic acid	85.9043360	85.1394884		80.5682767	87.9701825		84.9571878
13C2-Perfluorododecanoic acid	81.0785486	82.2606459		86.9882496	88.8925037		87.6850401
13C2-Perfluorohexanoic acid	88.7664943	87.0703044		87.0481565	89.5422848		90.4905734
13C2-Perfluoroundecanoic acid	89.0312657	84.1060167		83.7101358	86.6753404		89.6360712
13C4-Perfluoroheptanoic acid	90.7793709	92.4907635		91.4511246	90.0047268		93.6600668
13C5-Perfluorononanoic acid	86.1934762	92.1535460		88.8725668	91.1512093		92.8800976
13C4-Perfluorooctanoic acid	87.5403050	94.9520816		88.7168626	92.3282235		91.1390225
13C4-Perfluorooctanesulfonate	89.0180334	93.4253810		96.1729762	99.7104097		92.4429274
13C5-Perfluoropentanoic acid	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
13C8-Perfluorooctane Sulfonamide	N/A*******	N/A*******		N/A*******	N/A*******		N/A*******
18O2-Perfluorohexanesulfonate	89.7058014	95.1384083		95.0821638	93.8219919		96.1712359

Worksheet Number: **5899819**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

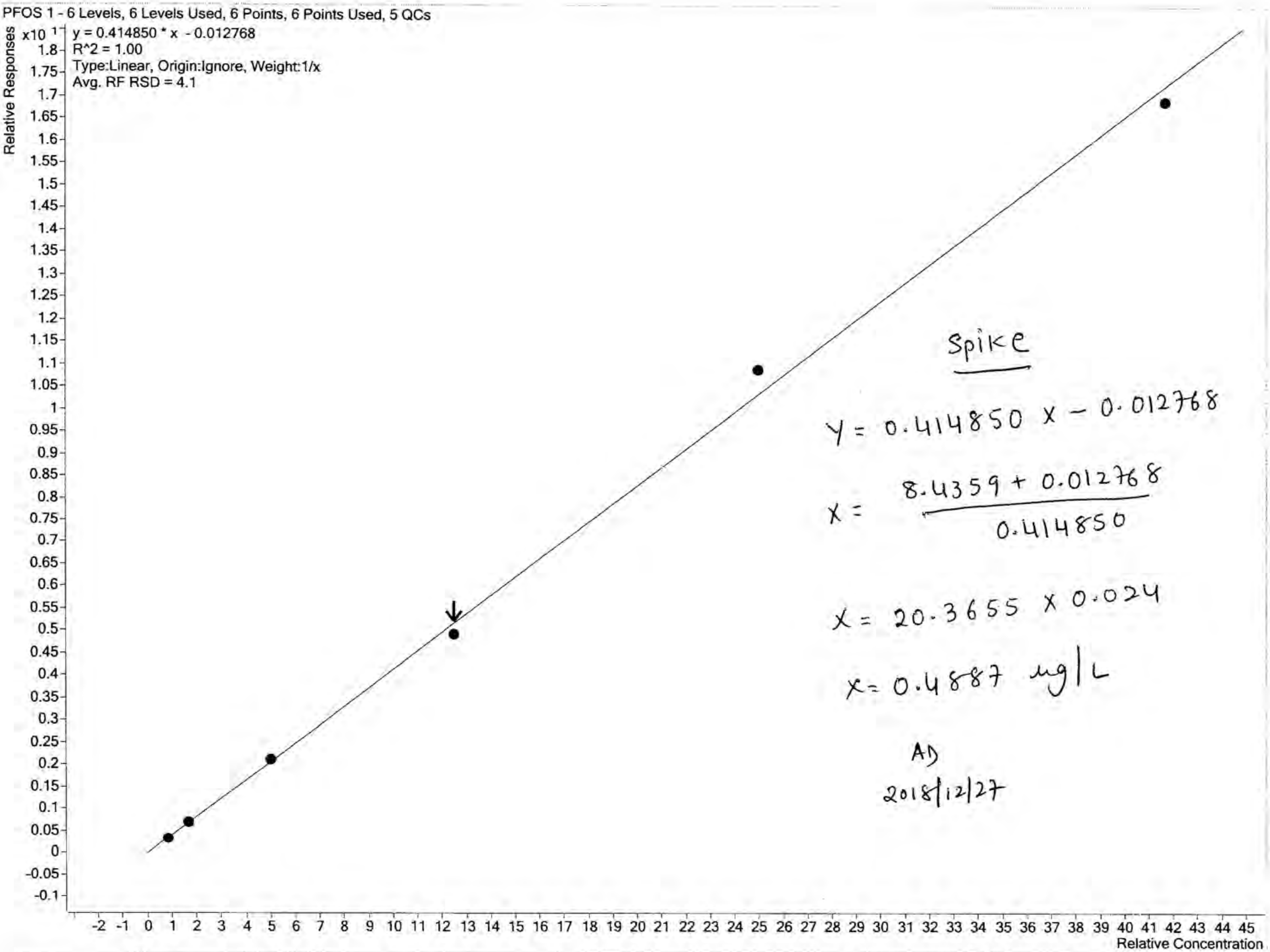
Parameter Name	DL	B8X5580 IOF255	DL	B8X5580 IOF256	DL	B8X5580 IOF257	DL
6:2 Fluorotelomer sulfonate	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
8:2 Fluorotelomer sulfonate	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
EtFOSA	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
EtFOSAA	0.017	0	0.018	0	0.019	0	0.02
EtFOSE	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
MeFOSA	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
MeFOSAA	0.017	0	0.018	0	0.019	0	0.02
MeFOSE	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluorobutanoic acid	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluorobutane Sulfonate (PFBS)	0.017	0	0.018	0	0.019	0	0.02
Perfluorodecane Sulfonate	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluoroheptanoic Acid (PFHpA)	0.017	0.00352153	0.018	0	0.019	0	0.02
Perfluoroheptane sulfonate	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluorohexanoic Acid (PFHxA)	0.017	0.00655724	0.018	0	0.019	0	0.02
Perfluorohexane Sulfonate (PFHxS)	0.017	0.01048753	0.018	0	0.019	0	0.02
Perfluorononanoic Acid (PFNA)	0.017	0	0.018	0	0.019	0	0.02
Perfluorooctane Sulfonamide (PFOSA)	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluoropentanoic Acid (PFPeA)	0.017	N/A*******	0.018	N/A*******	0.019	N/A*******	0.02
Perfluorotetradecanoic Acid	0.017	0	0.018	0	0.019	0	0.02
Perfluorotridecanoic Acid	0.017	0	0.018	0	0.019	0	0.02
Perfluoroundecanoic Acid (PFUnA)	0.017	0	0.018	0	0.019	0	0.02
Perfluorodecanoic Acid (PFDA)	0.017	0	0.018	0	0.019	0	0.02
Perfluorododecanoic Acid (PFDoA)	0.017	0	0.018	0	0.019	0	0.02
Perfluoro-n-Octanoic Acid (PFOA)	0.017	0.00200566	0.018	0	0.019	0	0.02
Perfluorooctane Sulfonate (PFOS)	0.017	0.03064931	0.018	0	0.019	0	0.02
13C2-6:2 Fluorotelomer sulfonate		N/A*******		N/A*******		N/A*******	
13C2-8:2 Fluorotelomer sulfonate		N/A*******		N/A*******		N/A*******	
13C2-perfluorotetradecanoic acid		76.7657422		76.6463704		78.6214418	
13C3-Perfluorobutanesulfonic acid		N/A*******		N/A*******		N/A*******	
13C4-Perfluorobutanoic acid		N/A*******		N/A*******		N/A*******	
D3-MeFOSAA		81.2422941		81.7006696		77.9060981	
D5-EtFOSAA		83.0248491		79.3043472		78.5062845	
D7-MeFOSE		N/A*******		N/A*******		N/A*******	
D9-EtFOSE		N/A*******		N/A*******		N/A*******	
13C2-Perfluorodecanoic acid		88.9650817		82.4116036		83.4983805	
13C2-Perfluorododecanoic acid		82.8624565		81.0323839		82.2990529	
13C2-Perfluorohexanoic acid		83.7567416		82.4902970		87.7241568	
13C2-Perfluoroundecanoic acid		81.9664627		80.6353266		88.3313297	
13C4-Perfluoroheptanoic acid		85.2269059		81.5661597		87.0720677	
13C5-Perfluorononanoic acid		88.5474753		81.2194986		90.0844572	
13C4-Perfluorooctanoic acid		84.7571609		82.7204853		89.9662889	
13C4-Perfluorooctanesulfonate		89.9777927		82.4706125		91.6628779	
13C5-Perfluoropentanoic acid		N/A*******		N/A*******		N/A*******	
13C8-Perfluorooctane Sulfonamide		N/A*******		N/A*******		N/A*******	
18O2-Perfluorohexanesulfonate		89.8424722		86.2065347		90.2714096	

Worksheet Number: **5899819**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	RDL	MDL	IDL				
6:2 Fluorotelomer sulfonate	0.02	0.0066	0				
8:2 Fluorotelomer sulfonate	0.02	0.0066	0				
EtFOSA	0.02	0.01	0				
EtFOSAA	0.02	0.0033	0				
EtFOSE	0.02	0.0079	0				
MeFOSA	0.02	0.013	0				
MeFOSAA	0.02	0.0029	0				
MeFOSE	0.02	0.012	0				
Perfluorobutanoic acid	0.02	0.0055	0				
Perfluorobutane Sulfonate (PFBS)	0.02	0.0054	0				
Perfluorodecane Sulfonate	0.02	0.006	0				
Perfluoroheptanoic Acid (PFHpA)	0.02	0.0074	0				
Perfluoroheptane sulfonate	0.02	0.008	0				
Perfluorohexanoic Acid (PFHxA)	0.02	0.0035	0				
Perfluorohexane Sulfonate (PFHxS)	0.02	0.0056	0				
Perfluorononanoic Acid (PFNA)	0.02	0.0087	0				
Perfluorooctane Sulfonamide (PFOSA)	0.02	0.0034	0				
Perfluoropentanoic Acid (PFPeA)	0.02	0.0075	0				
Perfluorotetradecanoic Acid	0.02	0.0027	0				
Perfluorotridecanoic Acid	0.02	0.0038	0				
Perfluoroundecanoic Acid (PFUnA)	0.02	0.0025	0				
Perfluorodecanoic Acid (PFDA)	0.02	0.0061	0				
Perfluorododecanoic Acid (PFDoA)	0.02	0.005	0				
Perfluoro-n-Octanoic Acid (PFOA)	0.02	0.0033	0				
Perfluorooctane Sulfonate (PFOS)	0.02	0.006	0				
13C2-6:2 Fluorotelomer sulfonate							
13C2-8:2 Fluorotelomer sulfonate							
13C2-perfluorotetradecanoic acid							
13C3-Perfluorobutanesulfonic acid							
13C4-Perfluorobutanoic acid							
D3-MeFOSAA							
D5-EtFOSAA							
D7-MeFOSE							
D9-EtFOSE							
13C2-Perfluorodecanoic acid							
13C2-Perfluorododecanoic acid							
13C2-Perfluorohexanoic acid							
13C2-Perfluoroundecanoic acid							
13C4-Perfluoroheptanoic acid							
13C5-Perfluorononanoic acid							
13C4-Perfluorooctanoic acid							
13C4-Perfluorooctanesulfonate							
13C5-Perfluoropentanoic acid							
13C8-Perfluorooctane Sulfonamide							
18O2-Perfluorohexanesulfonate							



Spike

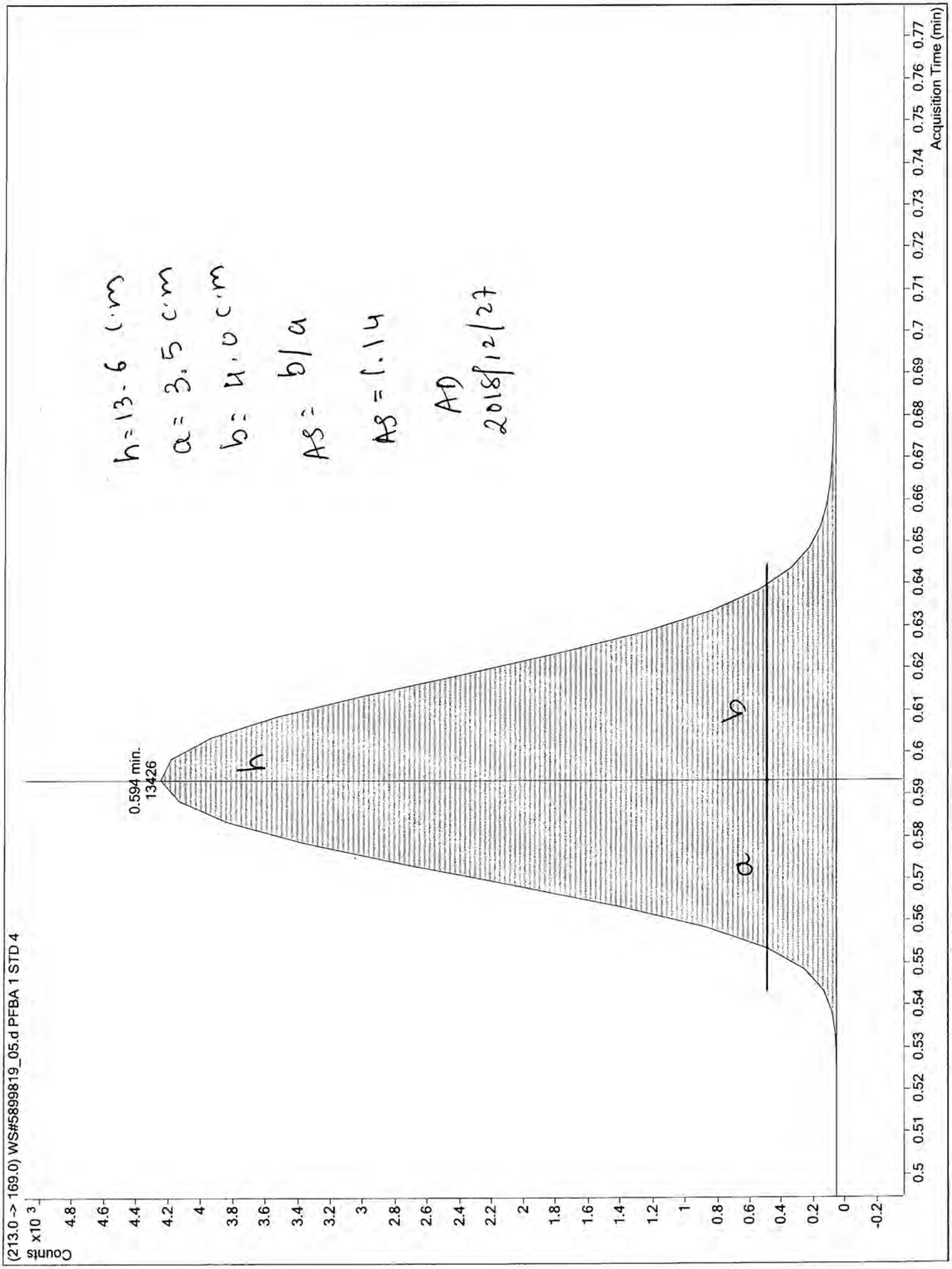
$$y = 0.414850\ x - 0.012768$$

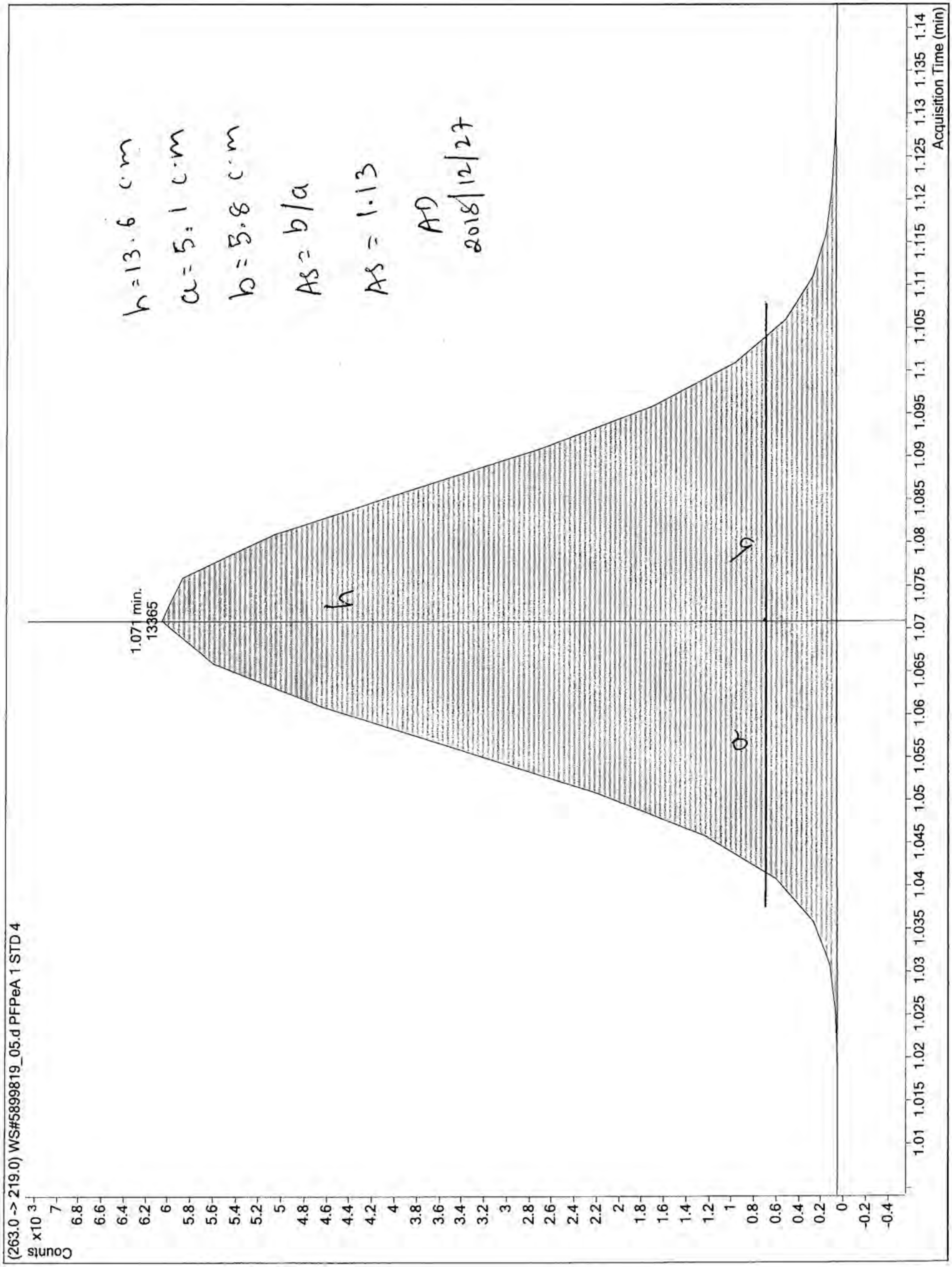
$$x = \frac{8.4359 + 0.012768}{0.414850}$$

$$x = 20.3655 \times 0.024$$

$x = 0.4887$ ug/L

AD
2018/12/27


(213.0 -> 169.0) WS#5899819_05.d PFBA 1 STD 4
Counts
x10 3
Acquisition Time (min)
0.594 min.
13426
h=13.6 cm
a= 3.5 cm
b= 4.0 cm
As= b/a
As = 1.14
AD
2018/12/27
h
a
b


(263.0 -> 219.0) WS#5899819_05.d PFPeA 1 STD 4
Counts
x10 3
1.071 min.
13365
Acquisition Time (min)
h=13.6 cm
a=5.1 cm
b=5.8 cm
As= b/a
As= 1.13
AD
2018/12/27
h
a
b

WorkSheet 5899819 Instrument Sequences

1.	5899819:MTRX SPK	MTRX SPK
2.	5899819:MTRX SPK:D1	MTRX SPK :D1
3.	5899819:SPIKE	SPIKE
4.	5899819:BLANK	BLANK
5.	5899819:IMQ358-01	[redacted]
6.	5899819:IMW968-00	[redacted]
7.	5899819:IMW970-00	[redacted]
8.	5899819:IMW971-00	[redacted]
9.	5899819:INO671-01	[redacted]
10.	5899819:IOF247-01	GP017
11.	5899819:IOF248-01	GP018
12.	5899819:IOF249-01	GP019
13.	5899819:IOF250-01	GP020
14.	5899819:IOF251-01	GP021
15.	5899819:IOF252-01	GP022
16.	5899819:IOF253-01	GP023
17.	5899819:IOF255-01	GP025
18.	5899819:IOF256-01	GP026
19.	5899819:IOF257-01	GP027

Report Name: Worksheet - Parameter Lists
Report Date: 2018/12/20

Test Code: **PFOSALCM-W**
Worksheet Number: **5899819**

Sample Number	Parameter Code	Parameter	
IMQ358-01	6:2FTS	6:2 Fluorotelomer sulfonate	*
IMW968-00	8:2FTS	8:2 Fluorotelomer sulfonate	*
IMW970-00	PFBA	Perfluorobutanoic acid	
IMW971-00	PFBS	Perfluorobutane Sulfonate (PFBS)	
INO671-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
	PFHPS	Perfluoroheptane sulfonate	
	PFHXA	Perfluorohexanoic Acid (PFHxA)	
	PFHXS	Perfluorohexane Sulfonate (PFHxS)	
	PFNA	Perfluorononanoic Acid (PFNA)	
	PFOSA	Perfluorooctane Sulfonamide (PFOSA)	
	PFPEA	Perfluoropentanoic Acid (PFPeA)	
	PFOA	Perfluoro-n-Octanoic Acid (PFOA)	
	PFOS	Perfluorooctane Sulfonate (PFOS)	
IOF247-01	ETFOSAA	EtFOSAA	*
IOF248-01	MEFOSAA	MeFOSAA	*
IOF249-01	PFBS	Perfluorobutane Sulfonate (PFBS)	
IOF250-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
IOF251-01	PFHXA	Perfluorohexanoic Acid (PFHxA)	
IOF252-01	PFHXS	Perfluorohexane Sulfonate (PFHxS)	
IOF253-01	PFNA	Perfluorononanoic Acid (PFNA)	
IOF255-01	PFTEDA	Perfluorotetradecanoic Acid	
IOF256-01	PFTRDA	Perfluorotridecanoic Acid	
IOF257-01	PFUNA	Perfluoroundecanoic Acid (PFUnA)	
	PFDA	Perfluorodecanoic Acid (PFDA)	
	PFDOA	Perfluorododecanoic Acid (PFDoA)	

* - This parameter is usually off, but will be reported for this group of samples!

Report Name: Worksheet - Parameter Lists
Report Date: 2018/12/20

Test Code: **PFOSALCM-W**
Worksheet Number: **5899819**

Sample Number	Parameter Code	Parameter
	PFOA	Perfluoro-n-Octanoic Acid (PFOA)
	PFOS	Perfluorooctane Sulfonate (PFOS)

* - This parameter is usually off, but will be reported for this group of samples!

Worklist Report

Agilent Technologies

Instrument Name:	LCMS04
Worklist Path:	D:\MassHunter\Worklists\PFCs\PFC_181221_Water_Low.wkl
Operator Name:	---
Run Type:	Standard Start
Part of Method to Run:	Acquisition Only
Execution of Acquisition-DA:	Synchronous
Acquisition Method Path:	D:\MassHunter\Acquisition Method
DA Method Path:	D:\MassHunter\methods
Data File Path:	D:\MassHunter\data\PFC\20181221\WS#5899819
Pre-Worklist Script:	---
Post-Worklist Script:	SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
Acquisition Clean Up Script:	---
Overlapped Injection:	No
Clear Sample Selection After Run:	Yes
Wait Time for Ready(Min):	10
Threshold Disk Value(GB):	10
Comment:	Column #355 MP A1: Solution #462 [FSRE18] MP B1: Methanol lot# SHBK5051, Sigma

DAD 2018.12.21

Verified by AKH 2018/12/21

Plate Barcode:

Plate	Barcode
P1	

Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	RINSE	P1-A1	PFC_Water_Low.m	WS#5899819_01.d	Sample		As Method	-
2	STD 1	P1-A2	PFC_Water_Low.m	WS#5899819_02.d	Calibration	STD 1	As Method	-
3	STD 2	P1-A3	PFC_Water_Low.m	WS#5899819_03.d	Calibration	STD 2	As Method	-
4	STD 3	P1-A4	PFC_Water_Low.m	WS#5899819_04.d	Calibration	STD 3	As Method	-
5	STD 4	P1-A5	PFC_Water_Low.m	WS#5899819_05.d	Calibration	STD 4	As Method	-
6	STD 5	P1-A6	PFC_Water_Low.m	WS#5899819_06.d	Calibration	STD 5	As Method	-
7	STD 6	P1-A7	PFC_Water_Low.m	WS#5899819_07.d	Calibration	STD 6	As Method	-

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
8	IB	P1-A8	PFC_Water_Low.m	WS#5899819_08.d	Sample		As Method	-
9	ICV	P1-A9	PFC_Water_Low.m	WS#5899819_09.d	QC	ICV	As Method	-
10	ISC	P1-A2	PFC_Water_Low.m	WS#5899819_10.d	QC	STD 1	As Method	-
11	5899819:BLANK	P1-B1	PFC_Water_Low.m	WS#5899819_11.d	Sample		As Method	
12	5899819:SPIKE	P1-B2	PFC_Water_Low.m	WS#5899819_12.d	QC	ICV	As Method	-
13	5899819:MTRX SPK	P1-B3	PFC_Water_Low.m	WS#5899819_13.d	QC	ICV	As Method	-
14	5899819:MTRX SPK:D1	P1-B4	PFC_Water_Low.m	WS#5899819_14.d	Sample		As Method	-
15	IB	P1-A8	PFC_Water_Low.m	WS#5899819_15.d	Sample		As Method	-
16	5899819:IMQ358-01	P1-B5	PFC_Water_Low.m	WS#5899819_16.d	QC	ICV	As Method	-
17	5899819:IMW968-00:10x	P1-B6	PFC_Water_Low.m	WS#5899819_17.d	Sample		As Method	-
18	5899819:IMW968-00	P1-B7	PFC_Water_Low.m	WS#5899819_18.d	Sample		As Method	-
19	IB	P1-A8	PFC_Water_Low.m	WS#5899819_19.d	Sample		As Method	-
20	5899819:IMW970-00	P1-B8	PFC_Water_Low.m	WS#5899819_20.d	Sample		As Method	-
21	5899819:IMW971-00	P1-B9	PFC_Water_Low.m	WS#5899819_21.d	Sample		As Method	-
22	5899819:INO671-01	P1-C1	PFC_Water_Low.m	WS#5899819_22.d	Sample		As Method	-
23	5899819:IOF247-01	P1-C2	PFC_Water_Low.m	WS#5899819_23.d	Sample		As Method	-
24	5899819:IOF248-01	P1-C3	PFC_Water_Low.m	WS#5899819_24.d	Sample		As Method	-
25	5899819:IOF249-01	P1-C4	PFC_Water_Low.m	WS#5899819_25.d	Sample		As Method	-
26	CCV	P1-A5	PFC_Water_Low.m	WS#5899819_26.d	ConCal	STD 4	As Method	-
27	5899819:IOF250-01	P1-C5	PFC_Water_Low.m	WS#5899819_27.d	Sample		As Method	-
28	5899819:IOF251-01	P1-C6	PFC_Water_Low.m	WS#5899819_28.d	ConCal	STD 4	As Method	-
29	5899819:IOF252-01	P1-C7	PFC_Water_Low.m	WS#5899819_29.d	Sample		As Method	-
30	5899819:IOF253-01	P1-C8	PFC_Water_Low.m	WS#5899819_30.d	Sample		As Method	-

Worklist Report

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
31	5899819:IOF255-01	P1-C9	PFC_Water_Low.m	WS#5899819_31.d	Sample		As Method	-
32	5899819:IOF256-01	P1-D1	PFC_Water_Low.m	WS#5899819_32.d	Sample		As Method	-
33	5899819:IOF257-01	P1-D2	PFC_Water_Low.m	WS#5899819_33.d	Sample		As Method	-
34	CCV	P1-A5	PFC_Water_Low.m	WS#5899819_34.d	ConCal	STD 4	As Method	-

Worklist Report

Agilent Technologies

Instrument Name:	LCMS04	**Worklist Path:**	D:\MassHunter\Worklists\PFCs\PFC_181221_Low_FOSAA.wkl

Operator Name: ---
Run Type: Standard Start
Part of Method to Run: Acquisition Only
Execution of Acquisition-DA: Synchronous
Acquisition Method Path: D:\MassHunter\Acquisition Method
DA Method Path: D:\MassHunter\methods
Data File Path: D:\MassHunter\data\PFC\20181221\WS#5899819_FOSAA
Pre-Worklist Script: ---
Post-Worklist Script: SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
Acquisition Clean Up Script: ---
Overlapped Injection: No
Clear Sample Selection After Run: Yes
Wait Time for Ready(Min): 10
Threshold Disk Value(GB): 10
Comment: Column #355
MP A1: Solution #462 [FSRE18]
MP B2: Solution #459 [FSRE18]

DAD 2018.12.21

Verified by AKH 2018/12/21

Plate Barcode:

Plate	Barcode
P1	

Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	RINSE	P1-A1	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_01.d	Sample		As Method	-
2	STD 1	P1-A2	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_02.d	Calibration	STD 1	As Method	-
3	STD 2	P1-A3	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_03.d	Calibration	STD 2	As Method	-
4	STD 3	P1-A4	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_04.d	Calibration	STD 3	As Method	-
5	STD 4	P1-A5	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_05.d	Calibration	STD 4	As Method	-
6	STD 5	P1-A6	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_06.d	Calibration	STD 5	As Method	-
7	STD 6	P1-A7	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_07.d	Calibration	STD 6	As Method	-
8	IB	P1-A8	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_08.d	Sample		As Method	-

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
9	ICV	P1-A9	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_09.d	QC	ICV	As Method	-
10	ISC	P1-A2	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_10.d	QC	STD 1	As Method	-
11	5899819:BLANK	P1-B1	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_11.d	Sample		As Method	
12	5899819:SPIKE	P1-B2	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_12.d	QC	ICV	As Method	-
13	5899819:MTRX SPK	P1-B3	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_13.d	QC	ICV	As Method	-
14	5899819:MTRX SPK:D1	P1-B4	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_14.d	Sample		As Method	-
15	IB	P1-A8	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_15.d	Sample		As Method	-
16	5899819:IOF247-01	P1-C2	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_16.d	Sample		As Method	-
17	5899819:IOF248-01	P1-C3	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_17.d	Sample		As Method	-
18	5899819:IOF249-01	P1-C4	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_18.d	Sample		As Method	-
19	CCV	P1-A5	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_19.d	ConCal	STD 4	As Method	-
20	5899819:IOF250-01	P1-C5	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_20.d	Sample		As Method	-
21	5899819:IOF251-01	P1-C6	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_21.d	ConCal	STD 4	As Method	-
22	5899819:IOF252-01	P1-C7	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_22.d	Sample		As Method	-
23	5899819:IOF253-01	P1-C8	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_23.d	Sample		As Method	-
24	5899819:IOF255-01	P1-C9	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_24.d	Sample		As Method	-
25	5899819:IOF256-01	P1-D1	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_25.d	Sample		As Method	-
26	5899819:IOF257-01	P1-D2	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_26.d	Sample		As Method	-
27	CCV	P1-A5	PFC_Water_Low_FOSAA.m	WS#5899819_FOSAA_27.d	ConCal	STD 4	As Method	-

FINAL INJECTION SEQUENCE

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2018/12/21 4:39 PM	WS#5899819_02.d	PFC_Water_Low.m	P1-A2
STD 2	-	2018/12/21 4:44 PM	WS#5899819_03.d	PFC_Water_Low.m	P1-A3
STD 3	-	2018/12/21 4:49 PM	WS#5899819_04.d	PFC_Water_Low.m	P1-A4
STD 4	-	2018/12/21 4:54 PM	WS#5899819_05.d	PFC_Water_Low.m	P1-A5
STD 5	-	2018/12/21 4:59 PM	WS#5899819_06.d	PFC_Water_Low.m	P1-A6
STD 6	-	2018/12/21 5:04 PM	WS#5899819_07.d	PFC_Water_Low.m	P1-A7
IB	-	2018/12/21 5:09 PM	WS#5899819_08.d	PFC_Water_Low.m	P1-A8
ICV	-	2018/12/21 5:13 PM	WS#5899819_09.d	PFC_Water_Low.m	P1-A9
ISC	-	2018/12/21 5:18 PM	WS#5899819_10.d	PFC_Water_Low.m	P1-A2
5899819:BLANK	-	2018/12/21 5:23 PM	WS#5899819_11.d	PFC_Water_Low.m	P1-B1
5899819:SPIKE	-	2018/12/21 5:28 PM	WS#5899819_12.d	PFC_Water_Low.m	P1-B2
5899819:MTRX SPK	IOF247	2018/12/21 5:33 PM	WS#5899819_13.d	PFC_Water_Low.m	P1-B3
5899819:MTRX SPK:D1	IOF247	2018/12/21 5:38 PM	WS#5899819_14.d	PFC_Water_Low.m	P1-B4
IB	-	2018/12/21 5:43 PM	WS#5899819_15.d	PFC_Water_Low.m	P1-A8
5899819:IMQ358-01	-	2018/12/21 5:48 PM	WS#5899819_16.d	PFC_Water_Low.m	P1-B5
5899819:IMW968-00:10x	Not used	2018/12/21 5:53 PM	WS#5899819_17.d	PFC_Water_Low.m	P1-B6
5899819:IMW968-00	-	2018/12/21 5:58 PM	WS#5899819_18.d	PFC_Water_Low.m	P1-B7
IB	-	2018/12/21 6:03 PM	WS#5899819_19.d	PFC_Water_Low.m	P1-A8
5899819:IMW970-00	-	2018/12/21 6:07 PM	WS#5899819_20.d	PFC_Water_Low.m	P1-B8
5899819:IMW971-00	-	2018/12/21 6:12 PM	WS#5899819_21.d	PFC_Water_Low.m	P1-B9
5899819:INO671-01	-	2018/12/21 6:17 PM	WS#5899819_22.d	PFC_Water_Low.m	P1-C1
5899819:IOF247-01	-	2018/12/21 6:22 PM	WS#5899819_23.d	PFC_Water_Low.m	P1-C2
5899819:IOF248-01	-	2018/12/21 6:27 PM	WS#5899819_24.d	PFC_Water_Low.m	P1-C3
5899819:IOF249-01	-	2018/12/21 6:32 PM	WS#5899819_25.d	PFC_Water_Low.m	P1-C4
CCV	-	2018/12/21 6:37 PM	WS#5899819_26.d	PFC_Water_Low.m	P1-A5
5899819:IOF250-01	-	2018/12/21 6:42 PM	WS#5899819_27.d	PFC_Water_Low.m	P1-C5
5899819:IOF251-01	-	2018/12/21 6:47 PM	WS#5899819_28.d	PFC_Water_Low.m	P1-C6
5899819:IOF252-01	-	2018/12/21 6:52 PM	WS#5899819_29.d	PFC_Water_Low.m	P1-C7
5899819:IOF253-01	-	2018/12/21 6:57 PM	WS#5899819_30.d	PFC_Water_Low.m	P1-C8
5899819:IOF255-01	-	2018/12/21 7:02 PM	WS#5899819_31.d	PFC_Water_Low.m	P1-C9
5899819:IOF256-01	-	2018/12/21 7:06 PM	WS#5899819_32.d	PFC_Water_Low.m	P1-D1
5899819:IOF257-01	-	2018/12/21 7:11 PM	WS#5899819_33.d	PFC_Water_Low.m	P1-D2
CCV	-	2018/12/21 7:16 PM	WS#5899819_34.d	PFC_Water_Low.m	P1-A5

LCMS04

FINAL INJECTION SEQUENCE

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2018/12/21 11:27 PM	WS#5899819_FOSAA_02.d	PFC_Water_Low_FOSAA.m	P1-A2
STD 2	-	2018/12/21 11:29 PM	WS#5899819_FOSAA_03.d	PFC_Water_Low_FOSAA.m	P1-A3
STD 3	-	2018/12/21 11:31 PM	WS#5899819_FOSAA_04.d	PFC_Water_Low_FOSAA.m	P1-A4
STD 4	-	2018/12/21 11:34 PM	WS#5899819_FOSAA_05.d	PFC_Water_Low_FOSAA.m	P1-A5
STD 5	-	2018/12/21 11:36 PM	WS#5899819_FOSAA_06.d	PFC_Water_Low_FOSAA.m	P1-A6
STD 6	-	2018/12/21 11:39 PM	WS#5899819_FOSAA_07.d	PFC_Water_Low_FOSAA.m	P1-A7
IB	-	2018/12/21 11:41 PM	WS#5899819_FOSAA_08.d	PFC_Water_Low_FOSAA.m	P1-A8
ICV	-	2018/12/21 11:43 PM	WS#5899819_FOSAA_09.d	PFC_Water_Low_FOSAA.m	P1-A9
ISC	-	2018/12/21 11:46 PM	WS#5899819_FOSAA_10.d	PFC_Water_Low_FOSAA.m	P1-A2
5899819:BLANK	-	2018/12/21 11:48 PM	WS#5899819_FOSAA_11.d	PFC_Water_Low_FOSAA.m	P1-B1
5899819:SPIKE	-	2018/12/21 11:50 PM	WS#5899819_FOSAA_12.d	PFC_Water_Low_FOSAA.m	P1-B2
5899819:MTRX SPK	IOF247	2018/12/21 11:53 PM	WS#5899819_FOSAA_13.d	PFC_Water_Low_FOSAA.m	P1-B3
5899819:MTRX SPK:D1	IOF247	2018/12/21 11:55 PM	WS#5899819_FOSAA_14.d	PFC_Water_Low_FOSAA.m	P1-B4
IB	-	2018/12/21 11:58 PM	WS#5899819_FOSAA_15.d	PFC_Water_Low_FOSAA.m	P1-A8
5899819:IOF247-01	-	2018/12/22 12:00 AM	WS#5899819_FOSAA_16.d	PFC_Water_Low_FOSAA.m	P1-C2
5899819:IOF248-01	-	2018/12/22 12:02 AM	WS#5899819_FOSAA_17.d	PFC_Water_Low_FOSAA.m	P1-C3
5899819:IOF249-01	-	2018/12/22 12:05 AM	WS#5899819_FOSAA_18.d	PFC_Water_Low_FOSAA.m	P1-C4
CCV	-	2018/12/22 12:07 AM	WS#5899819_FOSAA_19.d	PFC_Water_Low_FOSAA.m	P1-A5
5899819:IOF250-01	-	2018/12/22 12:09 AM	WS#5899819_FOSAA_20.d	PFC_Water_Low_FOSAA.m	P1-C5
5899819:IOF251-01	-	2018/12/22 12:12 AM	WS#5899819_FOSAA_21.d	PFC_Water_Low_FOSAA.m	P1-C6
5899819:IOF252-01	-	2018/12/22 12:14 AM	WS#5899819_FOSAA_22.d	PFC_Water_Low_FOSAA.m	P1-C7
5899819:IOF253-01	-	2018/12/22 12:17 AM	WS#5899819_FOSAA_23.d	PFC_Water_Low_FOSAA.m	P1-C8
5899819:IOF255-01	-	2018/12/22 12:19 AM	WS#5899819_FOSAA_24.d	PFC_Water_Low_FOSAA.m	P1-C9
5899819:IOF256-01	-	2018/12/22 12:21 AM	WS#5899819_FOSAA_25.d	PFC_Water_Low_FOSAA.m	P1-D1
5899819:IOF257-01	-	2018/12/22 12:24 AM	WS#5899819_FOSAA_26.d	PFC_Water_Low_FOSAA.m	P1-D2
CCV	-	2018/12/22 12:26 AM	WS#5899819_FOSAA_27.d	PFC_Water_Low_FOSAA.m	P1-A5

LCMS04

DoD Projects - Internal Data Validation Checklist

Run date: 2019/01/04

Worksheet # (s): S907027

Analysis: PFAADW-W

	Primary review by the analyst - 1st 100 % analysis review	1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria [illegible]	~~✓~~	✓		✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, SRM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria	✓			✓
8	Method Blank meets acceptance criteria	✓			✓
9	Matrix Spike recovery(s) meets acceptance criteria			✓	✓
10	Duplicate precision meets acceptance criteria	✓			✓
11	QC is documented on the run logs	✓			✓
12	Runs checked for carryover			✓	✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed			✓	✓
17	Dilution factors (where justified) have been checked for correctness and entered	✓			✓
18	Analytical observations/anomalies documented in LIMS	✓			✓
19	Random calculation checked and in correct units	✓			✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated	✓			✓
22	Transferred data is validated in LIMS for correctness	✓			✓
23	Data package assembled (where required)	✓			✓

Reviewed by: [illegible] Date: 2019/01/08

Comments:

	Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review	yes	no	n/a
1	Repeats documented and referenced			✓
2	Method and sample deviations noted, anomalies described (if applicable)			✓
3	Data and QC validated in LIMS	✓		
4	Random calculation checked	✓		
5	Benchsheet (s) signed and dated	✓		
6	Data Package (if required) checked for completeness	✓		

Reviewed by: [illegible] Date: 2019/01/08

Comments:

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5907027 | Testcode: PFAA DW -W

Sample Preparation		yes	no	n/a
1	Samples extracted within hold time	✓		
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	✓		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded			✓
9	Matrix spike / Duplicate performed on IOL samples if present			✓
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	✓		
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			✓
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.	✓		
15	Worksheet and reagent tracking record completed and authorized.	✓		

Reviewed by: EG | Date: 2018/12/28

Comments:

Worksheet Approval		yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

Reviewed by: | Date:

See BRL FCD0002
Cm 2019/01/08

Comments:

Worksheet Validation		yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: | Date:

Comments:

WS# : 5907027

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Friday, December 28, 2018

Assigned to : Esraa Ghaoush

Test Code : PFAADW-W

Instrument Id:

Test Description : PFAAs in drinking water by SPE and LC/MS/MS

Job Number	Sample Number	D	Sample ID	F	% ~~Moisture~~ used	~~Wt or~~ Vol ml	Final Vol ml	DF or AF	# Cont	Expiry Date	Test DeadLine	Criteria	Extract Date
	SPIKE	0	PFDWM		0	250	1	1X					2018/12/28
	SPIKE	1	PFDWM		0	250	1	1X					2018/12/28
	BLANK				0	250	1	1X					2018/12/28
B8P9750	*HXO250-01R		[redacted]		0	250	1	1X	1		2018/12/28 23:00		2018/12/28
B8P9750	*HXO252-01R		[redacted]		0	250	1	1X	1		2018/12/28 23:00		2018/12/28
B8X5580	*IOF240-01R		GP010		0	255	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF241-01R		GP011		0	270	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF242-01R		GP012		0	250	1	1X	4	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF243-01R		GP013		0	285	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF244-01R		GP014		0	275	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF245-01R		GP015		0	285	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28
B8X5580	*IOF246-01R		GP016		0	280	1	1X	2	2018/12/20	2018/12/31 23:00	DOD	2018/12/28

EG1 2018/12/28

Remarks: spike & spike.D was made instead of MS & MSD since no more sample left (rework)

Samples extracted by: Esraa Ghaoush EG1

Instrumentation performed by: [signature] Date: 2018/12/31

Calculations performed by: [signature] Date: 2019/01/08

Validated by: [signature] Date: 2019/01/08

Maxxam Analytics

Job No.	Rep / Remarks	Client Name	Contact	Client Tier	National
[redacted]	[redacted]		[redacted]	[redacted]	
GB8X5580	SP8	Earth Toxics Inc	Brian Nagy	Tier 5 (Enviro.)	AECOM

DKN, nreg, PFOSALCM-W/PFAADW-W Standard Navy 14 PFAS MS/MSD required on IOF242, IOF247, IOF254
Sample: GP005 placed on HOLD as per client request SP8 18/12/19 Project #: N62742-12-D-1829

Job	Sample	Lab Comments
	SPIKE	
	SPIKE	
	BLANK	
B8P9750	HXO250-01R	
B8P9750	HXO252-01R	
B8X5580	IOF240-01R	
B8X5580	IOF241-01R	ECS 2018/12/28
B8X5580	IOF242-01R	
B8X5580	IOF243-01R	
B8X5580	IOF244-01R	
B8X5580	IOF245-01R	
B8X5580	IOF246-01R	

Amount spiked (µl)

S1 → 40
S2 → 80] DWB SK-7774
S3 → 240

S4 → 56
S5 → 120] DWA I-5918
S6 → 200

7CV → 100] DWA. I-5427

[PFOA → 100] I-5514

Worksheet Reagent Tracking Record

Worksheet # 5907027

Surrogate/Spike solutions	√	Solution ID #	Conc.	Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
~~Comp. PFC Working Solution A~~ DWA	✓	I - 5427	1ug/mL	75	~~21~~ 100 ~~62.5~~	75	21 / 62.5	NA	NA
PFAS Surr-placed ~~PFC Internal Standard Solution~~	✓	SI-7118 AC2(2) TK4	50/125 ng/mL	200	100 / 150	200	100 / 150	200	100/150
~~PFC Injection~~ IS	✓	SI-7232	400 ng/mL	20	~~20~~ 100	20	20	20	~~20~~ 100
ICV	✓	I - 5427							

Volume (µL)

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared
DCM				50% NaOH			
Ottawa Sand				o-Phosphoric Acid			
Methanol	✓	SHBK5051	2018/12/27	Borax			
2-Propanol (IPA)				Calcium Chloride			
Acetonitrile				EDTA			
Sodium Sulfate				Phosphate Buffer			
70:30 Methanol: Water				Sodium Thiosulphate			
60:40 Water: Methanol				DNPH			
DCM:Ethyl Ether (75:25)				FMOC			
Hexane:IPA (98:2)				5M Acetate Buffer			
2% Formic Acid				0.2% NH_4OH			
0.2% Formic Acid				Leachate Fluid			
0.05M KOH				Reagent Water	✓	58248	2018/12/27
0.05M HCl				Trizma	✓	SLBX4069	2018/12/12
				96:4 MeOH:(...)	✓	PRCRF124 - 195	

*Spiked by:	EG1
Spike Date	2018/12/28
Spike Syringe/Pipette ID#	M23487B
Int. Std Syringe/Pipette ID#	J365514
*Spiking Witnessed by:	TK4
Final pH	

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #
Pipettor ≠ 48465G K522906G, Q287936 J365514, M41011F	✓	SPE Cartridge	6346595	✓	QC Balance ID	FC-1
		Filter		✓	Thermometer ID &Temp	181292631 65 °C
Dispenser	·	Centrifuge				
		Sonicator				

Bottle Tracking	
Bottle#	
Cap#	
Systems plus Lot#	

Comments:

Worksheet Number: **5907027**

PFAAs in drinking water by SPE and LC/MS - Water

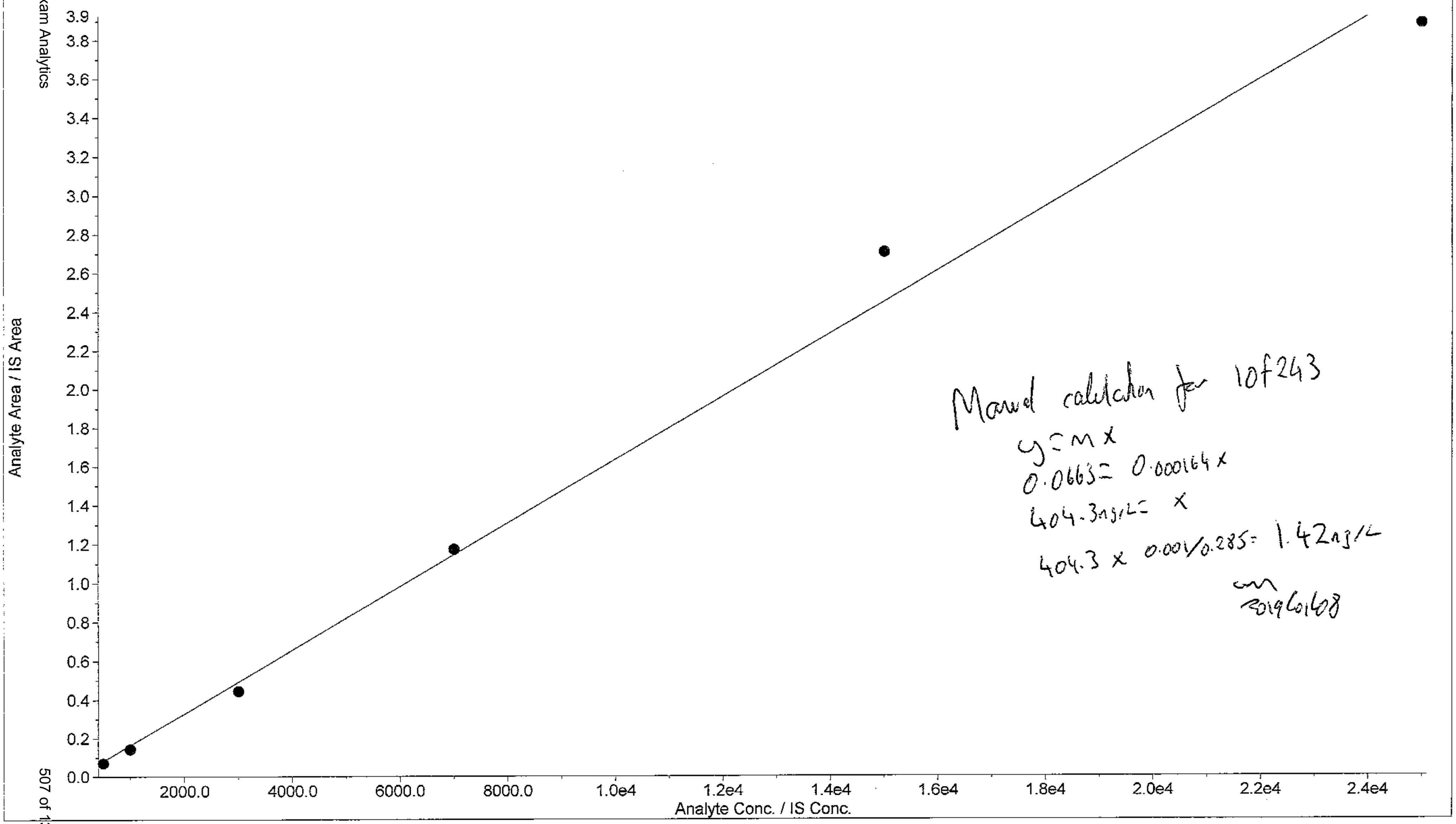
ng/L

Parameter Name	Units	SPIKE	SPIKE Dup1	BLANK	B8P9750 HXO250 ReWork	B8P9750 HXO252 ReWork	B8X5580 IOF240 ReWork
Perfluorobutanesulfonic acid	ng/L	80.80000	84.40000	0	0	1.46000	0.35900
Perfluorohexanoic Acid (PFHxA)	ng/L	91.20000	96.40000	0	0	1.61000	0.69600
Perfluorohexanesulfonic acid	ng/L	87.00000	83.80000	0	0	1.60000	2.46000
Perfluoroheptanoic Acid (PFHpA)	ng/L	88.60000	90.20000	0	0	1.73000	0
Perfluoro-n-Octanoic Acid (PFOA)	ng/L	91.00000	97.00000	0.19000	0.18500	1.58000	0.78400
Perfluorooctanesulfonic acid	ng/L	95.00000	92.80000	0	0	1.83000	1.36000
Perfluorononanoic Acid (PFNA)	ng/L	112.20000	113.00000	0	0	1.71000	0
Perfluorodecanoic Acid (PFDA)	ng/L	91.60000	91.80000	0	0	1.63000	0
Perfluoroundecanoic Acid (PFUnA)	ng/L	93.20000	96.20000	0	0.05770	1.76000	0.02960
Perfluorododecanoic Acid (PFDoA)	ng/L	89.20000	96.00000	0	0	1.63000	0
Perfluorotridecanoic Acid	ng/L	93.20000	87.40000	0	0	1.59000	0.05510
Perfluorotetradecanoic Acid	ng/L	88.00000	89.00000	0	0	1.77000	0
MeFOSAA	ng/L	79.00000	80.50000	0	0	5.99000	0
EtFOSAA	ng/L	73.50000	74.00000	0	0	4.84000	0
D5-EtFOSAA	ng/L	90.1	92.3	98.1	95	86	97.1
13C2-Perfluorodecanoic acid	ng/L	89.5	89.8	86.5	102	87.8	87.3
13C2-Perfluorohexanoic acid	ng/L	97	102	91.4	104	91.8	91.2

Parameter Name	DL	B8X5580 IOF241 ReWork	DL	B8X5580 IOF242 ReWork	DL	B8X5580 IOF243 ReWork	B8X5580 IOF244 ReWork
Perfluorobutanesulfonic acid	2	4.53000	1.9	2.96000	2	2.66000	0.31100
Perfluorohexanoic Acid (PFHxA)	2	4.55000	1.9	4.49000	2	3.73000	1.38000
Perfluorohexanesulfonic acid	2	36.90000	1.9	22.90000	2	19.10000	1.29000
Perfluoroheptanoic Acid (PFHpA)	2	1.46000	1.9	1.32000	2	1.42000	0.37200
Perfluoro-n-Octanoic Acid (PFOA)	2	2.80000	1.9	2.03000	2	1.77000	0.72000
Perfluorooctanesulfonic acid	2	58.50000	1.9	41.90000	2	30.50000	1.90000
Perfluorononanoic Acid (PFNA)	2	0.16900	1.9	0.22600	2	0.19900	0
Perfluorodecanoic Acid (PFDA)	2	0	1.9	0	2	0	0
Perfluoroundecanoic Acid (PFUnA)	2	0.06310	1.9	0.04430	2	0	0
Perfluorododecanoic Acid (PFDoA)	2	0	1.9	0	2	0	0
Perfluorotridecanoic Acid	2	0	1.9	0.05370	2	0	0
Perfluorotetradecanoic Acid	2	0	1.9	0.05030	2	0	0
MeFOSAA	8	0	7.6	0	8	0	0
EtFOSAA	8	0	7.6	0	8	0	0
D5-EtFOSAA		82.4		94.8		87.1	88.7
13C2-Perfluorodecanoic acid		92.1		89.7		84.5	96
13C2-Perfluorohexanoic acid		93.5		95		90.4	104

Parameter Name	B8X5580 IOF245 ReWork	B8X5580 IOF246 ReWork	DL	RDL	MDL	IDL	
Perfluorobutanesulfonic acid	0	0.41700	1.8	2	0.32	0	
Perfluorohexanoic Acid (PFHxA)	0	0.53500	1.8	2	0.36	0	
Perfluorohexanesulfonic acid	0	1.76000	1.8	2	0.27	0	
Perfluoroheptanoic Acid (PFHpA)	0	0.38300	1.8	2	0.36	0	
Perfluoro-n-Octanoic Acid (PFOA)	0.41900	0.78200	1.8	2	0.48	0	
Perfluorooctanesulfonic acid	0	0	1.8	2	0.37	0	
Perfluorononanoic Acid (PFNA)	0	0	1.8	2	0.42	0	
Perfluorodecanoic Acid (PFDA)	0	0	1.8	2	0.22	0	
Perfluoroundecanoic Acid (PFUnA)	0	0	1.8	2	0.3	0	
Perfluorododecanoic Acid (PFDoA)	0	0	1.8	2	0.36	0	
Perfluorotridecanoic Acid	0	0.13200	1.8	2	0.44	0	
Perfluorotetradecanoic Acid	0	0	1.8	2	0.33	0	
MeFOSAA	0	0.28100	7.2	8	1.7	0	
EtFOSAA	0	0.30300	7.2	8	1.3	0	
D5-EtFOSAA	83.1	94.9					
13C2-Perfluorodecanoic acid	100	109					
13C2-Perfluorohexanoic acid	104	106					

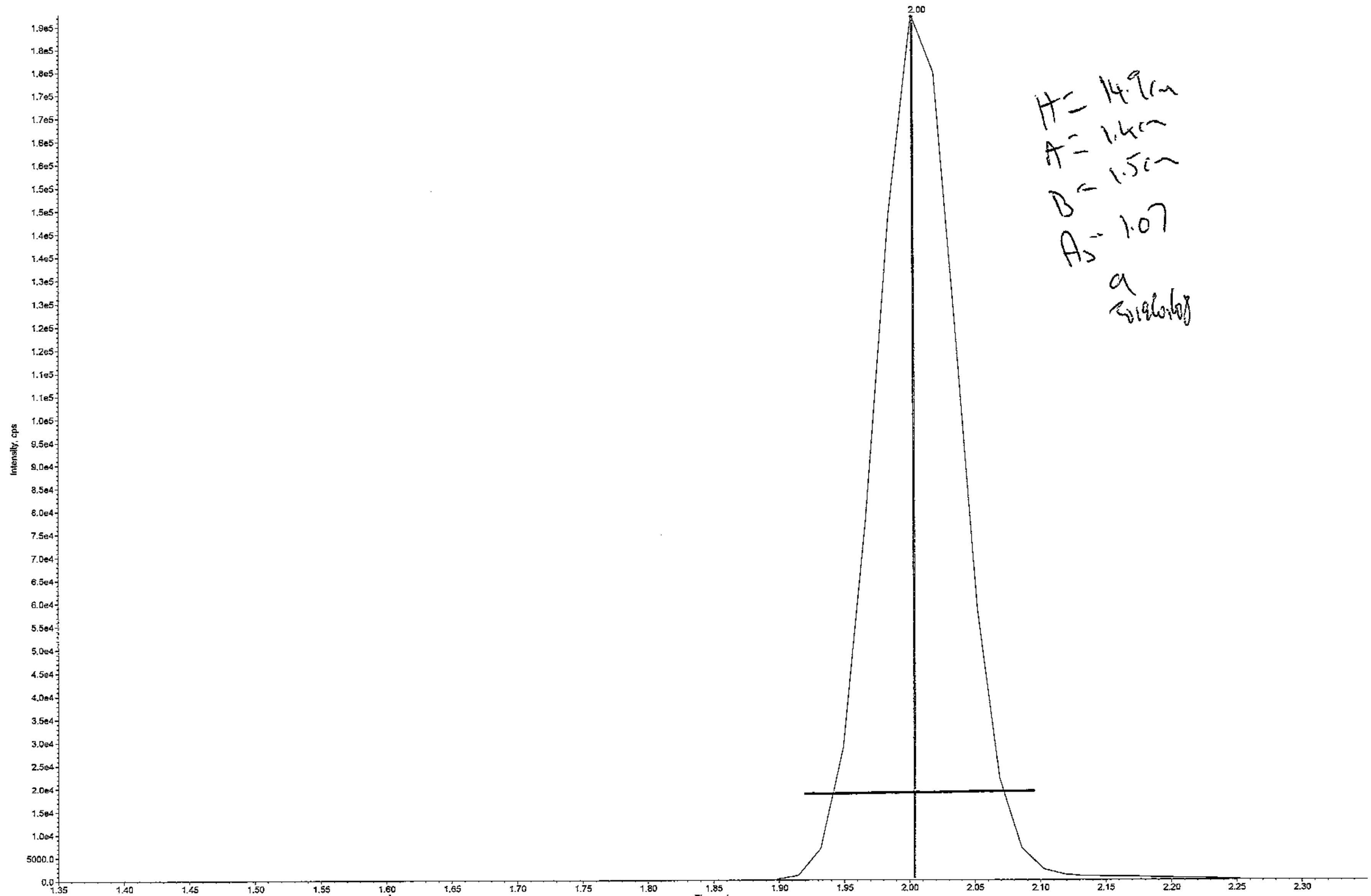
PFC_Water_181231_5907027_EPA537_MI.rdb (PFHpA 1): "Linear Through Zero" Regression ("1 / x" weighting): y = 0.000164 x (r = 0.9973)



Manual calculation for 10f243
y = m x
0.0663 = 0.000164 x
404.3 ng/L = x
404.3 x 0.001/0.285 = 1.42 ng/L
20190108

Sample Name: "STD 4" Sample ID: "" File: "WS#5907027.wiff"
Peak Name: "PFBS 1" Mass(es): "298.900/79.900 Da"
Comment: "" Annotation: "-"

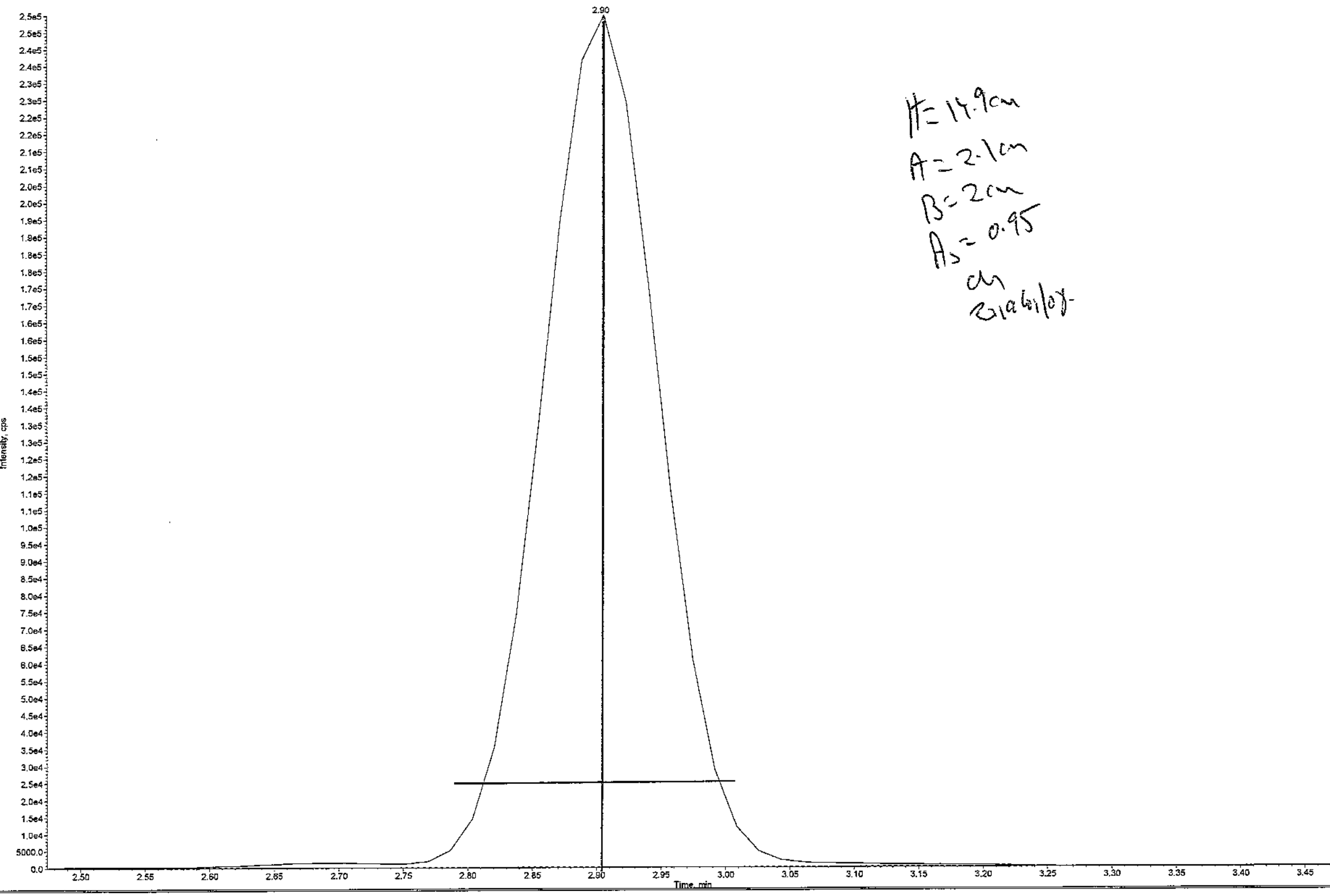
Sample Index:	215	
Sample Type:	Standard	
Concentration:	7000.	ng/L
Calculated Conc:	6880.	ng/L
Acq. Date:	2019/01/0?	
Acq. Time:	12:51:01 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	3	
Noise Threshold:	20.00	cps
Area Threshold:	500.00	cps
Num. Smooths:	4	
Sep. Width:	0.00	
Sep. Height:	0.00	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.0	sec
Expected RT:	1.85	min
Use Relative RT:	No	
Int. Type:	Base To Base	
Retention Time:	2.00	min
Area:	858000.	counts
Height:	1.90e+005	cps
Start Time:	1.81	min
End Time:	2.32	min



H= 14.9cm
A= 1.4cm
B= 1.5cm
As= 1.07
[illegible]

Sample Name: "STD 4" Sample ID: "" File: "WS#5907027.wiff"
Peak Name: "PFHxA 1" Mass(es): "313.000/269.000 Da"
Comment: "" Annotation: "-"

Sample Index:	215
Sample Type:	Standard
Concentration:	7000. ng/L
Calculated Conc:	7180. ng/L
Acq. Date:	2019/01/0
Acq. Time:	12:51:31 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	4
Noise Threshold:	1000.00 cps
Area Threshold:	500.00 cps
Num. Smooths:	10
Sep. Width:	0.00
Sep. Height:	0.00
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.0 sec
Expected RT:	2.97 min
Use Relative RT:	No
Int. Type:	Base To Base
Retention Time:	2.90 min
Area:	1600000. counts
Height:	2.50e+005 cps
Start Time:	2.44 min
End Time:	3.27 min



H= 14.9cm
A= 2.1cm
B= 2cm
As= 0.95
ch
21a6/01/08-

Report Name: Worksheet - Parameter Lists
Report Date: 2018/12/28

Test Code: **PFAADW-W**
Worksheet Number: **5907027**

Sample Number	Parameter Code	Parameter	
HXO250-01	PFBSA	Perfluorobutanesulfonic acid	
HXO252-01	PFHXA	Perfluorohexanoic Acid (PFHxA)	
IOF240-01	PFHXSA	Perfluorohexanesulfonic acid	
IOF241-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
IOF242-01	PFOA	Perfluoro-n-Octanoic Acid (PFOA)	
IOF243-01	PFOS2	Perfluorooctanesulfonic acid	
IOF244-01	PFNA	Perfluorononanoic Acid (PFNA)	
IOF245-01	PFDA	Perfluorodecanoic Acid (PFDA)	
IOF246-01	PFUNA	Perfluoroundecanoic Acid (PFUnA)	
	PFDOA	Perfluorododecanoic Acid (PFDoA)	
	PFTRDA	Perfluorotridecanoic Acid	
	PFTEDA	Perfluorotetradecanoic Acid	
	MEFOSAA	MeFOSAA	*
	ETFOSAA	EtFOSAA	*

* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 5907027 Instrument Sequences

1.	5907027:SPIKE	SPIKE
2.	5907027:SPIKE:D1	SPIKE :D1
3.	5907027:BLANK	BLANK
4.	5907027:HXO250-01	[redacted]
5.	5907027:HXO252-01	[redacted]
6.	5907027:IOF240-01	GP010
7.	5907027:IOF241-01	GP011
8.	5907027:IOF242-01	GP012
9.	5907027:IOF243-01	GP013
10.	5907027:IOF244-01	GP014
11.	5907027:IOF245-01	GP015
12.	5907027:IOF246-01	GP016

Batch Name: D:\Analyst Data\Projects\Enviro\PFOS\Batch\PFC_181228_EPA537.dab

Printing Date: Monday, December 31, 2018

Project: D:\Analyst Data\Projects\Enviro\PFOS Batch:PFC_181228_EPA537 Tab:Sample Set:SET1 AcqMethod:PFC_Water_EPA537.dam

Sample

	Sample Name	Rack Code	Rack Position	Plate Code	Plate Position	Vial Position	Data File	Inj.Volume (µl)
1	RINSE	2 Well Plates	1	*54VialPlate*	2	1	PFC_181228\WS#5907027	1.500
2	STD 1	2 Well Plates	1	*54VialPlate*	2	2	PFC_181228\WS#5907027	1.500
3	STD 2	2 Well Plates	1	*54VialPlate*	2	3	PFC_181228\WS#5907027	1.500
4	STD 3	2 Well Plates	1	*54VialPlate*	2	4	PFC_181228\WS#5907027	1.500
5	STD 4	2 Well Plates	1	*54VialPlate*	2	5	PFC_181228\WS#5907027	1.500
6	STD 5	2 Well Plates	1	*54VialPlate*	2	6	PFC_181228\WS#5907027	1.500
7	STD 6	2 Well Plates	1	*54VialPlate*	2	7	PFC_181228\WS#5907027	1.500
8	ICV	2 Well Plates	1	*54VialPlate*	2	8	PFC_181228\WS#5907027	1.500
9	CCV	2 Well Plates	1	*54VialPlate*	2	2	PFC_181228\WS#5907027	1.500
10	IPFOA	2 Well Plates	1	*54VialPlate*	2	9	PFC_181228\WS#5907027	1.500
11	5907027~BLANK	2 Well Plates	1	*54VialPlate*	2	10	PFC_181228\WS#5907027	1.500
12	5907027~SPIKE	2 Well Plates	1	*54VialPlate*	2	11	PFC_181228\WS#5907027	1.500
13	5907027~SPIKED1	2 Well Plates	1	*54VialPlate*	2	12	PFC_181228\WS#5907027	1.500
14	5907027~HXO250-01	2 Well Plates	1	*54VialPlate*	2	13	PFC_181228\WS#5907027	1.500
15	5907027~HXO252-01	2 Well Plates	1	*54VialPlate*	2	14	PFC_181228\WS#5907027	1.500
16	5907027~IOF240-01	2 Well Plates	1	*54VialPlate*	2	15	PFC_181228\WS#5907027	1.500
17	5907027~IOF241-01	2 Well Plates	1	*54VialPlate*	2	16	PFC_181228\WS#5907027	1.500
18	5907027~IOF242-01	2 Well Plates	1	*54VialPlate*	2	17	PFC_181228\WS#5907027	1.500
19	5907027~IOF243-01	2 Well Plates	1	*54VialPlate*	2	18	PFC_181228\WS#5907027	1.500
20	5907027~IOF244-01	2 Well Plates	1	*54VialPlate*	2	19	PFC_181228\WS#5907027	1.500
21	5907027~IOF245-01	2 Well Plates	1	*54VialPlate*	2	20	PFC_181228\WS#5907027	1.500
22	5907027~IOF246-01	2 Well Plates	1	*54VialPlate*	2	21	PFC_181228\WS#5907027	1.500
23	CCV	2 Well Plates	1	*54VialPlate*	2	5	PFC_181228\WS#5907027	1.500

Column # 354
MPA = Soln # 460, f1RE18
MPB = MeOH, 183018
a
2018/12/31

	Sample ID	Sample Annotation	Acquisition Date	File Name	Acquisition Method	Rack Type	Rack Position	Vial Position	Plate Type	Plate Position
1	STD 1	Re-injected, not used	2019/01/03 12:04:15 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	2	*54VialPlate*	2
2	STD 2	-	2019/01/03 12:19:50 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	3	*54VialPlate*	2
3	STD 3	-	2019/01/03 12:35:26 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	4	*54VialPlate*	2
4	STD 4	-	2019/01/03 12:51:01 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	5	*54VialPlate*	2
5	STD 5	-	2019/01/03 1:06:37 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	6	*54VialPlate*	2
6	STD 6	-	2019/01/03 1:22:12 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	7	*54VialPlate*	2
7	STD 1	-	2019/01/03 1:37:47 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	2	*54VialPlate*	2
8	ICV	-	2019/01/03 1:53:23 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	8	*54VialPlate*	2
9	CCV	-	2019/01/03 2:08:58 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	2	*54VialPlate*	2
10	tPFOA	-	2019/01/03 2:24:34 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	9	*54VialPlate*	2
11	5907027~BLANK	-	2019/01/03 2:40:09 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	10	*54VialPlate*	2
12	5907027~SPIKE	-	2019/01/03 2:55:44 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	11	*54VialPlate*	2
13	5907027~SPIKE:D1	Re-injected to confirm IS recovery, reported	2019/01/03 3:11:19 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	12	*54VialPlate*	2
14	5907027~HXO250-01	-	2019/01/03 3:26:54 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	13	*54VialPlate*	2
15	5907027~HXO252-01	-	2019/01/03 3:42:29 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	14	*54VialPlate*	2
16	5907027~IOF240-01	Re-injected to confirm IS recovery, reported	2019/01/03 3:58:04 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	15	*54VialPlate*	2
17	5907027~IOF241-01	Re-injected to confirm IS recovery, reported	2019/01/03 4:13:39 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	16	*54VialPlate*	2
18	5907027~IOF242-01	Re-injected to confirm IS recovery, reported	2019/01/03 4:29:15 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	17	*54VialPlate*	2
19	5907027~IOF243-01	-	2019/01/03 4:44:50 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	18	*54VialPlate*	2
20	5907027~IOF244-01	-	2019/01/03 5:00:26 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	19	*54VialPlate*	2
21	5907027~IOF245-01	Re-injected to confirm IS recovery, reported	2019/01/03 5:16:02 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	20	*54VialPlate*	2
22	5907027~IOF246-01	-	2019/01/03 5:31:38 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	21	*54VialPlate*	2
23	CCV	-	2019/01/03 5:47:14 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	5	*54VialPlate*	2
24	CCV	-	2019/01/04 10:37:36 AM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	7	*54VialPlate*	2
25	5907027~SPIKE:D1	Re-injection, not reported	2019/01/04 2:47:00 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	12	*54VialPlate*	2
26	5907027~IOF240-01	Re-injection, not reported	2019/01/04 3:02:35 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	15	*54VialPlate*	2
27	5907027~IOF241-01	Re-injection, not reported	2019/01/04 3:18:11 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	16	*54VialPlate*	2
28	5907027~IOF245-01	Re-injection, not reported	2019/01/04 3:34:32 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	20	*54VialPlate*	2
29	5907027~IOF242-01	Re-injection, not reported	2019/01/04 3:50:07 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	17	*54VialPlate*	2
30	CCV	-	2019/01/04 4:21:19 PM	PFC_181228\WS#5907027.wiff	PFC_Water_EPA537.dam	2 Well Plates	1	5	*54VialPlate*	2

DoD Projects - Internal Data Validation Checklist

Run date: 2019/01/05

Worksheet # (s): 5914930

Analysis: PFOSALCM-W

Primary review by the analyst - 1st 100 % analysis review		1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria 2019/01/08 DAD	✓	✓		✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, SRM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria 2019/01/07 DAD	✓	✓		✓
8	Method Blank meets acceptance criteria	✓			✓
9	Matrix Spike recovery(s) meets acceptance criteria			✓	✓
10	Duplicate precision meets acceptance criteria	✓			✓
11	QC is documented on the run logs	✓			✓
12	Runs checked for carryover	✓			✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed			✓	✓
17	Dilution factors (where justified) have been checked for correctness and entered			✓	✓
18	Analytical observations/anomalies documented in LIMS			✓	✓
19	Random calculation checked and in correct units	✓			✓
20	If corrective actions were applied they are documented, initialed & dated 2019/01/08 DAD			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated	✓		✓	✓
22	Transferred data is validated in LIMS for correctness	✓			✓
23	Data package assembled (where required)	✓			✓

Reviewed by: DAD | Date: 2019/01/07

Comments:

Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review		yes	no	n/a
1	Repeats documented and referenced			✓
2	Method and sample deviations noted, anomalies described (if applicable)			✓
3	Data and QC validated in LIMS	✓		
4	Random calculation checked	✓		
5	Benchsheet (s) signed and dated	✓		
6	Data Package (if required) checked for completeness	✓		

Reviewed by: [initials] | Date: 2019/01/08.

Comments:

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5914930 Testcode: PFOSALCM-W

Sample Preparation

		yes	no	n/a
1	Samples extracted within hold time		✓	
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	✓		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded	✓		
9	Matrix spike / Duplicate performed on IOL samples if present			✓
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	✓		
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			✓
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.	✓		
15	Worksheet and reagent tracking record completed and authorized.	✓		

Reviewed by: KPG Date: 2019/01/04

Comments:

Worksheet Approval

		yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

Refer to NRL FCD00029 2019/01/07 DA

Reviewed by: Date:

Comments:

Worksheet Validation

		yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: Date:

Comments:

WS# : 5914930

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Friday, January 04, 2019

Assigned to : Kevalkumar Patel

Test Code : PFOSALCM-W

Instrument Id:

Test Description : PFOS and PFOA in water by LC-MS/MS

KPG 2019/01/04

	Job Number	Sample Number	D	Sample ID	F	~~% Moisture~~ sediment (cm)	Wt or Vol (ml)	Final Vol (ml)	DF or AF	# Cont	Expiry Date ✓	Test DeadLine ✓	Criteria	Extract Date
7-3		SPIKE	0	PFOS		0	125	3	1x					2019/01/04
7-5		SPIKE	1	PFOS		0	125	3	1x					2019/01/04
7-1		BLANK				0	125	3	1x					2019/01/04
7-7	B8X5580	*IOF232-01R		GP002		<0.1	12.5	3	10x	2	2018/12/19	2018/12/31 23:00	DOD	2019/01/04
7-9	B8X5580	*IOF233-01R		GP003		<0.1	12.5	3	10x	2	2018/12/19	2018/12/31 23:00	DOD	2019/01/04
7-11	B8Y5672	*IQK696-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-13	B8Y5672	*IQK697-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-15	B8Y5672	*IQK698-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-17	B8Y5672	*IQK699-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-19	B8Y5672	*IQK700-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-21	B8Y5672	*IQK701-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-23	B8Y5672	*IQK702-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04
7-24	B8Y5672	*IQK703-01R		[redacted]		<0.1	125	3	1x	1	2019/01/05	2019/01/11 23:00		2019/01/04

KPG 2019/01/04

Remarks: SPK & SPK DUP were made due to insufficient volume of Samples.

Samples extracted by: Kevalkumar Patel KPG 2019/01/04

Instrumentation performed by: AKH Date: 2019/01/05

Calculations performed by: DAD Date: 2019/01/07

Validated by: [illegible] Date: 2019/01/08

Job No.	Rep / Remarks	Client Name	Contact	Client Tier	National
GB8X5580	**SP8**	**Earth Toxics Inc**	**Brian Nagy**	**Tier 5 (Enviro.)**	**AECOM**

DKN, nreg, PFOSALCM-W/PFAADW-W Standard Navy 14 PFAS MS/MSD required on IOF242, IOF247, IOF254
Sample: GP005 placed on HOLD as per client request SP8 18/12/19 Project #: N62742-12-D-1829

GB8Y5672 [redacted]

KPG 2019/01/04

Job	Sample	Lab Comments
	SPIKE	
	SPIKE	
	BLANK	
B8X5580	IOF232-01R	Samples were expired during re-work.
B8X5580	IOF233-01R	
B8Y5672	IQK696-01R	
B8Y5672	IQK697-01R *	
B8Y5672	IQK698-01R *	
B8Y5672	IQK699-01R *	
B8Y5672	IQK700-01R *	
B8Y5672	IQK701-01R *	
B8Y5672	IQK702-01R	
B8Y5672	IQK703-01R *	

* Samples were centrifuged at 4500 rpm.

Folder, 2019/01/05; WS# 5914930-~~AI~~ 2019/01/08

2019/01/07
[illegible]

HPLC/LCMS Calibration Standard Preparation Sheet

Worksheet : 5914930

PFOSALCM-W (SPE)/ PFOSLOW-W					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	2825	25			150
S2	2800	50	100 ng/mL	SK-8290	150
S3	2700	150			150
S4	2813	37.5			150
S5	2775	75	1 ug/mL	I-5563	150
S6	2725	125			150
ICV	2788	62.5	1 ug/mL	I-5562	150
IB	2850	NA			150

PFOSALCM-W (High)						
Calibration Standard	Volume of MeOH (uL)	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	480	0.75	20			100
S2	463	0.75	37.5	30 ng/mL		100
S3	485	0.75	15			100
S4	463	0.75	37.5	300 ng/mL		100
S5	478	0.75	22.5	1 ug/mL		100
S6	463	0.75	37.5			100
ICV	500	0.75	18	1 ug/mL		100
IB	500	0.75	NA			100

PFOSALCM-S					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1885	15			100
S2	1870	30	100 ng/mL		100
S3	1810	90			100
S4	1878	22.5			100
S5	1855	45	1 ug/mL		100
S6	1825	75			100
ICV	1863	37.5	1 ug/mL		100
IB	1900	NA			100

PFC-TI					
Calibration Standard	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1890	10			100
S2	1880	20	100 ng/mL		100
S3	1840	60			100
S4	1885	15			100
S5	1870	30	1 ug/mL		100
S6	1850	50			100
ICV	1875	25	1 ug/mL		100

CLO4LCMS-W/ CLO4LCMS-S				
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#
S1	9.95	50		
S2	9.9	100		
S3	9.75	250	10ug/L	
S4	9.5	500		
S5	9	1000		
S6	8	2000		
ICV	1	1000	10 ug/L	

MORPH-L					
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1	20	200 ug/L		50
S2	1	50			50
S3	1	20	2500 ug/L		50
S4	1	80			50
S5	1	200			50
S6	1	400			50
ICV	1	80	2500 ug/L		50

STERIL-S					
Calibration Standard	Volume of 60: 40 Water : MEOH (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	5	20	*****		50
S2	5	30	Solution B		50
S3	5	40			50
S4	5	80			50
S5	5	22	*****		50
S6	5	40	Solution A		50
ICV	5	20	*****		50

GLYPHO-LIQ/ GLYPHOLO-S				
Calibration Standard	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#
S1	2	8		
S2	2	20		
S3	2	40	2.5 ug/mL	
S4	2	60		
S5	2	80		
ICV	2	40	2.5 ug/mL	

******* Concentration of individual parameters in Solution A & Solution B varies**

Witnessed by: AB

Worksheet Reagent Tracking Record

Worksheet # 5914930

Surrogate/Spike solutions	√	Solution ID #	Conc.	Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
Comp. PFC Working Solution A	✓	I-5562 (3/3)	1ug/mL	75	21 62.5	75	21 62.5	NA	NA
PFC Internal Standard Solution	✓	SI-7318 (4/4) JB	50/125 ng/mL	200	100 150	200	100 150	200	100/150
PFC Injection IS	✓	SI-7319 (1/4) JB	~~400~~ 100 ng/mL	20	20	20	20	20	20
ICV	✓	I-5562 (3/3)	1 ug/ml		62.5				

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared	
DCM				50% NaOH				*Spiked by: KPG
Ottawa Sand				o-Phosphoric Acid				
Methanol	✓	SHBK5051	2019/01/04	Borax				Spike Date 2019/01/04
2-Propanol (IPA)				Calcium Chloride				Spike Syringe/Pipette ID#
Acetonitrile				EDTA				M23487B
Sodium Sulfate				Phosphate Buffer				Int. Std Syringe/Pipette ID#
70:30 Methanol: Water				Sodium Thiosulphate				Q40174G
60:40 Water: Methanol	✓	PRLRE-124-209		DNPH				*Spiking Witnessed by:
DCM:Ethyl Ether (75:25)				FMOC				JB
Hexane:IPA (98:2)				5M Acetate Buffer				Final pH
2% Formic Acid	✓	PRLRE-124-211		0.2% NH_4OH	✓	PRLRE-124-210		
0.2% Formic Acid				Leachate Fluid				
0.05M KOH				Reagent Water	✓	58248	2019/01/04	
0.05M HCl								
Envi Carb	✓	107564						

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #	Bottle Tracking
Pipettor K52290G M25679G K19865F	✓	SPE Cartridge	004138246A	✓	QC Balance ID	FC-1	Bottle# 20419
	✓	Filter			Thermometer ID &Temp		Cap# 20307
Dispenser		Centrifuge	42148683	✓			Systems plus Lot# 18-12-18
		Sonicator					

Comments: 500 ml Volumetric Cylinder (#3026)

* - SPIKING OF QC's & SAMPLES MUST BE WITNESSED AT ALL TIMES.

Worksheet: 5914930

Dilution and Column Cleanup Worksheet

Job Number	Sample ID	Sample: Initial Final Volume	Dilution Required	Sample added mL	Solvent Added mL	Int Stan Added uL	New Effective Final (ml) Volume	INITIAL KPC DATE	Column Clean Up
B8X5580	IOF232	1x	10x	12.5	–	–	12.5	2019/01/04	–
	IOF233	1x	10x	12.5	–	–	12.5	2019/01/04	–
					KPG 2019/01/04				

Worksheet Number: **5914930**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	Units	SPIKE	SPIKE Dup1	BLANK	DL	B8X5580 IOF232 ReWork	B8X5580 IOF233 ReWork
6:2 Fluorotelomer sulfonate	ug/L	103.53198	100.36734	0	0.02	N/A*******	N/A*******
8:2 Fluorotelomer sulfonate	ug/L	99.69583	98.35417	0	0.02	N/A*******	N/A*******
EtFOSA	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
EtFOSAA	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
EtFOSE	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
MeFOSA	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
MeFOSAA	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
MeFOSE	ug/L	N/A*******	N/A*******	N/A*******	0.02	N/A*******	N/A*******
Perfluorobutanoic acid	ug/L	97.09749	95.28153	0	0.02	N/A*******	N/A*******
Perfluorobutane Sulfonate (PFBS)	ug/L	91.15537	93.42153	0	0.02	N/A*******	N/A*******
Perfluorodecane Sulfonate	ug/L	92.43971	85.98126	0	0.02	N/A*******	N/A*******
Perfluoroheptanoic Acid (PFHpA)	ug/L	94.43464	99.64756	0	0.02	N/A*******	N/A*******
Perfluoroheptane sulfonate	ug/L	93.45217	94.68522	0	0.02	N/A*******	N/A*******
Perfluorohexanoic Acid (PFHxA)	ug/L	99.20449	97.45656	0	0.02	N/A*******	N/A*******
Perfluorohexane Sulfonate (PFHxS)	ug/L	92.59188	93.75765	0	0.02	N/A*******	N/A*******
Perfluorononanoic Acid (PFNA)	ug/L	94.49602	94.23522	0	0.02	N/A*******	N/A*******
Perfluorooctane Sulfonamide (PFOSA)	ug/L	94.90601	92.69080	0	0.02	N/A*******	N/A*******
Perfluoropentanoic Acid (PFPeA)	ug/L	92.81286	94.31919	0	0.02	N/A*******	N/A*******
Perfluorotetradecanoic Acid	ug/L	96.09650	99.86139	0	0.02	0	0
Perfluorotridecanoic Acid	ug/L	98.77216	102.79712	0	0.02	N/A*******	N/A*******
Perfluoroundecanoic Acid (PFUnA)	ug/L	98.29366	101.99318	0	0.02	N/A*******	N/A*******
Perfluorodecanoic Acid (PFDA)	ug/L	93.41822	91.89417	0	0.02	N/A*******	N/A*******
Perfluorododecanoic Acid (PFDoA)	ug/L	96.31868	100.90987	0	0.02	0	0
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	99.56659	93.80564	0	0.02	N/A*******	N/A*******
Perfluorooctane Sulfonate (PFOS)	ug/L	96.81429	104.24335	0	0.02	N/A*******	N/A*******
13C2-6:2 Fluorotelomer sulfonate	ug/L	91.0421147	96.0483789	95.5627595		N/A*******	N/A*******
13C2-8:2 Fluorotelomer sulfonate	ug/L	95.4843295	93.7683669	85.6359131		N/A*******	N/A*******
13C2-perfluorotetradecanoic acid	ug/L	90.0613308	81.3027476	80.6089011		51.6352208	!! 48.4645
13C3-Perfluorobutanesulfonic acid	ug/L	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******
13C4-Perfluorobutanoic acid	ug/L	95.0983432	96.9568708	95.4249867		N/A*******	N/A*******
D3-MeFOSAA	ug/L	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******
D5-EtFOSAA	ug/L	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******
D7-MeFOSE	ug/L	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******
D9-EtFOSE	ug/L	N/A*******	N/A*******	N/A*******		N/A*******	N/A*******
13C2-Perfluorodecanoic acid	ug/L	104.432238	99.2959259	93.7494584		N/A*******	N/A*******
13C2-Perfluorododecanoic acid	ug/L	89.4713864	84.7705740	83.3723279		69.9862651	66.6118408
13C2-Perfluorohexanoic acid	ug/L	94.1984747	96.1914417	93.4683532		N/A*******	N/A*******
13C2-Perfluoroundecanoic acid	ug/L	95.9842710	87.6308146	93.4974697		N/A*******	N/A*******
13C4-Perfluoroheptanoic acid	ug/L	97.9688700	94.1631110	94.2007862		N/A*******	N/A*******
13C5-Perfluorononanoic acid	ug/L	97.1418032	99.7444289	89.2941757		N/A*******	N/A*******
13C4-Perfluorooctanoic acid	ug/L	93.7749377	99.1037058	96.6732934		N/A*******	N/A*******
13C4-Perfluorooctanesulfonate	ug/L	96.3726323	86.2332421	90.4657032		N/A*******	N/A*******
13C5-Perfluoropentanoic acid	ug/L	94.8952686	95.2838034	91.9549969		N/A*******	N/A*******
13C8-Perfluorooctane Sulfonamide	ug/L	90.9190849	90.1769012	87.2228143		N/A*******	N/A*******
18O2-Perfluorohexanesulfonate	ug/L	97.8104890	95.8016351	91.1334354		N/A*******	N/A*******

2019/01/07
DAD

Worksheet Number: **5914930**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

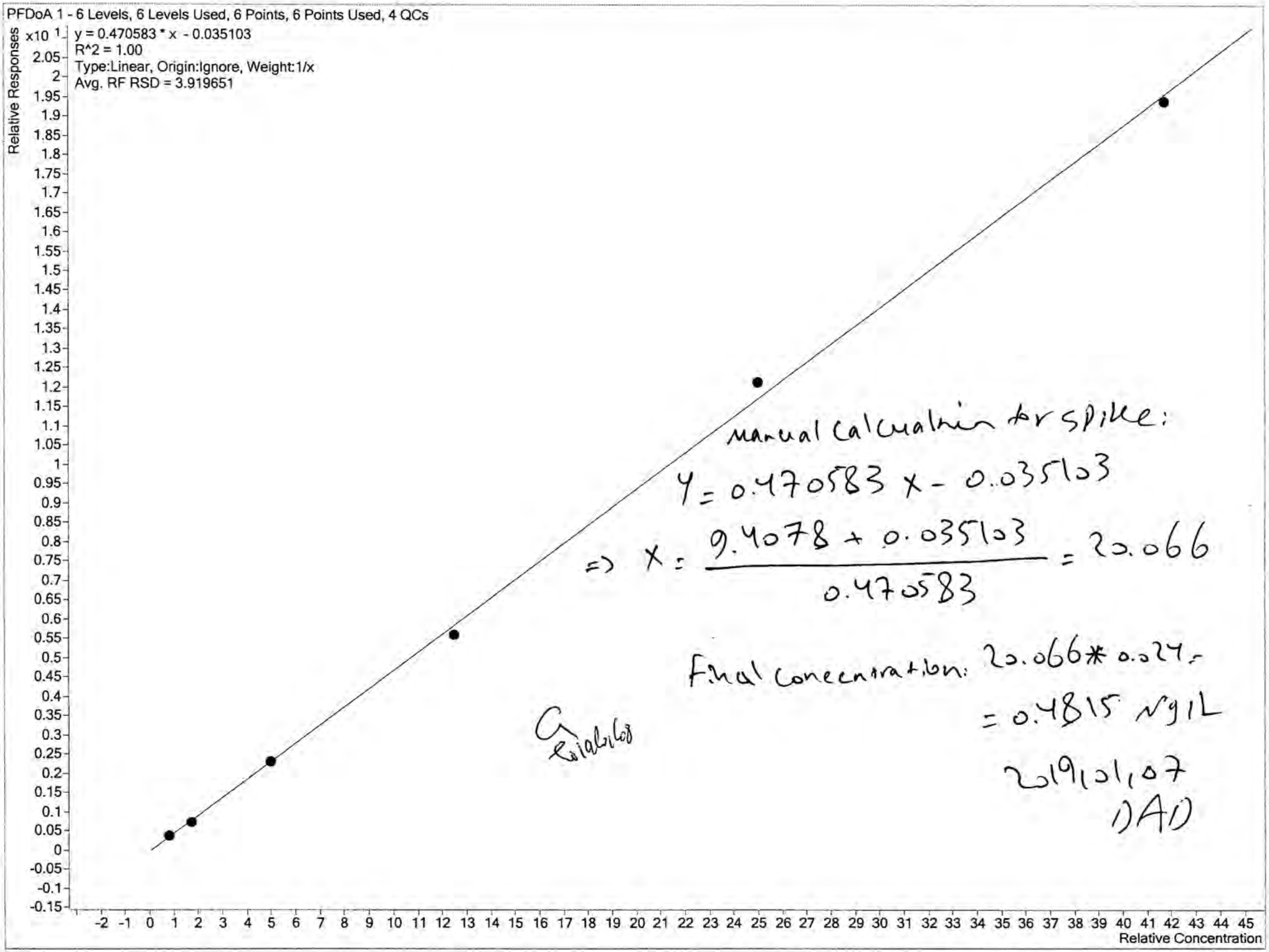
Parameter Name	DL	B8Y5672 IQK696	B8Y5672 IQK697	B8Y5672 IQK698	B8Y5672 IQK699	B8Y5672 IQK700	B8Y5672 IQK701
6:2 Fluorotelomer sulfonate	0.2	0	0	0	0	0	0
8:2 Fluorotelomer sulfonate	0.2	0	0	0	0	0	0
EtFOSA	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
EtFOSAA	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
EtFOSE	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
MeFOSA	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
MeFOSAA	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
MeFOSE	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorobutanoic acid	0.2	0	0	0	0	0	0
Perfluorobutane Sulfonate (PFBS)	0.2	0	0	0	0	0	0
Perfluorodecane Sulfonate	0.2	0	0	0	0	0	0
Perfluoroheptanoic Acid (PFHpA)	0.2	0	0	0	0	0	0
Perfluoroheptane sulfonate	0.2	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
Perfluorohexanoic Acid (PFHxA)	0.2	0	0	0	0	0	0
Perfluorohexane Sulfonate (PFHxS)	0.2	0	0	0	0	0	0
Perfluorononanoic Acid (PFNA)	0.2	0	0	0	0	0	0
Perfluorooctane Sulfonamide (PFOSA)	0.2	0	0	0	0	0	0
Perfluoropentanoic Acid (PFPeA)	0.2	0	0	0	0	0	0
Perfluorotetradecanoic Acid	0.2	0	0	0	0	0	0
Perfluorotridecanoic Acid	0.2	0	0	0	0	0	0
Perfluoroundecanoic Acid (PFUnA)	0.2	0	0	0	0	0	0
Perfluorodecanoic Acid (PFDA)	0.2	0	0	0	0	0	0
Perfluorododecanoic Acid (PFDoA)	0.2	0	0	0	0	0	0
Perfluoro-n-Octanoic Acid (PFOA)	0.2	0	0.00700259	0.00484270	0.00958935	0	0.00546635
Perfluorooctane Sulfonate (PFOS)	0.2	0	0.00318107	0	0.00266954	0	0
13C2-6:2 Fluorotelomer sulfonate		101.341752	99.2211036	91.9605813	103.018010	101.514046	94.3980108
13C2-8:2 Fluorotelomer sulfonate		83.4432904	89.6272618	81.9679075	84.6097063	86.1776583	90.3891740
13C2-perfluorotetradecanoic acid		85.4884227	78.2742711	80.6035015	78.7334489	83.0291273	79.0812072
13C3-Perfluorobutanesulfonic acid		N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
13C4-Perfluorobutanoic acid		95.9795124	90.8553923	85.5773873	91.8706656	93.0466520	90.3802776
D3-MeFOSAA		N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
D5-EtFOSAA		N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
D7-MeFOSE		N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
D9-EtFOSE		N/A*******	N/A*******	N/A*******	N/A*******	N/A*******	N/A*******
13C2-Perfluorodecanoic acid		91.4930039	94.7734634	94.9785444	97.7593950	97.4465522	94.2506771
13C2-Perfluorododecanoic acid		85.1121760	82.2458556	83.4245203	80.9970545	88.8495304	86.5156366
13C2-Perfluorohexanoic acid		91.9017996	92.9715334	90.1644563	91.4094976	95.6330878	94.9146470
13C2-Perfluoroundecanoic acid		87.6476436	82.4097664	86.4207241	90.1711179	87.3135038	90.9719376
13C4-Perfluoroheptanoic acid		92.6170754	96.9896102	88.0223549	90.3057009	93.1994409	94.2552748
13C5-Perfluorononanoic acid		98.0966618	95.6363354	88.3724780	95.0352759	99.9585165	91.5364626
13C4-Perfluorooctanoic acid		99.2778915	95.5268984	92.1112707	93.3051443	96.7414718	90.8992283
13C4-Perfluorooctanesulfonate		90.4846324	93.1800419	82.3703520	94.4290017	94.0616166	95.0552322
13C5-Perfluoropentanoic acid		93.6217458	92.1987929	89.8661078	91.1036276	94.7230419	91.9572620
13C8-Perfluorooctane Sulfonamide		88.4246325	88.6258381	83.6580954	86.1181356	90.3028306	86.2848293
18O2-Perfluorohexanesulfonate		90.3857694	91.2639888	93.9601339	93.3271585	91.1684108	92.6890547

Worksheet Number: **5914930**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

Parameter Name	B8Y5672 IQK702	B8Y5672 IQK703	DL	RDL	MDL	IDL	
6:2 Fluorotelomer sulfonate	0	0	0.02	0.02	0.0066	0	
8:2 Fluorotelomer sulfonate	0	0	0.02	0.02	0.0066	0	
EtFOSA	N/A*******	N/A*******	0.02	0.02	0.01	0	
EtFOSAA	N/A*******	N/A*******	0.02	0.02	0.0033	0	
EtFOSE	N/A*******	N/A*******	0.02	0.02	0.0079	0	
MeFOSA	N/A*******	N/A*******	0.02	0.02	0.013	0	
MeFOSAA	N/A*******	N/A*******	0.02	0.02	0.0029	0	
MeFOSE	N/A*******	N/A*******	0.02	0.02	0.012	0	
Perfluorobutanoic acid	0	0	0.02	0.02	0.0055	0	
Perfluorobutane Sulfonate (PFBS)	0	0	0.02	0.02	0.0054	0	
Perfluorodecane Sulfonate	0	0	0.02	0.02	0.006	0	
Perfluoroheptanoic Acid (PFHpA)	0	0	0.02	0.02	0.0074	0	
Perfluoroheptane sulfonate	N/A*******	N/A*******	0.02	0.02	0.008	0	
Perfluorohexanoic Acid (PFHxA)	0	0	0.02	0.02	0.0035	0	
Perfluorohexane Sulfonate (PFHxS)	0	0	0.02	0.02	0.0056	0	
Perfluorononanoic Acid (PFNA)	0	0	0.02	0.02	0.0087	0	
Perfluorooctane Sulfonamide (PFOSA)	0	0	0.02	0.02	0.0034	0	
Perfluoropentanoic Acid (PFPeA)	0	0	0.02	0.02	0.0075	0	
Perfluorotetradecanoic Acid	0	0	0.02	0.02	0.0027	0	
Perfluorotridecanoic Acid	0	0	0.02	0.02	0.0038	0	
Perfluoroundecanoic Acid (PFUnA)	0	0	0.02	0.02	0.0025	0	
Perfluorodecanoic Acid (PFDA)	0	0	0.02	0.02	0.0061	0	
Perfluorododecanoic Acid (PFDoA)	0	0	0.02	0.02	0.005	0	
Perfluoro-n-Octanoic Acid (PFOA)	0	0.00548849	0.02	0.02	0.0033	0	
Perfluorooctane Sulfonate (PFOS)	0	0.00771923	0.02	0.02	0.006	0	
13C2-6:2 Fluorotelomer sulfonate	95.7137051	96.1653182					
13C2-8:2 Fluorotelomer sulfonate	83.7744054	92.6472108					
13C2-perfluorotetradecanoic acid	76.5515241	65.9048502					
13C3-Perfluorobutanesulfonic acid	N/A*******	N/A*******					
13C4-Perfluorobutanoic acid	94.7447612	93.5957023					
D3-MeFOSAA	N/A*******	N/A*******					
D5-EtFOSAA	N/A*******	N/A*******					
D7-MeFOSE	N/A*******	N/A*******					
D9-EtFOSE	N/A*******	N/A*******					
13C2-Perfluorodecanoic acid	96.0800001	89.2452226					
13C2-Perfluorododecanoic acid	78.7395589	83.4193041					
13C2-Perfluorohexanoic acid	95.2745860	92.9687931					
13C2-Perfluoroundecanoic acid	81.9106731	82.1799156					
13C4-Perfluoroheptanoic acid	94.7762065	95.9196055					
13C5-Perfluorononanoic acid	97.7517613	91.9844026					
13C4-Perfluorooctanoic acid	95.7444488	95.6574569					
13C4-Perfluorooctanesulfonate	86.0087670	88.8344953					
13C5-Perfluoropentanoic acid	94.8628262	96.4493005					
13C8-Perfluorooctane Sulfonamide	87.8165454	85.8111619					
18O2-Perfluorohexanesulfonate	94.1099029	93.2870953					



Manual calculation for spike:

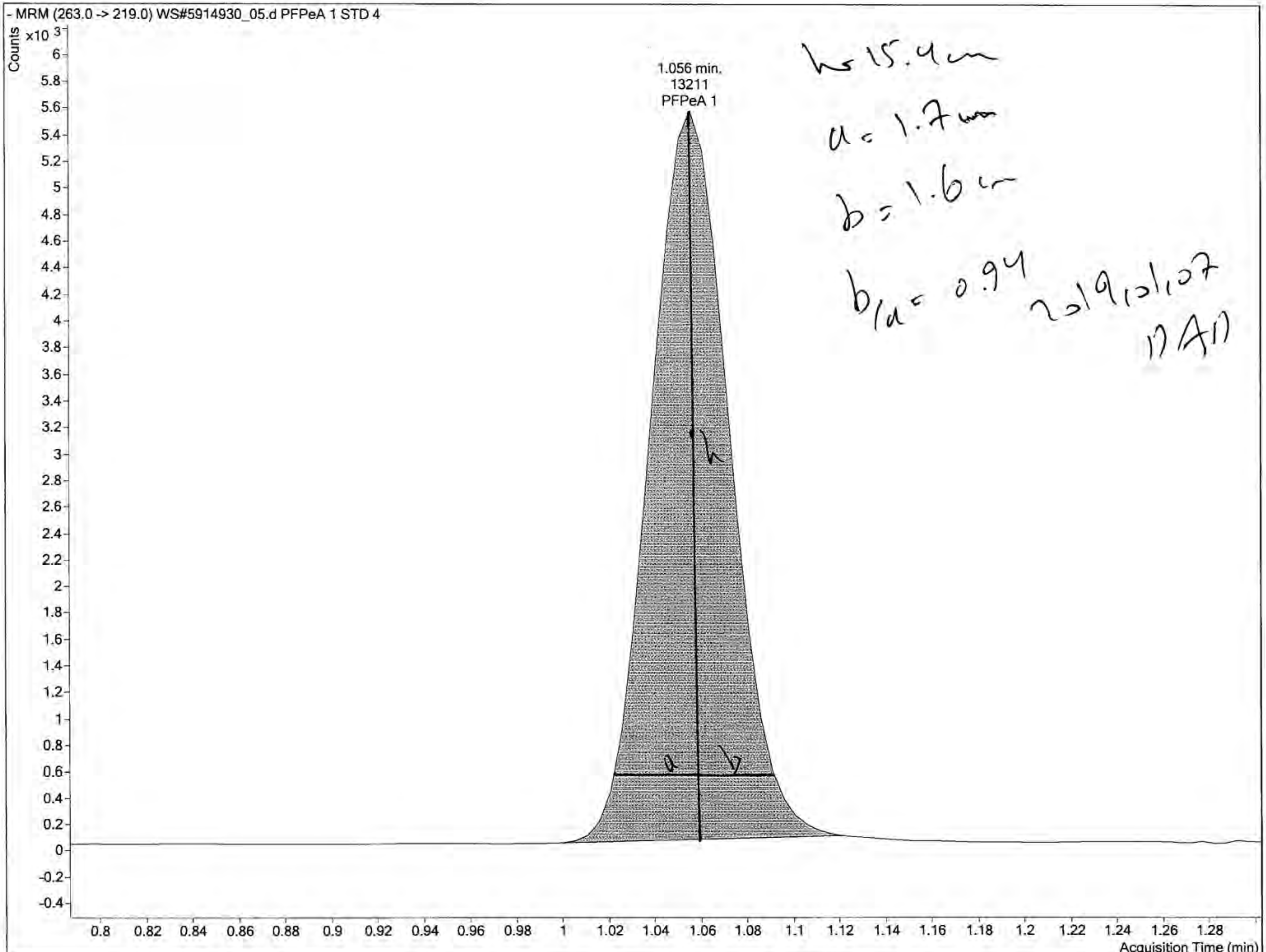
$y = 0.470583\,x - 0.035103$

$\Rightarrow x = \dfrac{9.4078 + 0.035103}{0.470583} = 20.066$

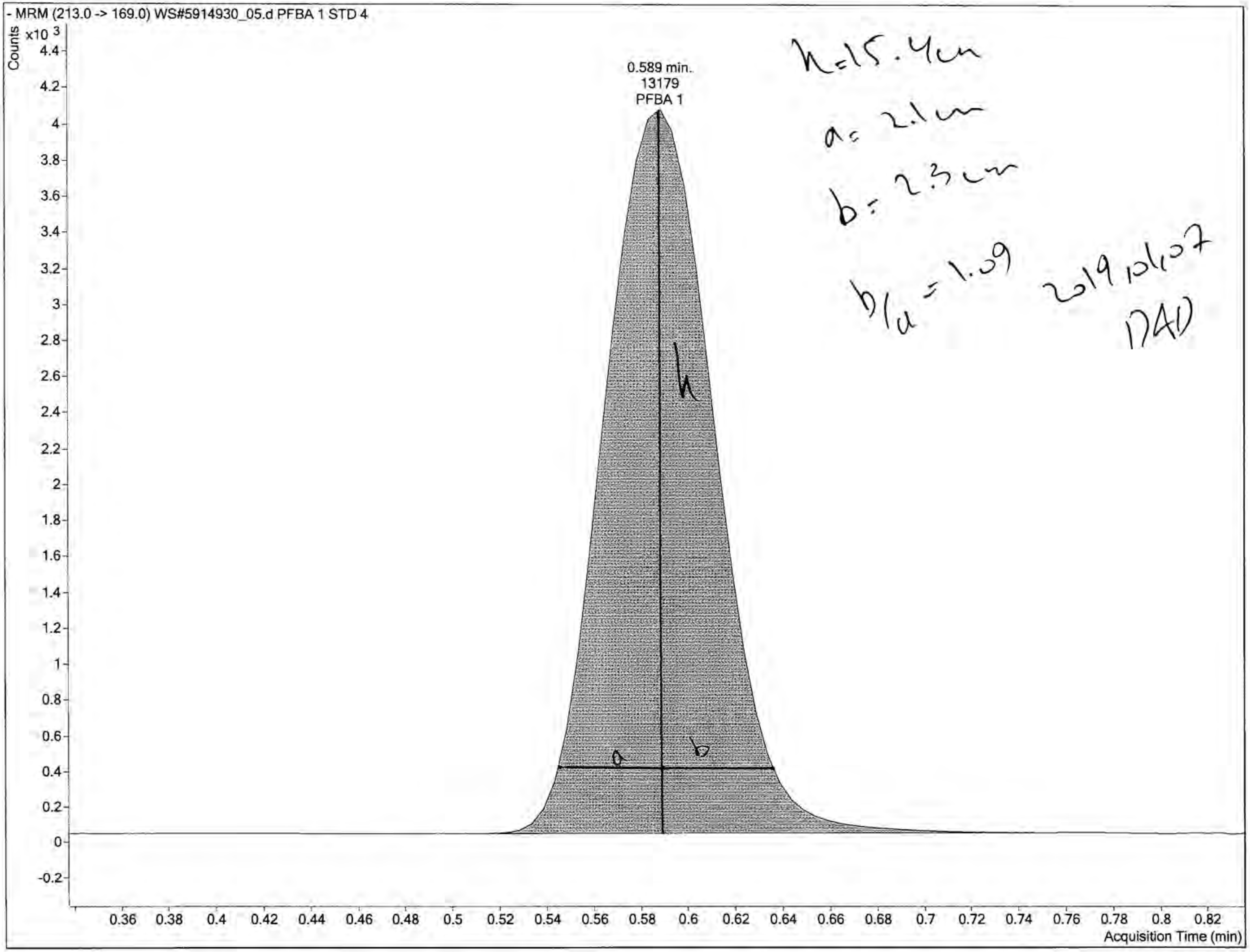
Final concentration: $20.066 * 0.024 = 0.4815$ ng/L

2019,01,07

DAD



- MRM (263.0 -> 219.0) WS#5914930_05.d PFPeA 1 STD 4
Counts x10 3
1.056 min.
13211
PFPeA 1
h=15.4cm
a=1.7cm
b=1.6cm
b/a= 0.94
2019,01,07
17A11
Acquisition Time (min)


- MRM (213.0 -> 169.0) WS#5914930_05.d PFBA 1 STD 4
Counts x10 3
0.589 min.
13179
PFBA 1
Acquisition Time (min)
h=15.4cm
a= 2.1cm
b= 2.3cm
b/a = 1.09
2019.10.07
DAD
h
a
b

Report Name: Worksheet - Parameter Lists
Report Date: 2019/01/04

Test Code: **PFOSALCM-W**
Worksheet Number: **5914930**

Sample Number	Parameter Code	Parameter	
IOF232-01	PFTEDA	Perfluorotetradecanoic Acid	
IOF233-01	PFDOA	Perfluorododecanoic Acid (PFDoA)	
IQK696-01	6:2FTS	6:2 Fluorotelomer sulfonate	*
IQK697-01	8:2FTS	8:2 Fluorotelomer sulfonate	*
IQK698-01	PFBA	Perfluorobutanoic acid	
IQK699-01	PFBS	Perfluorobutane Sulfonate (PFBS)	
IQK700-01	PFDS	Perfluorodecane Sulfonate	
IQK701-01	PFHPA	Perfluoroheptanoic Acid (PFHpA)	
IQK702-01	PFHXA	Perfluorohexanoic Acid (PFHxA)	
IQK703-01	PFHXS	Perfluorohexane Sulfonate (PFHxS)	
	PFNA	Perfluorononanoic Acid (PFNA)	
	PFOSA	Perfluorooctane Sulfonamide (PFOSA)	
	PFPEA	Perfluoropentanoic Acid (PFPeA)	
	PFTEDA	Perfluorotetradecanoic Acid	
	PFTRDA	Perfluorotridecanoic Acid	
	PFUNA	Perfluoroundecanoic Acid (PFUnA)	
	PFDA	Perfluorodecanoic Acid (PFDA)	
	PFDOA	Perfluorododecanoic Acid (PFDoA)	
	PFOA	Perfluoro-n-Octanoic Acid (PFOA)	
	PFOS	Perfluorooctane Sulfonate (PFOS)	

* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 5914930 Instrument Sequences

1.	5914930:SPIKE	SPIKE
2.	5914930:SPIKE:D1	SPIKE :D1
3.	5914930:BLANK	BLANK
4.	5914930:IOF232-01	GP002
5.	5914930:IOF233-01	GP003
6.	5914930:IQK696-01	[redacted]
7.	5914930:IQK697-01	[redacted]
8.	5914930:IQK698-01	[redacted]
9.	5914930:IQK699-01	[redacted]
10.	5914930:IQK700-01	[redacted]
11.	5914930:IQK701-01	[redacted]
12.	5914930:IQK702-01	[redacted]
13.	5914930:IQK703-01	[redacted]

Worklist Report

Agilent Technologies

Instrument Name: LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_190105_Low.wkl

Operator Name:	---
Run Type:	Standard Start
Part of Method to Run:	Acquisition Only
Execution of Acquisition-DA:	Synchronous
Acquisition Method Path:	D:\MassHunter\Acquisition Method
DA Method Path:	D:\MassHunter\methods
Data File Path:	D:\MassHunter\data\PFC\20190105\WS#5914930
Pre-Worklist Script:	---
Post-Worklist Script:	SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
Acquisition Clean Up Script:	---
Overlapped Injection:	No
Clear Sample Selection After Run:	Yes
Wait Time for Ready(Min):	10
Threshold Disk Value(GB):	10
Comment:	Column #356 MP A1: Solution #462 [FSRE18] MP B1: Methanol lot# SHBK5051, Sigma

AKH 2019/01/05
verified by DAD 2019/01/07

Plate Barcode:

Plate	Barcode
P3	

Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	RINSE	P3-A1	PFC_Water_Low.m	WS#5914930_01.d	Sample		As Method	-
2	STD 1	P3-D1	PFC_Water_Low.m	WS#5914930_02.d	Calibration	STD 1	As Method	-
3	STD 2	P3-D2	PFC_Water_Low.m	WS#5914930_03.d	Calibration	STD 2	As Method	-
4	STD 3	P3-D3	PFC_Water_Low.m	WS#5914930_04.d	Calibration	STD 3	As Method	-
5	STD 4	P3-D4	PFC_Water_Low.m	WS#5914930_05.d	Calibration	STD 4	As Method	-
6	STD 5	P3-D5	PFC_Water_Low.m	WS#5914930_06.d	Calibration	STD 5	As Method	-
7	STD 6	P3-D6	PFC_Water_Low.m	WS#5914930_07.d	Calibration	STD 6	As Method	-

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
8	IB	P3-D7	PFC_Water_Low.m	WS#5914930_08.d	Sample		As Method	-
9	ICV	P3-D8	PFC_Water_Low.m	WS#5914930_09.d	QC	ICV	As Method	-
10	ISC	P3-D1	PFC_Water_Low.m	WS#5914930_10.d	QC	STD 1	As Method	-
11	5914930:BLANK	P3-D9	PFC_Water_Low.m	WS#5914930_11.d	Sample		As Method	
12	5914930:SPIKE	P3-E1	PFC_Water_Low.m	WS#5914930_12.d	QC	ICV	As Method	-
13	5914930:SPIKE:D1	P3-E2	PFC_Water_Low.m	WS#5914930_13.d	QC	ICV	As Method	-
14	5914930:IOF232-01:10x	P3-E3	PFC_Water_Low.m	WS#5914930_14.d	Sample		As Method	-
15	5914930:IOF233-01:10x	P3-E4	PFC_Water_Low.m	WS#5914930_15.d	Sample		As Method	-
16	5914930:IQK696-01	P3-E5	PFC_Water_Low.m	WS#5914930_16.d	Sample		As Method	-
17	5914930:IQK697-01	P3-E6	PFC_Water_Low.m	WS#5914930_17.d	Sample		As Method	-
18	5914930:IQK698-01	P3-E7	PFC_Water_Low.m	WS#5914930_18.d	Sample		As Method	-
19	5914930:IQK699-01	P3-E8	PFC_Water_Low.m	WS#5914930_19.d	Sample		As Method	-
20	5914930:IQK700-01	P3-E9	PFC_Water_Low.m	WS#5914930_20.d	Sample		As Method	-
21	5914930:IQK701-01	P3-F1	PFC_Water_Low.m	WS#5914930_21.d	Sample		As Method	-
22	5914930:IQK702-01	P3-F2	PFC_Water_Low.m	WS#5914930_22.d	Sample		As Method	-
23	5914930:IQK703-01	P3-F3	PFC_Water_Low.m	WS#5914930_23.d	Sample		As Method	-
24	CCV	P3-D4	PFC_Water_Low.m	WS#5914930_24.d	ConCal	STD 4	As Method	-

FINAL INJECTION SEQUENCE

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2019/01/05 7:45 PM	WS#5914930_02.d	PFC_Water_Low.m	P3-D1
STD 2	-	2019/01/05 7:50 PM	WS#5914930_03.d	PFC_Water_Low.m	P3-D2
STD 3	-	2019/01/05 7:55 PM	WS#5914930_04.d	PFC_Water_Low.m	P3-D3
STD 4	-	2019/01/05 8:00 PM	WS#5914930_05.d	PFC_Water_Low.m	P3-D4
STD 5	-	2019/01/05 8:05 PM	WS#5914930_06.d	PFC_Water_Low.m	P3-D5
STD 6	-	2019/01/05 8:10 PM	WS#5914930_07.d	PFC_Water_Low.m	P3-D6
IB	-	2019/01/05 8:15 PM	WS#5914930_08.d	PFC_Water_Low.m	P3-D7
ICV	-	2019/01/05 8:19 PM	WS#5914930_09.d	PFC_Water_Low.m	P3-D8
ISC	-	2019/01/05 8:24 PM	WS#5914930_10.d	PFC_Water_Low.m	P3-D1
5914930:BLANK		2019/01/05 8:29 PM	WS#5914930_11.d	PFC_Water_Low.m	P3-D9
5914930:SPIKE	-	2019/01/05 8:34 PM	WS#5914930_12.d	PFC_Water_Low.m	P3-E1
5914930:SPIKE:D1	-	2019/01/05 8:39 PM	WS#5914930_13.d	PFC_Water_Low.m	P3-E2
5914930:IOF232-01:10x	-	2019/01/05 8:44 PM	WS#5914930_14.d	PFC_Water_Low.m	P3-E3
5914930:IOF233-01:10x	-	2019/01/05 8:49 PM	WS#5914930_15.d	PFC_Water_Low.m	P3-E4
5914930:IQK696-01	-	2019/01/05 8:54 PM	WS#5914930_16.d	PFC_Water_Low.m	P3-E5
5914930:IQK697-01	-	2019/01/05 8:59 PM	WS#5914930_17.d	PFC_Water_Low.m	P3-E6
5914930:IQK698-01	-	2019/01/05 9:04 PM	WS#5914930_18.d	PFC_Water_Low.m	P3-E7
5914930:IQK699-01	-	2019/01/05 9:09 PM	WS#5914930_19.d	PFC_Water_Low.m	P3-E8
5914930:IQK700-01	-	2019/01/05 9:14 PM	WS#5914930_20.d	PFC_Water_Low.m	P3-E9
5914930:IQK701-01	-	2019/01/05 9:18 PM	WS#5914930_21.d	PFC_Water_Low.m	P3-F1
5914930:IQK702-01	-	2019/01/05 9:23 PM	WS#5914930_22.d	PFC_Water_Low.m	P3-F2
5914930:IQK703-01	-	2019/01/05 9:28 PM	WS#5914930_23.d	PFC_Water_Low.m	P3-F3
CCV	-	2019/01/05 9:33 PM	WS#5914930_24.d	PFC_Water_Low.m	P3-D4

LCMS04

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C6-PFHxA	13C9-PFDA
	Mass labeled IS	STD 4	STD 4
	IS Area	15175	17229
	Upper Limit (+50%)	22763	25844
	Lower Limit (-50%)	7588	8615
		IS Peak Area	IS Peak Area
STD 1		15025	17787
STD 2		14324	17249
STD 3		14071	16701
STD 4		15175	17229
STD 5		14756	17144
STD 6		14736	17591
IB		14273	17557
ICV		14261	17223
ISC		15749	18144
5897102:BLANK		15352	18298
5897102:SPIKE		15277	17855
5897102:MTRX SPK		15221	18224
5897102:MTRX SPK:D1		15098	17822
IB		14319	16905
5897102:IOF231-01		15422	17901
5897102:IOF232-01:10x		14841	17819
5897102:IOF233-01:10x		14540	16972
5897102:IOF234-01		15005	17792
5897102:IOF236-01		14814	18144
5897102:IOF237-01		14756	17265
5897102:IOF238-01		14723	17016
5897102:IOF239-01		15192	18627
5897102:IOF254-01		14538	17629
CCV		15176	18082

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C9-PFDA
	Mass labeled IS	STD 4
	IS Area	18857
	Upper Limit (+50%)	28286
	Lower Limit (-50%)	9429
		IS Peak Area
STD 1		19924
STD 2		18581
STD 3		17724
STD 4		18857
STD 5		18780
STD 6		18449
IB		17770
ICV		17656
ISC		19390
5897102:BLANK		18864
5897102:SPIKE		18546
5897102:MTRX SPK		18554
5897102:MTRX SPK:D1		18217
IB		17616
5897102:IOF231-01		18922
5897102:IOF232-01:10x		18293
5897102:IOF233-01:10x		17733
5897102:IOF234-01		19039
5897102:IOF236-01		17843
5897102:IOF237-01		17868
5897102:IOF238-01		18259
5897102:IOF239-01		19042
5897102:IOF254-01		17714
CCV		18491

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C6-PFHxA	13C9-PFDA
	Mass labeled IS	STD 4	STD 4
	IS Area	17264	20316
	Upper Limit (+50%)	25896	30474
	Lower Limit (-50%)	8632	10158
		IS Peak Area	IS Peak Area
STD 1		17993	20632
STD 2		17097	20341
STD 3		16535	19633
STD 4		17264	20316
STD 5		16051	19483
STD 6		15834	19019
IB		16464	20022
ICV		16794	20302
ISC		16827	20057
5899819:BLANK		16997	20590
5899819:SPIKE		16640	19567
5899819:MTRX SPK		16948	20477
5899819:MTRX SPK:D1		16883	19942
IB		16584	19612
5899819:IMQ358-01		16965	20121
5899819:IMW968-00:10x		16312	19722
5899819:IMW968-00		14949	19099
IB		15989	19175
5899819:IMW970-00		15146	19042
5899819:IMW971-00		15175	18640
5899819:INO671-01		16297	19444
5899819:IOF247-01		16909	20265
5899819:IOF248-01		16643	19674
5899819:IOF249-01		16736	19960
CCV		16671	19906
5899819:IOF250-01		16198	19384
5899819:IOF251-01		16680	20433
5899819:IOF252-01		16591	19890
5899819:IOF253-01		17048	20155
5899819:IOF255-01		16749	19615
5899819:IOF256-01		16754	19827
5899819:IOF257-01		16612	19863
CCV		16766	19904

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C9-PFDA
	Mass labeled IS	STD 4
	IS Area	21050
	Upper Limit (+50%)	31575
	Lower Limit (-50%)	10525
		IS Peak Area
STD 1		20772
STD 2		20956
STD 3		20747
STD 4		21050
STD 5		20839
STD 6		20367
IB		21125
ICV		21578
ISC		21319
5899819:BLANK		22012
5899819:SPIKE		21453
5899819:MTRX SPK		22094
5899819:MTRX SPK:D1		21491
IB		20973
5899819:IOF247-01		22186
5899819:IOF248-01		21772
5899819:IOF249-01		22564
CCV		21270
5899819:IOF250-01		20727
5899819:IOF251-01		21467
5899819:IOF252-01		21040
5899819:IOF253-01		21720
5899819:IOF255-01		21210
5899819:IOF256-01		21302
5899819:IOF257-01		20934
CCV		21080

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C9-PFDA
	Mass labeled IS	STD 4
	IS Area	14690
	Upper Limit (+50%)	22035
	Lower Limit (-50%)	7345
		IS Peak Area
STD 1		14340
STD 2		14026
STD 3		13523
STD 4		14690
STD 5		15167
STD 6		14046
IB		14644
ICV		14081
ISC		14632
5914930:BLANK		17130
5914930:SPIKE		14264
5914930:SPIKE:D1		14923
5914930:IOF232-01:10x		14909
5914930:IOF233-01:10x		15350
5914930:IQK696-01		14350
5914930:IQK697-01		14815
5914930:IQK698-01		14000
5914930:IQK699-01		14883
5914930:IQK700-01		13852
5914930:IQK701-01		13942
5914930:IQK702-01		13985
5914930:IQK703-01		14135
CCV		14479

Maxxam
A Bureau Veritas Group Company

Perfluorinated Compound Internal Standard (IS) Evaluation

Sample Name	Analyte	PFBS, PFHxS, PFOS			PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTrDA, PFTeDA, 13C2-PFHxA, 13C2-PFDA			MeFOSAA, EtFOSAA, D5-EtFOSAA		
	Mass labeled IS	MPFOS			MPFOA			D3-MeFOSAA IS		
	Average IS Area in ICAL	181500			1683333			1473333		
		IS Peak Area	IS %R (ICAL)	IS %R (CCV)	IS Peak Area	IS %R (ICAL)	IS %R (CCV)	IS Peak Area	IS %R (ICAL)	IS %R (CCV)
STD 1		168000	93		1620000	96		1380000	94	
STD 2		172000	95		1690000	100		1510000	102	
STD 3		202000	111		1790000	106		1600000	109	
STD 4		177000	98		1710000	102		1440000	98	
STD 5		183000	101		1680000	100		1490000	101	
STD 6		187000	103		1610000	96		1420000	96	
STD 5		183000	101		1680000	100		1490000	101	
ICV		169000	93		1650000	98		1500000	102	
CCV		187000	103	100	1770000	105	100	1560000	106	100
tPFOA		186000	102	99	1750000	104	99	1660000	113	106
5898852~BLANK		231000	127	124	2060000	122	116	1830000	124	117
5898852~SPIKE		216000	119	116	2050000	122	116	1690000	115	108
5898852~MTRX SPK		222000	122	119	1990000	118	112	1760000	119	113
5898852~MTRX SPK:D1		234000	129	125	1960000	116	111	1830000	124	117
5898852~HXO250-01		215000	118	115	2080000	124	118	1950000	132	125
5898852~HXO252-01		214000	118	114	2110000	125	119	2070000	140	133
5898852~IOF240-01		204000	112	109	2120000	126	120	1870000	127	120
5898852~IOF241-01		217000	120	116	2180000	130	123	1980000	134	127
5898852~IOF242-01		240000	132	128	2150000	128	121	1810000	123	116
5898852~IOF243-01		230000	127	123	1990000	118	112	1980000	134	127
5898852~IOF244-01		242000	133	129	2150000	128	121	2180000	148	140
5898852~IOF245-01		204000	112	109	2310000	137	131	1990000	135	128
5898852~IOF246-01		226000	125	121	2070000	123	117	2100000	143	135
CCV		184000	101	98	1850000	110	105	1520000	103	97
High IS Area		**202**	-	-	**179**	-	-	**160**	-	-
Low IS Area		**168**	-	-	**161**	-	-	**138**	-	-
RPD (%)		**18.4**	-	-	**10.6**	-	-	**14.8**	-	-

Perfluorinated Compound Internal Standard (IS) Evaluation

Sample Name	Analyte	PFBS, PFHxS, PFOS			PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTrDA, PFTeDA, 13C2-PFHxA, 13C2-PFDA			MeFOSAA, EtFOSAA, D5-EtFOSAA		
	Mass labeled IS	MPFOS			MPFOA			D3-MeFOSAA IS		
	Average IS Area in ICAL	228167			1705000			1445000		
		IS Peak Area	IS %R (ICAL)	IS %R (CCV)	IS Peak Area	IS %R (ICAL)	IS %R (CCV)	IS Peak Area	IS %R (ICAL)	IS %R (CCV)
STD 2		207000	91		1650000	97		1400000	97	
STD 3		234000	103		1660000	97		1360000	94	
STD 4		235000	103		1660000	97		1590000	110	
STD 5		224000	98		1660000	97		1410000	98	
STD 6		235000	103		1850000	109		1480000	102	
STD 1		234000	103		1750000	103		1430000	99	
ICV		227000	99		1790000	105		1440000	100	
CCV		228000	100		1530000	90		1600000	111	
tPFOA		239000	105	105	1900000	111	124	1590000	110	99
5907027~BLANK		244000	107	107	1990000	117	130	1570000	109	98
5907027~SPIKE		307000	135	135	2440000	143	159	2180000	151	136
5907027~SPIKE:D1		306000	134	134	2400000	141	157	2020000	140	126
5907027~HXO250-01		307000	135	135	2180000	128	142	2100000	145	131
5907027~HXO252-01		251000	110	110	2130000	125	139	1920000	133	120
5907027~IOF240-01		454000	199	199	3720000	218	243	3060000	212	191
5907027~IOF241-01		368000	161	161	2670000	157	175	2550000	176	159
5907027~IOF242-01		512000	224	225	4150000	243	271	3710000	257	232
5907027~IOF243-01		297000	130	130	2140000	126	140	1830000	127	114
5907027~IOF244-01		309000	135	136	2300000	135	150	2320000	161	145
5907027~IOF245-01		259000	114	114	1820000	107	119	1930000	134	121
5907027~IOF246-01		241000	106	106	1810000	106	118	1710000	118	107
CCV		236000	103	104	1740000	102	114	1730000	120	108
CCV		382000	167	100	2630000	154	100	2430000	168	100
5907027~SPIKE:D1		415000	182	109	3350000	196	127	2850000	197	117
5907027~IOF240-01		631000	277	165	4100000	240	156	3800000	263	156
5907027~IOF241-01		437000	192	114	3200000	188	122	3140000	217	129
5907027~IOF245-01		306000	134	80	2330000	137	89	2150000	149	88
5907027~IOF242-01		675000	296	177	4930000	289	187	4480000	310	184
CCV		329000	144	86	2450000	144	93	2040000	141	84

High IS Area	**235000**	-	-	**1850000**	-	-	**1590000**	-	-
Low IS Area	**207000**	-	-	**1650000**	-	-	**1360000**	-	-
RPD (%)	**12.7**	-	-	**11.4**	-	-	**15.6**	-	-

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

ThermoFisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0020918

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. ThermoFisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing.ThermoFisher does not maintain DMF's with the FDA. The following are the actual analytical results obtained:

Catalog Number	A454	Quality Test / Release Date	07/16/2018
Lot Number	183018		
Description	METHANOL, OPTIMA, A.C.S.		
Country of Origin	Canada	Suggested Retest Date	Jul/2023
Chemical Origin	Organic - synthetic		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		
Chemical Comment			

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	CLEAR, COLORLESS LIQUID
REFRACTIVE INDEX @ 25 DEG C		Inclusive Between 1.3260 - 1.3300	1.3267
LC GRADIENT SUITABILITY	PASS/FAIL	= PASS TEST	PASS TEST
WATER (H2O)	%	<= 0.07	0.007
SOLUBILITY IN WATER	PASS/FAIL	= PASS TEST	PASS TEST
TITRATABLE ACID	MEQ/G	<= 0.0003	0.0002
TITRATABLE BASE	MEQ/G	<= 0.0002	0.00003
OPTICAL ABS AT 205 NM	ABSORBANCE UNITS	<= 1.00	0.74
OPTICAL ABS AT 220 NM	ABSORBANCE UNITS	<= 0.23	0.16
OPTICAL ABS AT 230 NM	ABSORBANCE UNITS	<= 0.11	0.07
OPTICAL ABS AT 254 NM	ABSORBANCE UNITS	<= 0.01	<0.001
ASSAY	%	>= 99.8	99.9
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
EVAPORATION RESIDUE	ppm	<= 1	<0.1
FLUORESCENCE BACKGROUND	ppb	<= 1	<1
CARBONYL COMPOUNDS	%	<= 0.001	0.0006
COLOR	APHA	<= 5	5
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SUBSTANCES DARKENED BY H2SO4	PASS/FAIL	= PASS TEST	PASS TEST

Quality Assurance Specialist - Certificate of Analysis Bridgewater

Date Received: 2018.09.12 - 4 x 4L -P2A

Date received 2018/11/29 4/4L B7 AAX

Date Received: 2018.12.18 - 4 x 4L - HPLC Mainlab

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	**34860**
Batch Number:	**SHBK1963**
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	16 MAY 2018
Expiration Date:	APR 2023

Rec'd: j
2018/10/16
4 x 4 L
LC group

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.05
UV Absorbance 230nm	≤ 0.20	0.07
UV Absorbance 220nm	≤ 0.30	0.15
UV Absorbance 210nm	≤ 0.60	0.34
UV Absorbance 205nm	≤ 1.00	0.66
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	________	________

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: **34860**
Batch Number: **SHBK1963**

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Certificate of Analysis

Rec'd: 2018/11/12
By: OXD
4x4L
HPLC-M.C

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	34860
Batch Number:	SHBK5051
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	20 AUG 2018
Expiration Date:	JUL 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.01
UV Absorbance 235nm	≤ 0.10	0.02
UV Absorbance 230nm	≤ 0.20	0.02
UV Absorbance 220nm	≤ 0.30	0.05
UV Absorbance 210nm	≤ 0.60	0.21
UV Absorbance 205nm	≤ 1.00	0.52
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 10 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	-------------------------	-------------------------

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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Certificate of Analysis

Product Number: 34860
Batch Number: SHBK5051

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

Date Received: 2018/11/15 4x4L HPLC

REAGENT PREPARATION FORM

Reagent # 237 Replaced Reagent # 211 Analyst: 652

Reagent Name: 0.3% NH4OH in 96:4 (MeOH:H2O) Preparation date: 2018/07/17 Expiry date: Daily

Final Volume: 100ml Oven No.: – Temp.: – Final Conc.: 0.3/99.7 v/v

Balance ID: – Pipette/Syringe/Cylinder ID: 1434346 Storage: Shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH4OH	0.3ml	2018/01/09	2018/01/25	Fisher	172996	2020/08/31
96:4 (Methanol: H2O)	99.7ml	PRLRE 116-236				
		652, 2018/07/17				

NOTES: 100ml cylinder used class A #-6394

Reagent # 238 Replaced Reagent # 234 Analyst: EG

Reagent Name: 0.2% NH4OH Preparation date: 2018/07/18 Expiry date: Daily

Final Volume: 1L Oven No.: – Temp.: – Final Conc.: 0.2%

Balance ID: – Pipette/Syringe/Cylinder ID: 147987G Storage: Shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	998ml	2018/07/09	2018/07/18	Sigma	SHBK0038	2023/02/28
NH4OH	2ml	2017/08/15	2017/12/22	Fisher	166631	2020/01/31

NOTES:

REAGENT PREPARATION FORM

Reagent # 235 Replaced Reagent # 223 Analyst: HIN

Reagent Name: FMOC Preparation date: 2018/07/17 Expiry date: Daily

Final Volume: 50mL Oven No. : — Temp. : — Final Conc.: —

Balance ID: FC-1 Pipette/Syringe/Cylinder ID: 0603 Storage: ____

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
FMOC	0.0746g	2018/01/18	2018/04/11	Aldrich	WXBC3811V	2023/01/18
ACN	50mL	2018/05/11	2018/07/09	Fisher	180370	2023/02/28
	2018/07/17 HIN					

NOTES:

Reagent # 236 Replaced Reagent # 210 Analyst: GSZ

Reagent Name: 96:4 (Methanol: H_2O) Preparation date: 2018/07/17 Expiry date: 2018/09/17

Final Volume: 100ml Oven No. : — Temp. : — Final Conc.: 96:4

Balance ID: — Pipette/Syringe/Cylinder ID: I479876 Storage: Shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Methanol	96.0ml	2018/07/09	2018/07/16	Sigma	SHBK 0038	2023/02/28
LC/MS Water	4.0ml	2018/07/16	2018/07/16	Omni	58061	2019/03/31
		GSZ, 2018/07/17				

NOTES: Cylinder used Class A #6394

DO NOT WRITE BENEATH ANY INSERTS OR PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THIS PAGE. INITIAL AND DATE ALL ENTRIES, CORRECTIONS AND INSERTS. INCLUDE ALL RELEVANT TRACEABLE REFERENCES ON ALL INSERTS. ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.

Fisher Scientific

1 Reagent Lane
Fair Lawn, NJ 07410
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Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0060816

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Catalog Number	A669	Quality Test / Release Date	6/24/2017
Lot Number	172996	Expiration Date	Aug/2020
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Chemical Comment	This product is free from genetically modified substances and is gluten free.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.002
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.008
CARBON DIOXIDE	%	<= 0.002	<0.0020
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.006
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.003

CERTIFIED BY

Teresa Bailey-Wojcik

Quality Assurance Specialist - Certificate of Analysis SPF

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800)227-6701.
*Based on suggested storage condition.

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/05-lov-HPLC 1X500ml
Date Received: 2018/01/08-lov-HPLC 1X500ml
Date Received: 2018/01/09-lov-HPLC 1X500ml

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G2 4x4L
2018/06/14
2018/06/05
EG 4x4L

Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	34860
Batch Number:	SHBK0038
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	13 MAR 2018
Expiration Date:	FEB 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.10
UV Absorbance 210nm	≤ 0.60	0.23
UV Absorbance 205nm	≤ 1.00	0.57
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period 1800 Days	----------------------	----------------------

Version Number: 1

Date Received: 2018/07/09-4x4L-HPLC
Date Received: 2018/08/07-4x4L-HPLC

Certificate of Analysis

MilliporeSigma

Date of Release: 3/1/2018

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 58061

Country of Origin: USA

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAR-2019	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.30	mAU
Gradient at 254 nm		0.5	0.06	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	< 0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Dr. Oliver Schramof

Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Received - 2018/06/04 MKY
4 bottles
Expiry - 2019/03/31

1/1

Received 2018/05/02 4x4L HPLC
Received 2018/05/11 4x4L LC
Received 2018/06/05 4x4L HPLC
Date Received: 2018.06.14 - 4 x 4L - HPLC
Date Received: 2018.06.19 - 4 x 4L - HPLC
Date Received: 2018.06.23 - 4 x 4L - HPLC
Date Received: 2018.06.25 - 4 x 4L - HPLC
Date Received: 2018.07.06 - 4 x 4L - HPLC
Date Received: 2018.07.16 - 4 x 4L - HPLC
Date Received: 2018.08.07 - 4 x 4L - HPLC

REAGENT PREPARATION FORM

Reagent # 241 Replaced Reagent # 237 Analyst: GSZ

Reagent Name: 0.3% NH_4OH in 96:4 (MeOH:H_2O) Preparation date: 2018/07/19 Expiry date: Daily

Final Volume: 100mL Oven No.: - Temp.: - Final Conc.: 0.3 : 99.7 v/v

Balance ID: - Pipette/Syringe/Cylinder ID: J434346 Storage: Shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	0.3mL	2018/01/09	2018/01/25	Fisher	172996	2020/08/31
96:4 (MeOH : H_2O)	99.7mL		PRLRE 116 - 240			
		GSZ 2018/07/19				

NOTES: 100mL Class A Vol. Cylinder (6394)

Reagent # 242 Replaced Reagent # 235 Analyst: EGI

Reagent Name: FMOC Preparation date: 2018/07/20 Expiry date: Daily

Final Volume: 50 ml Oven No.: -- Temp.: -- Final Conc.:

Balance ID: FC-1 Pipette/Syringe/Cylinder ID: 0603 Storage: shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
FMOC	0.0749g	2018/01/18	2018/04/14	Aldrich	WXBC3811V	2023/01
ACN	50 ml	2018/05/10	2018/07/04	Fisher	160370	2023/02
		EGI 2018/07/20				

NOTES:

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Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - [illegible]

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	8/24/2017
Lot Number	172996	Expiration Date	Aug/2020
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Chemical Comment	This product is free from genetically modified substances and is gluten free.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.002
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.003
CARBON DIOXIDE	%	<= 0.002	<0.0020
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.005
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.003

CERTIFIED BY

Teresa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis BPF

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) [illegible].
*Based on suggested storage condition.

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/05-lov-HPLC 1X500ml
Date Received: 2018/01/08-lov-HPLC 1X500ml
Date Received: 2018/01/09-lov-HPLC 1X500ml

Certificate of Analysis from other Companies

Product Description:	**Methanol - for HPLC>-99.9%**
Catalog #	**34860**
LOT #	**SHBJ8485**
Expiration Date:	**12/31/2022**
Supplier Name:	**Sigma- Aldrich**
Storage Location:	Room Temperature

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Rec'd: 20180212S
By: [illegible]
4x4L
HPLC - M.C -

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	34860
Batch Number:	SHBJ8485
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	23 JAN 2018
Expiration Date:	DEC 2022

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.04
UV Absorbance 230nm	≤ 0.20	0.06
UV Absorbance 220nm	≤ 0.30	0.14
UV Absorbance 210nm	≤ 0.60	0.31
UV Absorbance 205nm	≤ 1.00	0.62
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.05 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period 1800 Days	----------	----------

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

Page 1 of 2

SIGMA-ALDRICH

sigma-aldrich.com
3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34060
Batch Number: SHBJ8485

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Version Number: 1

Date Received: 2018.02.16 - 4 x 4L - HPLC
Date Received: 2018.02.27 - 4 x 4L - HPLC
Date Received: 2018.03.03 - 4 x 4L - HPLC
Date Received: 2018.03.05 - 4 x 4L - HPLC
Date Received: 2018.03.13 - 4 x 4L - HPLC
Date Received: 2018.03.15 - 4 x 4L - HPLC
Date Received: 2018.03.19 - 4 x 4L - HPLC
Date Received: 2018.03.22 - 4 x 4L - HPLC
Date Received: 2018.03.26 - 4 x 4L - HPLC
Date Received: 2018.04.20 - 4 x 4L - HPLC
Date Received: 2018.04.26 - 4 x 4L - HPLC
Date Received: 2018.05.02 - 4 x 4L - HPLC
Date Received: 2018.06.25 - 4 x 4L - HPLC
Date Received: 2018.07.04 - 4 x 4L - HPLC
Date Received: 2018.07.09 - 4 x 4L - HPLC
Date Received: 2018.08.07 - 4 x 4L - HPLC

Certificate of Analysis

MilliporeSigma

Date of Release: 3/1/2018

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 58061

Country of Origin: USA

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAR-2019	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.30	mAU
Gradient at 254 nm		0.5	0.06	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	< 0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400–280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Dr. Oliver Schramel

Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Received - 2018/06/04 MK4
4 bottles
Expiry - 2019/03/31

1/1

Received 2018/05/02 4x4L HPLC
Received 2018/05/11 4x4L LC
Received 2018/06/05 4x4L HPLC
Date Received: 2018.06.14 - 4 x 4L - HPLC
Date Received: 2018.06.19 - 4 x 4L - HPLC
Date Received: 2018.06.23 - 4 x 4L - HPLC
Date Received: 2018.06.25 - 4 x 4L - HPLC
Date Received: 2018.07.06 - 4 x 4L - HPLC
Date Received: 2018.07.16 - 4 x 4L - HPLC
Date Received: 2018.08.07 - 4 x 4L - HPLC

REAGENT PREPARATION FORM

Reagent # 399 Replaced Reagent # 375 Analyst: 6SZ

Reagent Name: 0.3% NH_4OH in MeOH Preparation date: 2018/09/14 Expiry date: Daily

Final Volume: 250 ml Oven No. : — Temp. : — Final Conc.: 0.3:99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: J434346 Storage: —

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	0.75 ml	2018/01/09	2018/01/25	Fisher	172996	2020/08/31
MeOH	249.25 ml	2018/09/14	2018/09/14	Sigma	SHBK1713	2023/03/31
			6SZ 2018/09/14			

NOTES: 250ml Class A Vol. cylinder (3062)

Reagent # 400 Replaced Reagent # 398 Analyst: KPG

Reagent Name: 0.2 % NH_4OH Preparation date: 2018/09/15 Expiry date: Daily

Final Volume: 500 ml Oven No. : — Temp. : — Final Conc.: 0.2:99.8 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: J434346 / 5553 Storage: —

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	1 ml	2018/01/09	2018/01/25	Fisher	172996	2020/08/31
MeOH	499 ml	2018/09/14	2018/09/15	Sigma	SHBK1713	2023/03/31
		KPG	2018/09/15			

NOTES:

Fisher Scientific

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0026018

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Catalog Number	A669	Quality Test / Release Date	8/24/2017
Lot Number	172996	Expiration Date	Aug/2020
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Chemical Comment	This product is free from genetically modified substances and is gluten free.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.002
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.005
CARBON DIOXIDE	%	<= 0.002	<0.0020
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.006
SUBSTANCES REDUCING KMnO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.003

CERTIFIED BY

Teresa Bailey-Wright

Quality Assurance Specialist - Certificate of Analysis BPP

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.
*Based on suggested storage condition.

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml
Date Received: 2018/01/25-lov-HPLC 1X500ml

Kelly Huckabone

Kelly Huckabone
Regulatory Affairs

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
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Certificate of Analysis

Rec'd: 2018/09/14
By: OXD
4x4L
HPLC-M.L.

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	34860
Batch Number:	SHBK1713
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	08 MAY 2018
Expiration Date:	APR 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.04
UV Absorbance 230nm	≤ 0.20	0.07
UV Absorbance 220nm	≤ 0.30	0.15
UV Absorbance 210nm	≤ 0.60	0.34
UV Absorbance 205nm	≤ 1.00	0.70
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	99.93 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	------------------------	------------------------

SIGMA-ALDRICH

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
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Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34860
Batch Number: SHBK1713

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Date Received: 2018.09.21 - 4 bottles - HPLC
Date Received: 2018.09.14 - 4 bottles - HPLC
Date Received: 2018.09.19 - 4 bottles - HPLC
Date Received: 2018.09.21 - 4 bottles - HPLC

REAGENT PREPARATION FORM

Reagent # 07 Replaced Reagent # PRRE116-459 Analyst: EG

Reagent Name: 96 : 4 MeOH:LCMS Preparation date: 2018/10/30 Expiry date: 2018/12/30

Final Volume: 100 ml Oven No. : — Temp. : — Final Conc.: 96 : 4 V/V

Balance ID: — Pipette/Syringe/Cylinder ID: L542806 Storage: shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	96 ml	2018/10/15	2018/10/30	Sigma	SHBK1963	2021 29/10
LCMS	4 ml	2018/10/25	2018/10/29	Omni	58201	2019/07/31
			EG 2018/10/30			

NOTES:

Reagent # 08 Replaced Reagent # PRRE116-460 Analyst: EG

Reagent Name: 0.3% NH4OH in 96:4 MeOH:LCMS Preparation date: 2018/10/30 Expiry date: Daily

Final Volume: 100 ml Oven No. : — Temp. : — Final Conc.: 0.3%

Balance ID: — Pipette/Syringe/Cylinder ID: P424096 Storage: shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
96:4 MeOH:LCMS	99.7 ml PRLRE 124-07					
NH_4OH	300 µl	2018/12/11	2018/09/25	Fisher	166350	2023/04/10
				EG 2018/10/30		

NOTES:

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Outside USA: eurtechserv@sial.com

Certificate of Analysis

Rec'd: 20181016
By: OXD
HPLC-M.L
4x4L

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	**34860**
Batch Number:	**SHBK1963**
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	16 MAY 2018
Expiration Date:	APR 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.05
UV Absorbance 230nm	≤ 0.20	0.07
UV Absorbance 220nm	≤ 0.30	0.15
UV Absorbance 210nm	≤ 0.60	0.34
UV Absorbance 205nm	≤ 1.00	0.66
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	------------------------	------------------------

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

SIGMA-ALDRICH

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34860
Batch Number: SHBK1963

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Version Number: 1

Page 2 of 2

Date Received: 2018.10.15 - 12 bottles - HPLC
Date Received: 2018.10.16 - 12 bottles - HPLC
Date Received: 2018.10.25 - 4 bottles - HPLC
Date Received: 2018.10.30 - 4 bottles - HPLC
Date Received: 2018.10.31 - 4 bottles - HPLC
Date Received: 2018.11.06 - 4 bottles - HPLC
Date Received: 2018.11.09 - 4 bottles - HPLC
Date Received: 2018.11.13 - 4 bottles - HPLC
Date Received: 2018.11.15 - 4 bottles - HPLC

Certificate of Analysis

MilliporeSigma

Date of Release: 7/26/2018

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 58201

Country of Origin: USA

Received: 9 (JDA)
2018/08/16
LC 9 mg

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-JUL-2019	
Evaporation residue		1	0.6	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.10	mAU
Gradient at 254 nm		0.5	0.11	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	< 0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	0.001	AU
UV Cut-off		190	187.0	nm

Dr. Oliver Schramel

Quality Control Manager
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EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

1/1

Date Received: 2018.08.13 - 4 bottles - P12
Date Received: 2018.08.20 - 8 bottles - HPLC
Date Received: 2018.08.15 - 8 bottles - HPLC
Date Received: 2018.08.16 - 8 bottles - HPLC
Date Received: 2018.08.29 - 8 bottles - HPLC
Date Received: 2018.09.05 - 8 bottles - HPLC
Date Received: 2018.09.10 - 8 bottles - HPLC
Date Received: 2018.09.15 - 8 bottles - HPLC
Date Received: 2018.09.17 - 8 bottles - HPLC
Date Received: 2018.09.25 - 4 bottles - HPLC
Date Received: 2018.10.03 - 8 bottles - HPLC
Date Received: 2018.10.11 - 8 bottles - HPLC
Date Received: 2018.10.15 - 8 bottles - HPLC
Date Received: 2018.10.16 - 8 bottles - HPLC
Date Received: 2018.10.18 - 7 bottles - HPLC
Date Received: 2018.10.24 - 7 bottles - HPLC
Date Received: 2018.10.25 - 7 bottles - HPLC
Date Received: 2018.10.31 - 7 bottles - HPLC
Date Received: 2018.11.09 - 7 bottles - HPLC
Date Received: 2018.11.15 - 7 bottles - HPLC

REAGENT PREPARATION FORM

eagent # 07 Replaced Reagent # PRRE116-459 Analyst: EG1

eagent Name: 96 : 4 MeOH:LCMS Preparation date: 2018/10/30 Expiry date: 2018/12/30

inal Volume: 100 ml Oven No. : — Temp. : — Final Conc.: 96 : 4 v/v

alance ID: — Pipette/Syringe/Cylinder ID: L542806 Storage: shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	96 ml	2018/10/15	2018/10/30	Sigma	SHBK1463	2021/29/10
LCMS	4 ml	2018/10/25	2018/10/29	Omni	58201	2019/07/31
			EG1 2018/10/30			

NOTES:

Reagent # 08 Replaced Reagent # PRRE116-460 Analyst: EG1

Reagent Name: 0.3% NH4OH in 96:4 MeOH:LCMS Preparation date: 2018/10/30 Expiry date: Daily

Final Volume: 100 ml Oven No. : — Temp. : — Final Conc.: 0.3%

Balance ID: — Pipette/Syringe/Cylinder ID: P424096 Storage: shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
96:4 MeOH:LCMS	99.7ml PRLRE	124 -	07			
NH_4OH	300 µl	2018/12/11	2018/09/25	Fisher	166350	2023/04/10
				EG1 2018/10/30		

NOTES:

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3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Rec'd: 20181016
By: OXD
HPLC-M.C
4x4L

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	**34860**
Batch Number:	**SHBK1963**
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	16 MAY 2018
Expiration Date:	APR 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.05
UV Absorbance 230nm	≤ 0.20	0.07
UV Absorbance 220nm	≤ 0.30	0.15
UV Absorbance 210nm	≤ 0.60	0.34
UV Absorbance 205nm	≤ 1.00	0.66
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	------------------------	------------------------

Version Number: 1

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
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Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34960
Batch Number: SHBK1963

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Version Number: 1

Page 2 of 2

Date Received: 2018.10.15 - 12 bottles - HPLC
Date Received: 2018.10.16 - 12 bottles - HPLC
Date Received: 2018.10.25 - 4 bottles - HPLC
Date Received: 2018.10.30 - 4 bottles - HPLC
Date Received: 2018.10.31 - 4 bottles - HPLC
Date Received: 2018.11.06 - 4 bottles - HPLC
Date Received: 2018.11.09 - 4 bottles - HPLC
Date Received: 2018.11.13 - 4 bottles - HPLC
Date Received: 2018.11.15 - 4 bottles - HPLC

Certificate of Analysis

MilliporeSigma

Date of Release: 7/26/2018

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-001

Lot / Batch No: 58201

Country of Origin: USA

Received: 7 (JDA)
2018/08/16
LC 9 Trg

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-JUL-2019	
Evaporation residue		1	0.6	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.10	mAU
Gradient at 254 nm		0.5	0.11	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	< 0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	0.001	AU
UV Cut-off		190	187.0	nm

Dr. Oliver Schrame

Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

1/1

Date Received: 2018.08.13 - 4 bottles - P12
Date Received: 2018.08.20 - 8 bottles - HPLC
Date Received: 2018.08.15 - 8 bottles - HPLC
Date Received: 2018.08.16 - 8 bottles - HPLC
Date Received: 2018.08.29 - 8 bottles - HPLC
Date Received: 2018.09.05 - 8 bottles - HPLC
Date Received: 2018.09.10 - 8 bottles - HPLC
Date Received: 2018.09.15 - 8 bottles - HPLC
Date Received: 2018.09.17 - 8 bottles - HPLC
Date Received: 2018.09.25 - 4 bottles - HPLC
Date Received: 2018.10.03 - 8 bottles - HPLC
Date Received: 2018.10.11 - 8 bottles - HPLC
Date Received: 2018.10.15 - 8 bottles - HPLC
Date Received: 2018.10.16 - 8 bottles - HPLC
Date Received: 2018.10.18 - 7 bottles - HPLC
Date Received: 2018.10.24 - 7 bottles - HPLC
Date Received: 2018.10.25 - 7 bottles - HPLC
Date Received: 2018.10.31 - 7 bottles - HPLC
Date Received: 2018.11.09 - 7 bottles - HPLC
Date Received: 2018.11.15 - 7 bottles - HPLC

[redacted]

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - [illegible]

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	1/10/2017
Lot Number	166350	Expiration Date	Dec/19
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Chemical Comment	This product is free from genetically modified substances and is gluten free.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.010
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.004
CALCIUM (Ca)	ppm	<= 0.3	0.003
CARBON DIOXIDE	%	<= 0.002	<0.0002
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.017
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.001

CERTIFIED BY

[redacted]

Quality Assurance Specialist - Certificate of Analysis BPF

Date Received: 2018.02.01 - 1 bottle - HPLC
Date Received: 2018.09.25 - 1 bottle - HPLC

REAGENT PREPARATION FORM

Reagent # 109 Replaced Reagent # 102 Analyst: GSZ

Reagent Name: 0.3% NH_4OH in MeOH Preparation date: 2018/11/30 Expiry date: Daily

Final Volume: 250ml Oven No.: — Temp.: — Final Conc.: 0.3 : 99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: P424056 Storage: —

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	0.75ml	2018/02/01	2018/05/25	Fisher	166350	2019/12/31
MeOH	249.25ml	2018/11/12	2018/11/30	Sigma	SHBK5051	2023/07/31
		GSZ	2018/11/30			

NOTES: 250ml class A Vol. cylinder (3062)

Reagent # 110 Replaced Reagent # 108 Analyst: SGY

Reagent Name: 0.2% NH_4OH Preparation date: 2018/12/01 Expiry date: Daily

Final Volume: 500ml Oven No.: — Temp.: — Final Conc.: 0.2% V/V

Balance ID: — Pipette/Syringe/Cylinder ~~ID~~: 5553 Storage:

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	499ml	2018/11/19	2018/12/01	Sigma	SHBK 5051	2023/7/31
NH_4OH	1 ml	2018/02/01	2018/9/25	Fisher	166380	2019/12/31
		SGY 2018/12/01				

NOTES:

[redacted]

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0090918

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Catalog Number	A669	Quality Test / Release Date	1/10/2017
Lot Number	166350	Expiration Date	Dec/19
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Chemical Comment	This product is free from genetically modified substances and is gluten free.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.010
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.004
CALCIUM (Ca)	ppm	<= 0.3	0.003
CARBON DIOXIDE	%	<= 0.002	<0.0002
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.017
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.001

CERTIFIED BY

[redacted]

Quality Assurance Specialist - Certificate of Analysis BPF

Date Received: 2018.02.01 - 1 bottle - HPLC
Date Received: 2018.02.09 - 1 bottle - HPLC

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
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Outside USA: eurtechserv@sial.com

Certificate of Analysis

Rec'd: 2018/11/12
By: OKD
4x4L
HPLC-M.C

CH_3OH

Product Name:	Methanol - for HPLC, ≥99.9%
Product Number:	34860
Batch Number:	SHBK5051
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	20 AUG 2018
Expiration Date:	JUL 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.01
UV Absorbance 235nm	≤ 0.10	0.02
UV Absorbance 230nm	≤ 0.20	0.02
UV Absorbance 220nm	≤ 0.30	0.05
UV Absorbance 210nm	≤ 0.60	0.21
UV Absorbance 205nm	≤ 1.00	0.52
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 10 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	----------------	----------------

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34860
Batch Number: SHBK5051

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Version Number: 1

Page 2 of 2

Date Received: 2018.11.12 - 2 x 4L - HPLC
Date Received: 2018.11.15 - 2 x 4L - HPLC
Date Received: 2018.11.19 - 2 x 4L - HPLC
Date Received: 2018.12.06 - 2 x 4L - HPLC

REAGENT PREPARATION FORM

Reagent # 15 Replaced Reagent # 06 Analyst: GSZ

Reagent Name: 0.3% NH_4OH in MeOH Preparation date: 2018/10/31 Expiry date: Daily

Final Volume: 500ml Oven No.: – Temp.: – Final Conc.: 0.3 : 99.7 v/v

Balance ID: – Pipette/Syringe/Cylinder ID: K26250F Storage: –

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	1.5ml	2018/02/01	2018/09/25	Fisher	166350	2019/12/31
MeOH	498.5ml	2018/10/30	2018/10/31	Sigma	SHBK1963	2023/04/30
		GSZ	2018/10/31			

NOTES: 500ml Class A Vol. Cylinder (3026)

Reagent # 16 Replaced Reagent # 11 Analyst: MIN

Reagent Name: 0.2% NH_4OH Preparation date: 2018/10/31 Expiry date: Daily

Final Volume: 1L Oven No.: x Temp.: x Final Conc.: 0.2% v/v

Balance ID: x Pipette/Syringe/Cylinder ID: L54280G Storage: x

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH_4OH	2 ml	2018/02/01	2018/09/25	Fisher	166350	2019/12/31
MeOH	998 ml	2018/10/15	2018/10/31	Sigma	SHBK1963	2023/04/30
		MIN				
	2018/10/31					

NOTES:

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - [illegible]

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Catalog Number	A669	Quality Test / Release Date	1/10/2017
Lot Number	165550	Expiration Date	Dec/19
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		

BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.
Chemical Comment	This product is free from genetically modified substances and is gluten free.

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	COLORLESS AND FREE FROM SUSPENDED MATTER
ALUMINUM	ppm	<= 0.3	0.010
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.050
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.2
BORON (B)	ppm	<= 0.1	0.004
CALCIUM (Ca)	ppm	<= 0.3	0.003
CARBON DIOXIDE	%	<= 0.002	<0.0002
CHLORIDE	ppm	<= 0.5	<0.50
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.001
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2.0
PHOSPHATE (PO4)	ppm	<= 0.4	<0.40
POTASSIUM (K)	ppm	<= 0.3	0.002
RESIDUE AFTER IGNITION	ppm	<= 3	<3.00
SODIUM (Na)	ppm	= Report	0.017
SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2.0
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.001

CERTIFIED BY

Quality Assurance Specialist - Certificate of Analysis BPF

Date Received: 2018.02.01 - 1 bottle - HPLC
Date Received: 2018.09.25 - 1 bottle - HPLC

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Rec'd: 2018|10|16
By: [illegible]
HPLC-M.C
4x4L

Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

CH_3OH

Product Number:	34860
Batch Number:	SHBK1963
Brand:	SIGALD
CAS Number:	67-56-1
MDL Number:	MFCD00004595
Formula:	CH4O
Formula Weight:	32.04 g/mol
Quality Release Date:	18 MAY 2018
Expiration Date:	APR 2023

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.03
UV Absorbance 235nm	≤ 0.10	0.05
UV Absorbance 230nm	≤ 0.20	0.07
UV Absorbance 220nm	≤ 0.30	0.15
UV Absorbance 210nm	≤ 0.60	0.34
UV Absorbance 205nm	≤ 1.00	0.66
Fluorescence 254nm	≤ 1.0 ppb	0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	0.1 ppb
Purity (GC)	≥ 99.90 %	99.99 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	0.0001 %
Expiration Date Period 1800 Days	----------	----------

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Version Number: 1

SIGMA-ALDRICH

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: 34860
Batch Number: SHBK1963

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

Date Received: 2018.10.15 - 12 bottles - HPLC
Date Received: 2018.10.16 - 12 bottles - HPLC
Date Received: 2018.10.25 - 4 bottles - HPLC
Date Received: 2018.10.30 - 4 bottles - HPLC
Date Received: 2018.10.31 - 4 bottles - HPLC