



**Drinking Water/Groundwater Sample Results,  
Level 2 Laboratory Report, Level 4 Laboratory Report,  
Electronic Data Deliverable, Data Validation Report,  
Sample Location Report, SDG 1803982**

*NAS*

*Chase Field TX*

December 2020

July 16, 2019

**Vista Work Order No. 1803982**

Ms. Nia Nikmanesh  
KMEA  
2423 Hoover Avenue  
National City, CA 91950

Dear Ms. Nikmanesh,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on December 08, 2018 under your Project Name 'Chase Field'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

## **Vista Work Order No. 1803982**

### **Case Narrative**

#### **Sample Condition on Receipt:**

Eight drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. Samples "Big Field-FB-120618", "Behind the Base-FB-120618" and "Shooting Range1-FB-120618" were "extract and hold" per client request. As requested, this report was amended to include the results for sample "Behind the Base-FB-120618".

#### **Analytical Notes:**

##### **EPA Method 537, Rev. 1.1**

The samples were extracted and analyzed for a selected list of 14 PFAS using EPA Method 537, Rev. 1.1.

##### **Holding Times**

The samples were extracted and analyzed within the method hold times.

##### **Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Laboratory Fortified Blank (LFB) and a Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 of the LOQ. The LFB recoveries were within the method acceptance criteria.

As requested, an LFSM/LFSMD was performed on sample "Shooting Range1-DW-120618". The LFSM recovery of PFHpA, PFHxS, PFOA and PFNA were >150%. The LFSMD recovery of PFHxS, PFOA and PFOS were >150%. All other analyte recoveries for the LFSM/LFSMD were within the method acceptance criteria. The RPD was >30 for the following compounds: PFHpA, PFHxS, PFOA, PFNA and PFOS. All other RPDs were within the acceptance criteria.

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1803982-01	Big Field-DW-120618	06-Dec-18 09:22	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-02	Big Field-FB-120618	06-Dec-18 09:22	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-03	Behind the Base-DW-120618	06-Dec-18 10:03	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-04	Behind the Base-FB-120618	06-Dec-18 10:03	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-05	Shooting Range1-DW-120618	MS/MSD06-Dec-18 17:04	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-06	Shooting Range1-FB-120618	06-Dec-18 17:04	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-07	Source Blank	06-Dec-18 18:15	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-08	DUP-1	06-Dec-18 00:00	08-Dec-18 10:32	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

**Sample ID: LRB** **EPA Method 537**

<b>Client Data</b>				<b>Laboratory Data</b>							
Name:	KMEA	Matrix:	Aqueous	Lab Sample:	B8L0076-BLK1	Column:	BEH C18				
Project:	Chase Field										

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHxA	307-24-4	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOA	335-67-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFNA	375-95-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFDA	335-76-2	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOA	2058-94-8	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFTeDA	72629-94-8	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFTeDA	376-06-7	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.4	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	
13C2-PFDA	SURR	94.6	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	
d5-EtFOSAA	SURR	102	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: LFB**

**EPA Method 537**

Client Data					Laboratory Data							
Name:	KMEA	Matrix:	Aqueous		Lab Sample:	B8L0076-BS1	Column:	BEH C18				
Project:	Chase Field											

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	17.9	17.7	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHxA	307-24-4	21.5	20.0	108	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHpA	375-85-9	20.4	20.0	102	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHxS	355-46-4	16.9	18.2	92.9	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOA	335-67-1	21.2	20.0	106	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFNA	375-95-1	20.3	20.0	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOS	1763-23-1	21.6	18.5	117	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFDA	335-76-2	20.2	20.0	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
MeFOSAA	2355-31-9	19.8	20.0	98.8	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
EtFOSAA	2991-50-6	21.2	20.0	106	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOxA	2058-94-8	18.0	20.0	90.1	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFDoA	307-55-1	19.5	20.0	97.6	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFTTrDA	72629-94-8	19.2	20.0	95.9	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFTeDA	376-06-7	19.1	20.0	95.5	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA		SURR		100	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
13C2-PFDA		SURR		100	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
d5-EtFOSAA		SURR		76.4	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1

**Sample ID: Big Field-DW-120618**

**EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-01	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 09:22	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHxA	307-24-4	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHpA	375-85-9	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHxS	355-46-4	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFOA	335-67-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFNA	375-95-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFOS	1763-23-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFDA	335-76-2	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
MeFOSAA	2355-31-9	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
EtFOSAA	2991-50-6	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFUnA	2058-94-8	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFDoA	307-55-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFTrDA	72629-94-8	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFTeDA	376-06-7	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	
13C2-PFDA	SURR	96.3	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	
d5-EtFOSAA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Big Field-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-02	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 09:22	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHxA	307-24-4	16.9	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHpA	375-85-9	7.47	3.18	5.23	10.4	J	B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHxS	355-46-4	38.4	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOA	335-67-1	42.3	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFNA	375-95-1	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOS	1763-23-1	41.9	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFDA	335-76-2	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
MeFOSAA	2355-31-9	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
EtFOSAA	2991-50-6	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOA	2058-94-8	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFDoA	307-55-1	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFTeDA	72629-94-8	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFTeDA	376-06-7	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	
13C2-PFDA	SURR	96.9	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	
d5-EtFOSAA	SURR	97.2	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Behind the Base-DW-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-03	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 10:03	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHxA	307-24-4	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHpA	375-85-9	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHxS	355-46-4	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFOA	335-67-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFNA	375-95-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFOS	1763-23-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFDA	335-76-2	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
MeFOSAA	2355-31-9	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
EtFOSAA	2991-50-6	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFOA	2058-94-8	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFDoA	307-55-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFTeDA	72629-94-8	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFTeDA	376-06-7	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	
13C2-PFDA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	
d5-EtFOSAA	SURR	91.3	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Behind the Base-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-04	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 10:03	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHxA	307-24-4	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHpA	375-85-9	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHxS	355-46-4	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFOA	335-67-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFNA	375-95-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFOS	1763-23-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFDA	335-76-2	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
MeFOSAA	2355-31-9	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
EtFOSAA	2991-50-6	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFOA	2058-94-8	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFDoA	307-55-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFTeDA	72629-94-8	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFTeDA	376-06-7	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	
13C2-PFDA	SURR	99.0	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	
d5-EtFOSAA	SURR	81.9	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.



**Sample ID: Shooting Range1-DW-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-05	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 17:04	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	34.2	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHxA	307-24-4	213	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHpA	375-85-9	87.2	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHxS	355-46-4	362	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOA	335-67-1	246	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFNA	375-95-1	21.7	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOS	1763-23-1	375	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFDA	335-76-2	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
MeFOSAA	2355-31-9	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
EtFOSAA	2991-50-6	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOA	2058-94-8	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFDoA	307-55-1	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFTeDA	72629-94-8	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFTeDA	376-06-7	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	112	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	
13C2-PFDA	SURR	106	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	
d5-EtFOSAA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Shooting Range1-DW-120618**

**EPA Method 537**

Name:	KMEA	Lab Sample:	B8L0076-MS1/B8L0076-MSD1	Source Lab Sample:	1803982-05
Project:	Chase Field	QC Batch:	B8L0076	Date Extracted:	12-Dec-18
Matrix:	Aqueous	Samp Size:	0.251/0.248 L	Column:	BEH C18

Analyte	CAS Number	Sample (ng/L)	LFSM (ng/L)	LFSM Spike Amt	LFSM % Rec	LFSM Quals	LFSMD (ng/L)	LFSMD Spike Amt	LFSMD % Rec	RPD	LFSMD Quals	%Rec Limits	RPD Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
PFBS	375-73-5	34.2	53.2	17.6	108		55.3	17.9	118	8.85		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHxA	307-24-4	213	242	20.0	145		235	20.2	110	27.5		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHpA	375-85-9	87.2	135	20.0	240	H	116	20.2	143	50.7	H	50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHxS	355-46-4	362	490	18.2	703	D, H	397	18.4	187	116	D, H	50-150	30	17-Dec-18 19:41	10	17-Dec-18 19:52	10
PFOA	335-67-1	246	515	20.0	1350	D, H	331	20.2	420	105	H	50-150	30	17-Dec-18 19:41	10	15-Dec-18 01:43	1
PFNA	375-95-1	21.7	59.6	20.0	190	H	48.6	20.2	133	35.3	H	50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFOS	1763-23-1	375	397	18.4	123	D	445	18.7	378	102	D, H	50-150	30	17-Dec-18 19:41	10	17-Dec-18 19:52	10
PFDA	335-76-2	ND	21.4	20.0	107		20.7	20.2	102	4.78		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
MeFOSAA	2355-31-9	ND	17.5	20.0	87.6		19.9	20.2	98.3	11.5		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
EtFOSAA	2991-50-6	ND	20.8	20.0	104		22.1	20.2	109	4.69		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFUnA	2058-94-8	ND	15.0	20.0	75.2		19.9	20.2	98.5	26.8		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFDoA	307-55-1	ND	19.3	20.0	96.7		21.6	20.2	107	10.1		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFTTrDA	72629-94-8	ND	19.2	20.0	96.0		18.8	20.2	93.0	3.17		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFTeDA	376-06-7	ND	18.1	20.0	90.6		19.6	20.2	97.3	7.13		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1

Labeled Standards	Type	LFSM % Rec	LFSM Quals	LFSMD % Rec	LFSMD Quals	Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
13C2-PFHxA	SURR	104		105		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1
13C2-PFDA	SURR	102		103		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1
d5-EtFOSAA	SURR	89.9		82.9		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1

**Sample ID: Shooting Range1-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-06	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 17:04	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHxA	307-24-4	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHpA	375-85-9	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHxS	355-46-4	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOA	335-67-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFNA	375-95-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOS	1763-23-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFDA	335-76-2	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
MeFOSAA	2355-31-9	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
EtFOSAA	2991-50-6	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOA	2058-94-8	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFDoA	307-55-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFTeDA	72629-94-8	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFTeDA	376-06-7	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	
13C2-PFDA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	
d5-EtFOSAA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Source Blank** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-07	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 18:15	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHxA	307-24-4	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHpA	375-85-9	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHxS	355-46-4	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFOA	335-67-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFNA	375-95-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFOS	1763-23-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFDA	335-76-2	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
MeFOSAA	2355-31-9	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
EtFOSAA	2991-50-6	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFOA	2058-94-8	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFDoA	307-55-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFTeDA	72629-94-8	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFTeDA	376-06-7	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	
13C2-PFDA	SURR	100	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	
d5-EtFOSAA	SURR	92.5	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: DUP-1** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-08	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 00:00	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	32.0	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHxA	307-24-4	194	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHpA	375-85-9	76.0	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHxS	355-46-4	299	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOA	335-67-1	185	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFNA	375-95-1	15.7	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOS	1763-23-1	268	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFDA	335-76-2	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
MeFOSAA	2355-31-9	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
EtFOSAA	2991-50-6	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOA	2058-94-8	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFDoA	307-55-1	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFTeDA	72629-94-8	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFTeDA	376-06-7	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.9	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	
13C2-PFDA	SURR	94.4	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	
d5-EtFOSAA	SURR	90.1	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

### Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-21
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.*

## NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009



MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 1803982 Temp: 0.8 °C  
 Storage ID: WR-2 Storage Secured: Yes  No

Project ID: ChaseField PO#: P0934 Sampler: Dan Haug  
 (name)

TAT Standard:  21 days  
 (check one): Rush (surcharge may apply)  
 14 days  7 days Specify: \_\_\_\_\_

Invoice to: Name Kevin Olness/Kelli Miller Company Wood Address 9210 Sky Park Court, Suite 200 City San Diego State CA Ph# 858-633-2804 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) Brian Gieselman/Brian Gieselman Date 12/07/18 Time 13:30 Received by (printed name and signature) B. Benedict Bell/Bruce Date 12/8/18 Time 1032

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: \_\_\_\_\_  
 Tracking No.: \_\_\_\_\_

Add Analysis(es) Requested  
 Container(s)  
 Mod EPA Method 537  
 EPA Method 537(DW only)

Sample ID	Date	Time	Location/Sample Description	Add Analysis(es) Requested										Comments					
				Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 26	Other: Please List Below	PFOA/PFOS	UCMR3 PFAS List 6		PFAS List 14				
BigField-DW-120618	12/06/18	0922	Preservative: TZ	2	P	DW											X		
BigField-FB-120618		0922		2															Extraction Only
Behind the Base-DW-120618		1003		2															Extraction Only
Behind the Base-FB-120618		1003		2															Extraction Only
Shooting Range 1-DW-120618		1704		2															Extraction Only
Shooting Range 1-FB-120618		1704		2															Extraction Only
Shooting Range 1-MS/MSD-120618		1704		4															MS/MSD
Source Blank		1815		2															
DUP-1	12/06/18	0000			P	DW													X Collect volume from MS/MSD samples

Special Instructions/Comments: \_\_\_\_\_

SEND DOCUMENTATION AND RESULTS TO:

Name: Kevin Olness/Kelli Miller (see above)  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_

Container Types: P= HDPE, PJ= HDPE Jar  
 Bottle Preservation Type: T = Thiosulfate, O = Other: \_\_\_\_\_  
 Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: \_\_\_\_\_

# Sample Log-In Checklist

 Page # 1 of 1

 Vista Work Order #: 1803982

 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 12/8/18 1032	<b>Initials:</b> WBB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> NA
<b>Logged In:</b>	<b>Date/Time:</b> 12/8/18 1335	<b>Initials:</b> WBB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> A3 E4
<b>Delivered By:</b>	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GSO	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
<b>Preservation:</b>	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
<b>Temp °C:</b> 0.9 (uncorrected)	<b>Probe used:</b> Y / <input checked="" type="checkbox"/> N		<b>Thermometer ID:</b> IR-4
<b>Temp °C:</b> 0.8 (corrected)			

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill			
Trk #	7739 16630475		
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	<input checked="" type="checkbox"/>		
<b>Preservation Documented:</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
	<input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="checkbox"/> Trizma	<input type="checkbox"/> None
	<input type="checkbox"/> Other		
<b>Shipping Container</b>	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
			<input checked="" type="checkbox"/> Return
			<input type="checkbox"/> Dispose

Comments:

July 16, 2019

**Vista Work Order No. 1803982**

Ms. Nia Nikmanesh  
KMEA  
2423 Hoover Avenue  
National City, CA 91950

Dear Ms. Nikmanesh,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on December 08, 2018 under your Project Name 'Chase Field'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

## **Vista Work Order No. 1803982**

### **Case Narrative**

#### **Sample Condition on Receipt:**

Eight drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. Samples "Big Field-FB-120618", "Behind the Base-FB-120618" and "Shooting Range1-FB-120618" were "extract and hold" per client request. As requested, this report was amended to include the results for sample "Behind the Base-FB-120618".

#### **Analytical Notes:**

##### **EPA Method 537, Rev. 1.1**

The samples were extracted and analyzed for a selected list of 14 PFAS using EPA Method 537, Rev. 1.1.

##### **Holding Times**

The samples were extracted and analyzed within the method hold times.

##### **Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Laboratory Fortified Blank (LFB) and a Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 of the LOQ. The LFB recoveries were within the method acceptance criteria.

As requested, an LFSM/LFSMD was performed on sample "Shooting Range1-DW-120618". The LFSM recovery of PFHpA, PFHxS, PFOA and PFNA were >150%. The LFSMD recovery of PFHxS, PFOA and PFOS were >150%. All other analyte recoveries for the LFSM/LFSMD were within the method acceptance criteria. The RPD was >30 for the following compounds: PFHpA, PFHxS, PFOA, PFNA and PFOS. All other RPDs were within the acceptance criteria.

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1803982-01	Big Field-DW-120618	06-Dec-18 09:22	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-02	Big Field-FB-120618	06-Dec-18 09:22	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-03	Behind the Base-DW-120618	06-Dec-18 10:03	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-04	Behind the Base-FB-120618	06-Dec-18 10:03	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-05	Shooting Range1-DW-120618	MS/MSD06-Dec-18 17:04	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-06	Shooting Range1-FB-120618	06-Dec-18 17:04	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-07	Source Blank	06-Dec-18 18:15	08-Dec-18 10:32	HDPE Bottle, 250 mL
1803982-08	DUP-1	06-Dec-18 00:00	08-Dec-18 10:32	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**



**Sample ID: LRB** **EPA Method 537**

<b>Client Data</b>				<b>Laboratory Data</b>							
Name:	KMEA	Matrix:	Aqueous	Lab Sample:	B8L0076-BLK1	Column:	BEH C18				
Project:	Chase Field										

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHxA	307-24-4	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOA	335-67-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFNA	375-95-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFDA	335-76-2	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFOA	2058-94-8	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFTeDA	72629-94-8	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
PFTeDA	376-06-7	ND	3.04	5.00	10.0		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.4	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	
13C2-PFDA	SURR	94.6	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	
d5-EtFOSAA	SURR	102	70 - 130			B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:54	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: LFB**

**EPA Method 537**

Client Data					Laboratory Data							
Name:	KMEA	Matrix:	Aqueous		Lab Sample:	B8L0076-BS1	Column:	BEH C18				
Project:	Chase Field											

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	17.9	17.7	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHxA	307-24-4	21.5	20.0	108	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHpA	375-85-9	20.4	20.0	102	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFHxS	355-46-4	16.9	18.2	92.9	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOA	335-67-1	21.2	20.0	106	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFNA	375-95-1	20.3	20.0	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOS	1763-23-1	21.6	18.5	117	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFDA	335-76-2	20.2	20.0	101	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
MeFOSAA	2355-31-9	19.8	20.0	98.8	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
EtFOSAA	2991-50-6	21.2	20.0	106	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFOxA	2058-94-8	18.0	20.0	90.1	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFDoA	307-55-1	19.5	20.0	97.6	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFTTrDA	72629-94-8	19.2	20.0	95.9	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
PFTeDA	376-06-7	19.1	20.0	95.5	50 - 150		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA		SURR		100	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
13C2-PFDA		SURR		100	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1
d5-EtFOSAA		SURR		76.4	70- 130		B8L0076	12-Dec-18	0.250 L	15-Dec-18 01:21	1

**Sample ID: Big Field-DW-120618**

**EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-01	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 09:22	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHxA	307-24-4	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHpA	375-85-9	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFHxS	355-46-4	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFOA	335-67-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFNA	375-95-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFOS	1763-23-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFDA	335-76-2	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
MeFOSAA	2355-31-9	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
EtFOSAA	2991-50-6	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFOA	2058-94-8	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFDoA	307-55-1	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFTeDA	72629-94-8	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
PFTeDA	376-06-7	ND	2.96	4.86	9.73		B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	
13C2-PFDA	SURR	96.3	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	
d5-EtFOSAA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.257 L	15-Dec-18 02:06	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Big Field-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-02	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 09:22	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHxA	307-24-4	16.9	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHpA	375-85-9	7.47	3.18	5.23	10.4	J	B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFHxS	355-46-4	38.4	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOA	335-67-1	42.3	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFNA	375-95-1	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOS	1763-23-1	41.9	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFDA	335-76-2	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
MeFOSAA	2355-31-9	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
EtFOSAA	2991-50-6	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFOA	2058-94-8	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFDoA	307-55-1	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFTeDA	72629-94-8	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
PFTeDA	376-06-7	ND	3.18	5.23	10.4		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	
13C2-PFDA	SURR	96.9	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	
d5-EtFOSAA	SURR	97.2	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:17	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Behind the Base-DW-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-03	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 10:03	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHxA	307-24-4	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHpA	375-85-9	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFHxS	355-46-4	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFOA	335-67-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFNA	375-95-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFOS	1763-23-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFDA	335-76-2	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
MeFOSAA	2355-31-9	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
EtFOSAA	2991-50-6	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PfUnA	2058-94-8	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFDoA	307-55-1	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFTrDA	72629-94-8	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
PFTeDA	376-06-7	ND	3.01	4.96	9.91		B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	
13C2-PFDA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	
d5-EtFOSAA	SURR	91.3	70 - 130			B8L0076	12-Dec-18	0.252 L	15-Dec-18 02:28	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Behind the Base-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-04	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 10:03	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHxA	307-24-4	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHpA	375-85-9	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFHxS	355-46-4	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFOA	335-67-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFNA	375-95-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFOS	1763-23-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFDA	335-76-2	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
MeFOSAA	2355-31-9	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
EtFOSAA	2991-50-6	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PfUnA	2058-94-8	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFDoA	307-55-1	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFTrDA	72629-94-8	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
PFTeDA	376-06-7	ND	3.01	4.94	9.89		B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	
13C2-PFDA	SURR	99.0	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	
d5-EtFOSAA	SURR	81.9	70 - 130			B8L0076	12-Dec-18	0.253 L	15-Dec-18 02:39	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Shooting Range1-DW-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-05	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 17:04	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	34.2	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHxA	307-24-4	213	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHpA	375-85-9	87.2	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFHxS	355-46-4	362	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOA	335-67-1	246	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFNA	375-95-1	21.7	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOS	1763-23-1	375	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFDA	335-76-2	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
MeFOSAA	2355-31-9	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
EtFOSAA	2991-50-6	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFOA	2058-94-8	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFDoA	307-55-1	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFTeDA	72629-94-8	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
PFTeDA	376-06-7	ND	3.18	5.23	10.5		B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	112	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	
13C2-PFDA	SURR	106	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	
d5-EtFOSAA	SURR	104	70 - 130			B8L0076	12-Dec-18	0.239 L	15-Dec-18 02:50	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Shooting Range1-DW-120618**

**EPA Method 537**

Name:	KMEA	Lab Sample:	B8L0076-MS1/B8L0076-MSD1	Source Lab Sample:	1803982-05
Project:	Chase Field	QC Batch:	B8L0076	Date Extracted:	12-Dec-18
Matrix:	Aqueous	Samp Size:	0.251/0.248 L	Column:	BEH C18

Analyte	CAS Number	Sample (ng/L)	LFSM (ng/L)	LFSM Spike Amt	LFSM % Rec	LFSM Quals	LFSMD (ng/L)	LFSMD Spike Amt	LFSMD % Rec	RPD	LFSMD Quals	%Rec Limits	RPD Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
PFBS	375-73-5	34.2	53.2	17.6	108		55.3	17.9	118	8.85		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHxA	307-24-4	213	242	20.0	145		235	20.2	110	27.5		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHpA	375-85-9	87.2	135	20.0	240	H	116	20.2	143	50.7	H	50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFHxS	355-46-4	362	490	18.2	703	D, H	397	18.4	187	116	D, H	50-150	30	17-Dec-18 19:41	10	17-Dec-18 19:52	10
PFOA	335-67-1	246	515	20.0	1350	D, H	331	20.2	420	105	H	50-150	30	17-Dec-18 19:41	10	15-Dec-18 01:43	1
PFNA	375-95-1	21.7	59.6	20.0	190	H	48.6	20.2	133	35.3	H	50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFOS	1763-23-1	375	397	18.4	123	D	445	18.7	378	102	D, H	50-150	30	17-Dec-18 19:41	10	17-Dec-18 19:52	10
PFDA	335-76-2	ND	21.4	20.0	107		20.7	20.2	102	4.78		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
MeFOSAA	2355-31-9	ND	17.5	20.0	87.6		19.9	20.2	98.3	11.5		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
EtFOSAA	2991-50-6	ND	20.8	20.0	104		22.1	20.2	109	4.69		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFUnA	2058-94-8	ND	15.0	20.0	75.2		19.9	20.2	98.5	26.8		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFDoA	307-55-1	ND	19.3	20.0	96.7		21.6	20.2	107	10.1		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFTTrDA	72629-94-8	ND	19.2	20.0	96.0		18.8	20.2	93.0	3.17		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1
PFTeDA	376-06-7	ND	18.1	20.0	90.6		19.6	20.2	97.3	7.13		50-150	30	15-Dec-18 01:32	1	15-Dec-18 01:43	1

Labeled Standards	Type	LFSM % Rec	LFSM Quals	LFSMD % Rec	LFSMD Quals	Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
13C2-PFHxA	SURR	104		105		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1
13C2-PFDA	SURR	102		103		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1
d5-EtFOSAA	SURR	89.9		82.9		70-130	15-Dec-18 01:32	1	15-Dec-18 01:43	1



**Sample ID: Shooting Range1-FB-120618** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-06	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 17:04	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHxA	307-24-4	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHpA	375-85-9	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFHxS	355-46-4	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOA	335-67-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFNA	375-95-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOS	1763-23-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFDA	335-76-2	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
MeFOSAA	2355-31-9	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
EtFOSAA	2991-50-6	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFOA	2058-94-8	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFDoA	307-55-1	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFTeDA	72629-94-8	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
PFTeDA	376-06-7	ND	3.07	5.04	10.1		B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	
13C2-PFDA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	
d5-EtFOSAA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.248 L	15-Dec-18 03:01	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: Source Blank** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-07	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 18:15	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHxA	307-24-4	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHpA	375-85-9	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFHxS	355-46-4	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFOA	335-67-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFNA	375-95-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFOS	1763-23-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFDA	335-76-2	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
MeFOSAA	2355-31-9	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
EtFOSAA	2991-50-6	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFUnA	2058-94-8	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFDoA	307-55-1	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFTriDA	72629-94-8	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
PFTeDA	376-06-7	ND	3.20	5.25	10.5		B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	
13C2-PFDA	SURR	100	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	
d5-EtFOSAA	SURR	92.5	70 - 130			B8L0076	12-Dec-18	0.238 L	15-Dec-18 03:13	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: DUP-1** **EPA Method 537**

Client Data				Laboratory Data			
Name:	KMEA	Matrix:	Drinking Water	Lab Sample:	1803982-08	Column:	BEH C18
Project:	Chase Field	Date Collected:	06-Dec-18 00:00	Date Received:	08-Dec-18 10:32		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	32.0	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHxA	307-24-4	194	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHpA	375-85-9	76.0	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFHxS	355-46-4	299	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOA	335-67-1	185	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFNA	375-95-1	15.7	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOS	1763-23-1	268	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFDA	335-76-2	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
MeFOSAA	2355-31-9	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
EtFOSAA	2991-50-6	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFOA	2058-94-8	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFDoA	307-55-1	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFTeDA	72629-94-8	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
PFTeDA	376-06-7	ND	3.23	5.32	10.6		B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.9	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	
13C2-PFDA	SURR	94.4	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	
d5-EtFOSAA	SURR	90.1	70 - 130			B8L0076	12-Dec-18	0.235 L	16-Dec-18 17:23	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

### Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-21
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.*

## NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 1803982 Temp: 0.8 °C  
 Storage ID: WR-2 Storage Secured: Yes  No

Project ID: ChaseField PO#: P0934 Sampler: Dan Haug  
 (name)

TAT Standard:  21 days  
 (check one): Rush (surcharge may apply)  
 14 days  7 days Specify: \_\_\_\_\_

Invoice to: Name Kevin Olness/Kelli Miller Company Wood Address 9210 Sky Park Court, Suite 200 City San Diego State CA Ph# 858-633-2804 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) Brian Gieselman/Brian Gieselman Date 12/07/18 Time 13:30 Received by (printed name and signature) B. Benedict Bell/Bruce Date 12/8/18 Time 1032

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: \_\_\_\_\_  
 Tracking No.: \_\_\_\_\_

Add Analysis(es) Requested  
 Container(s)  
 Mod EPA Method 537  
 EPA Method 537(DW only)

Sample ID	Date	Time	Location/Sample Description	Add Analysis(es) Requested										Comments					
				Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 26	Other: Please List Below	PFOA/PFOS	UCMR3 PFAS List 6		PFAS List 14				
BigField-DW-120618	12/06/18	0922	Preservative: TZ	2	P	DW											X		
BigField-FB-120618		0922		2														↑	Extraction Only
Behind the Base-DW-120618		1003		2														↑	Extraction Only
Behind the Base-FB-120618		1003		2														↑	Extraction Only
Shooting Range 1-DW-120618		1704		2														↑	Extraction Only
Shooting Range 1-FB-120618		1704		2														↑	Extraction Only
Shooting Range 1-MS/MSD-120618		1704		4														↓	MS/MSD
Source Blank		1815		2														↓	
DUP-1	12/06/18	0000			P	DW												X	Collect volume from MS/MSD samples

Special Instructions/Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SEND DOCUMENTATION AND RESULTS TO:

Name: Kevin Olness/Kelli Miller (see above)  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_

Container Types: P= HDPE, PJ= HDPE Jar  
 O = Other: \_\_\_\_\_

Bottle Preservation Type: T = Thiosulfate,  
 TZ = Trizma: \_\_\_\_\_

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,  
 SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: \_\_\_\_\_



# Sample Log-In Checklist

 Page # 1 of 1

 Vista Work Order #: 1803982

 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 12/8/18 1032	<b>Initials:</b> WBB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> NA
<b>Logged In:</b>	<b>Date/Time:</b> 12/8/18 1335	<b>Initials:</b> WBB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> A3 E4
<b>Delivered By:</b>	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GSO	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
<b>Preservation:</b>	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
<b>Temp °C:</b> 0.9 (uncorrected)	<b>Probe used:</b> Y / <input checked="" type="checkbox"/> N		<b>Thermometer ID:</b> IR-4
<b>Temp °C:</b> 0.8 (corrected)			

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill			
Trk #	7739 16630475		
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	<input checked="" type="checkbox"/>		
<b>Preservation Documented:</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
	<input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="checkbox"/> Trizma	<input type="checkbox"/> None
	<input type="checkbox"/> Other		
<b>Shipping Container</b>	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
			<input checked="" type="checkbox"/> Return
			<input type="checkbox"/> Dispose

Comments:

## **EXTRACTION INFORMATION**



Process Sheet  
 Workorder: **1803982**

Prep Expiration: 2018-Dec-20  
 Client: KMEA

Workorder Due: **17-Dec-18 00:00**

TAT: 9

Method: **537 PFAS DW DoD Unmodified**  
 Matrix: **Aqueous**

Prep Batch: B8L0076

Version: 14 Analyte DW (Full List)  
 DoD: DoD QSM 5.1

Prep Data Entered: 12/13/18  
Date and Initials

Initial Sequence: S8L0047

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1803982-01	"A"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Big Field-DW-120618		WR-2 A-3	HDPE Bottle, 250 mL
1803982-02	*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Big Field-FB-120618		WR-2 A-3	HDPE Bottle, 250 mL
1803982-03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Behind the Base-DW-120618		WR-2 A-3	HDPE Bottle, 250 mL
1803982-04	*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Behind the Base-FB-120618		WR-2 A-3	HDPE Bottle, 250 mL
1803982-05	"AB"	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shooting Range1-DW-120618	* Shooting Range1-MS/MSD-120618	WR-2 A-3	HDPE Bottle, 250 mL
1803982-06	* "A"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shooting Range1-FB-120618		WR-2 A-3	HDPE Bottle, 250 mL
1803982-07		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Source Blank		WR-2 A-3	HDPE Bottle, 250 mL
1803982-08		<input type="checkbox"/>	<input type="checkbox"/>	DUP-1 Shooting Range1-DW-120618		WR-2 A-3	HDPE Bottle, 250 mL

\* = Extract and hold.

(JW) 12/10/18

Pre-Prep Check Out: HB 12/11/18

Prep Check Out: MAC 12/12/18

Prep Reconciled Initials/Date: HB 12/11/18

Pre-Prep Check In: HB 12/11/18

Prep Check In: NSA

Spike Reconciled Initials/Date: MAC 12/12/18

VialBoxID: Bad Santa

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DW DoD Unmodified

B8L0076

Chemist: MAC

Prep Date: 12/12/18

Prep Time: 0815

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HRMS-9 HB 12/11/18

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
<input type="checkbox"/>	B8L0076-BLK1 (A)	NA	NA	(0.250)	MAC HR 12/12/18	MAC 12/12/18	ug MAC 12/13/18
<input type="checkbox"/>	B8L0076-BS1	↓	↓	(0.250)			
<input type="checkbox"/>	B8L0076-MS1 1803982-05	277.21	26.69	0.25052 ✓			
<input type="checkbox"/>	B8L0076-MSD1 1803982-05	274.81	27.26	0.24755 ✓			
<input type="checkbox"/>	1803982-01	284.39	27.35	0.25704 ✓			
<input type="checkbox"/>	1803982-02	266.34	27.04	0.23930 ✓			
<input type="checkbox"/>	1803982-03	279.54	27.37	0.25217 ✓			
<input type="checkbox"/>	1803982-04	280.02	27.18	0.25284 ✓			
<input type="checkbox"/>	1803982-05	266.71	27.72	0.23899 ✓			
<input type="checkbox"/>	1803982-06	274.39	26.59	0.24780 ✓			
<input type="checkbox"/>	1803982-07	264.51	26.96	0.23755 ✓			
<input type="checkbox"/>	1803982-08	261.61	26.66	0.23495 ✓			

SS/IS: <u>1812508, 10µL (V2)</u> NS: <u>1811312, 20µL (V1)</u> IS/RS: <u>1811902, 10µL (V2)</u>	SPE Chem: <u>Strata X 33µm 500mg 6mL</u> Lot#: <u>518-004378</u> Ele SOLV: <u>MeOH</u> Lot#: <u>JB072589</u> Final Volume(s) <u>1</u>	Notes: <u>(A) Trizma added to QCs HB 12/11/18</u>
---	---	---

Comments: Assume 1 g = 1 mL  
Cen = Centrifuged

Batch: B8L0076

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1803982-01	0.25704 ✓	N/A	N/A	1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-02	0.2393 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-03	0.25217 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-04	0.25284 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-05	0.23899 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-06	0.2478 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-07	0.23755 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803982-08	0.23495 ✓			1000	12-Dec-18 08:15	MAC			Drinking Water	537 PFAS DW DoD Unmod
B8L0076-BLK1	0.25 ✓			1000	12-Dec-18 08:15	MAC				QC
B8L0076-BS1	0.25			1000	12-Dec-18 08:15	MAC	✓18H1312	✓ 20 ✓		QC
B8L0076-MS1	0.25052 ✓			1000	12-Dec-18 08:15	MAC	✓18H1312	✓ 20 ✓		QC
B8L0076-MSD1	0.24755 ✓			1000	12-Dec-18 08:15	MAC	✓18H1312	✓ 20 ✓		QC

*CP*

12/13/18

**SAMPLE DATA –EPA METHOD 537**

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-70.qld

Last Altered: Monday, December 17, 2018 12:28:55 Pacific Standard Time

Printed: Monday, December 17, 2018 12:29:19 Pacific Standard Time

Name: 181214P2\_70, Date: 15-Dec-2018, Time: 01:54:52, ID: B8L0076-BLK1 LRB 0.25, Description: LRB

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		2344.427	0.250		3.36				
2	2 PFHxA	313.1 > 269.1		5470.450	0.250		3.68				
3	4 PFHpA	363 > 319		5470.450	0.250		4.15				
4	6 PFHxS	399 > 80.0		2344.427	0.250		4.26				
5	7 PFOA	413 > 369		5470.450	0.250		4.53				
6	24 13C4-PFOS	503.0 > 80	2344.427	2344.427	0.250	1.000	4.87	4.89	28.7	115	100.0
7	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
8	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
9	24 13C4-PFOS	503.0 > 80	2344.427	2344.427	0.250	1.000	4.87	4.89	28.7	115	100.0
10	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
11	-1										
12	8 PFNA	463 > 419		5470.450	0.250		4.85				
13	9 PFOS	498.9 > 80.0		2344.427	0.250		4.89				
14	11 PFDA	513 > 469		5470.450	0.250		5.11				
15	12 N-MeFOSAA	570 > 419.1		9723.780	0.250		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		9723.780	0.250		5.32				
17	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
18	24 13C4-PFOS	503.0 > 80	2344.427	2344.427	0.250	1.000	4.87	4.89	28.7	115	100.0
19	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9723.780	9723.780	0.250	1.000	5.20	5.22	40.0	160	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9723.780	9723.780	0.250	1.000	5.20	5.22	40.0	160	100.0
22	-1										
23	14 PFUnA	563 > 519		5470.450	0.250		5.35				
24	16 PFDaA	613 > 569		5470.450	0.250		5.55				
25	17 PFTTrDA	662.9 > 619		5470.450	0.250		5.71				
26	18 PFTeDA	712.9 > 669		5470.450	0.250		5.87				
27	19 13C2-PFHxA	315.1 > 270	4042.822	5470.450	0.250	0.759	3.68	3.68	7.39	39.0	97.4
28	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
29	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
30	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
31	23 13C2-PFOA	415 > 370	5470.450	5470.450	0.250	1.000	4.51	4.53	10.0	40.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	5439.833	5470.450	0.250	1.052	5.12	5.11	9.94	37.8	94.6
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	8262.569	9723.780	0.250	0.831	5.33	5.32	34.0	164	102.3

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-70.qld

Last Altered: Monday, December 17, 2018 12:28:55 Pacific Standard Time

Printed: Monday, December 17, 2018 12:29:19 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

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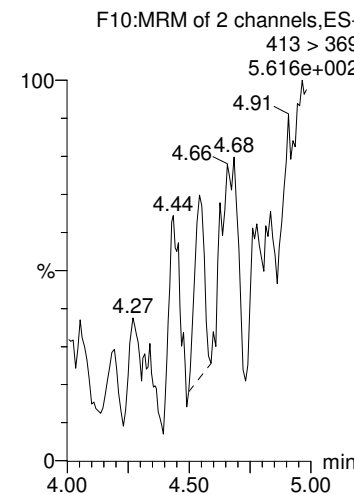
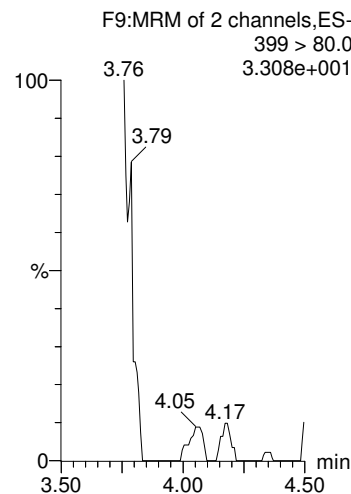
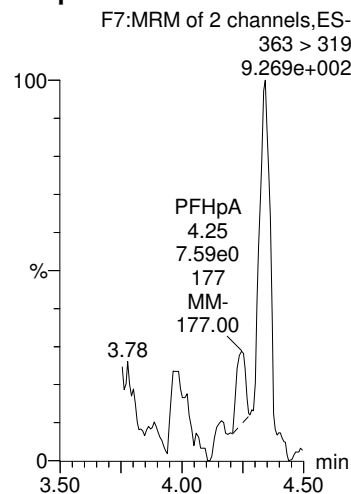
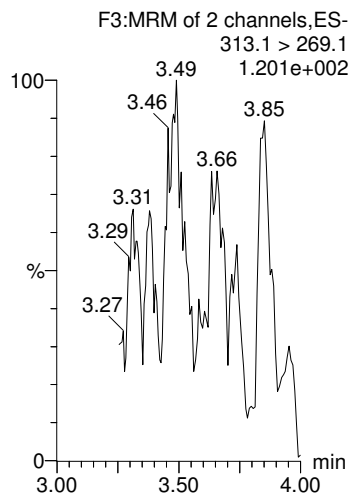
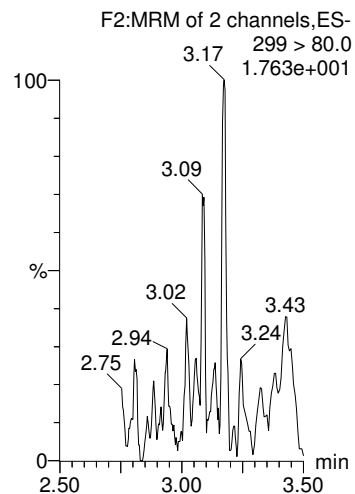
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



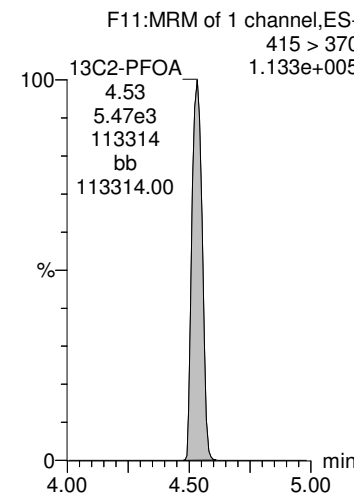
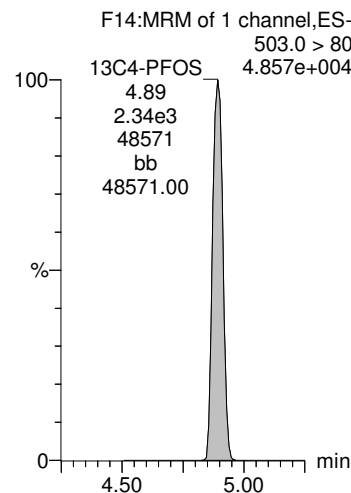
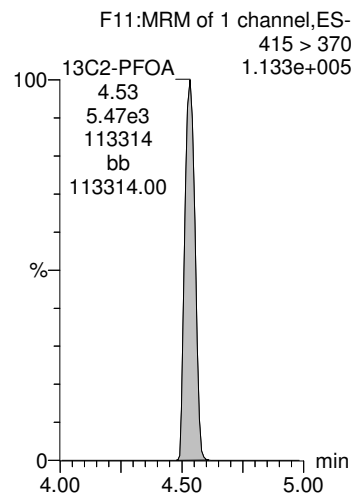
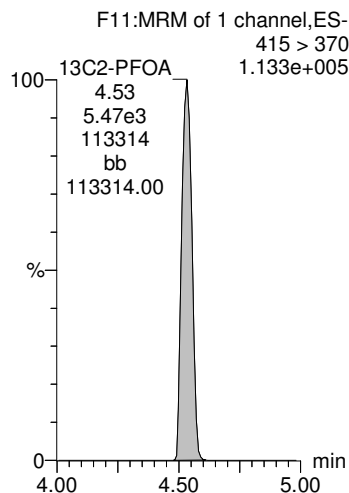
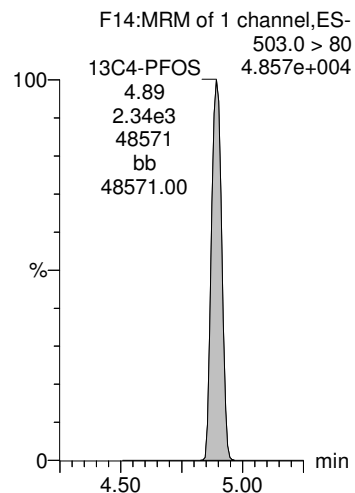
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**



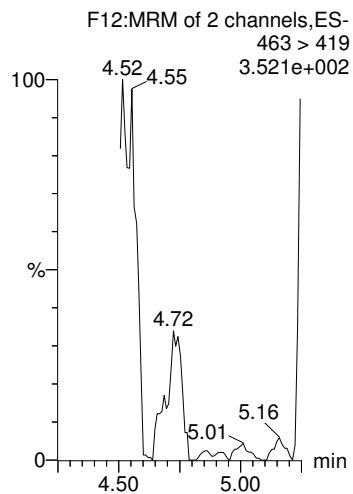


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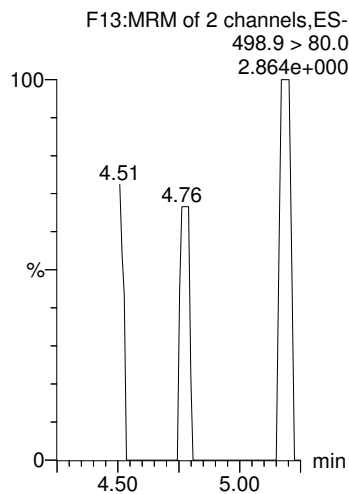
Last Altered: Monday, December 17, 2018 12:28:55 Pacific Standard Time  
Printed: Monday, December 17, 2018 12:29:19 Pacific Standard Time

Name: 181214P2\_70, Date: 15-Dec-2018, Time: 01:54:52, ID: B8L0076-BLK1 LRB 0.25, Description: LRB

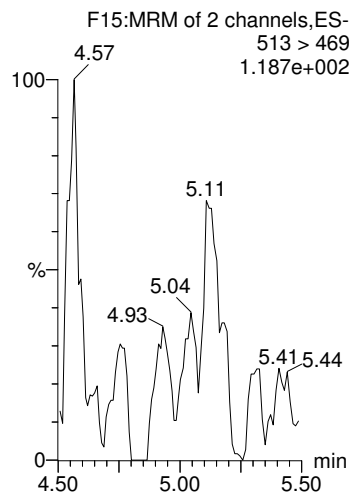
**PFNA**



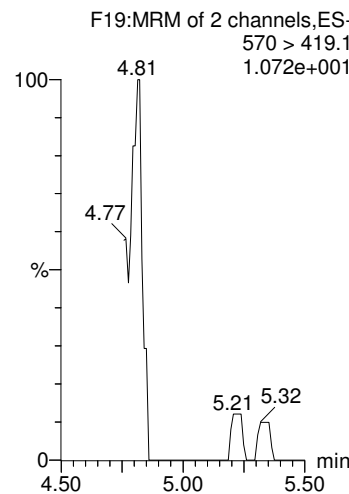
**PFOS**



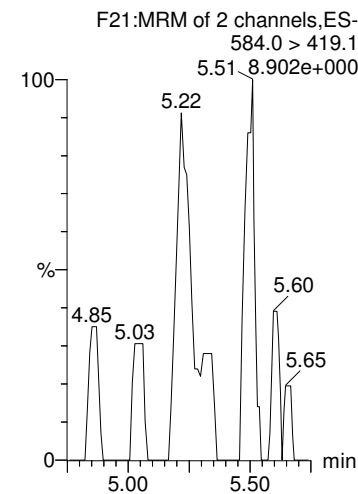
**PFDA**



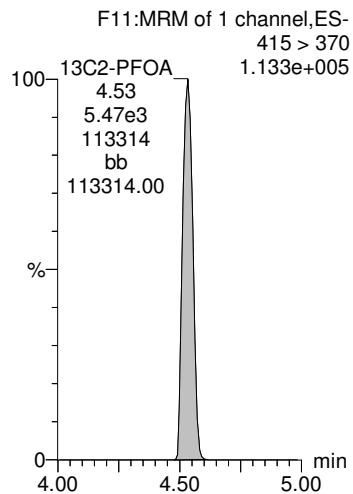
**N-MeFOSAA**



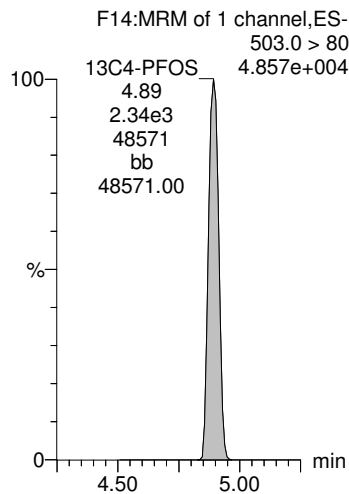
**N-EtFOSAA**



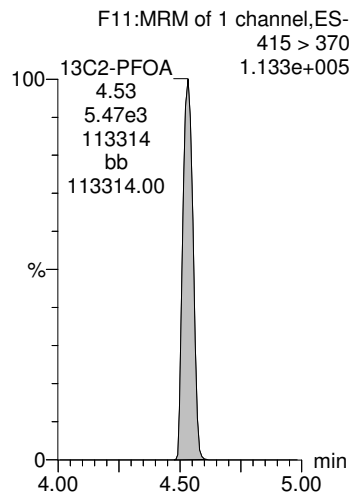
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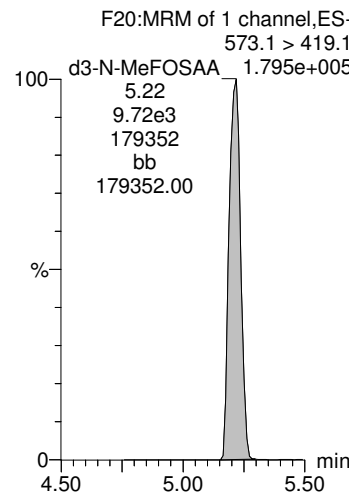
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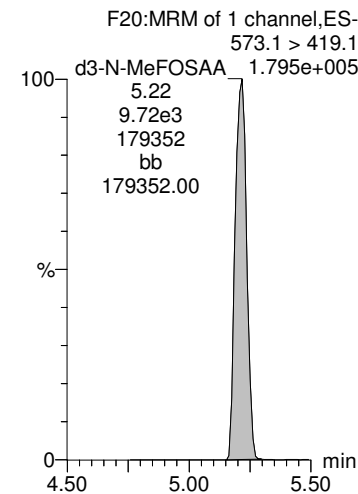
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**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

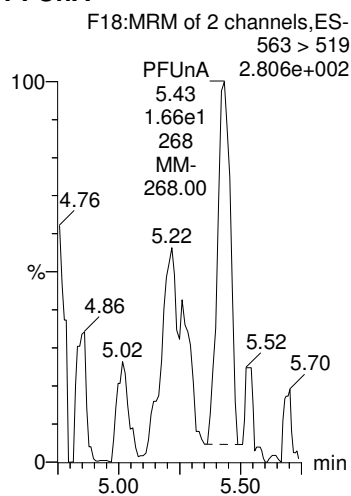


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-70.qld

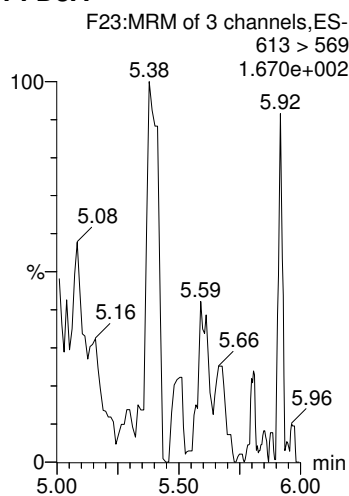
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Printed: Monday, December 17, 2018 12:29:19 Pacific Standard Time

Name: 181214P2\_70, Date: 15-Dec-2018, Time: 01:54:52, ID: B8L0076-BLK1 LRB 0.25, Description: LRB

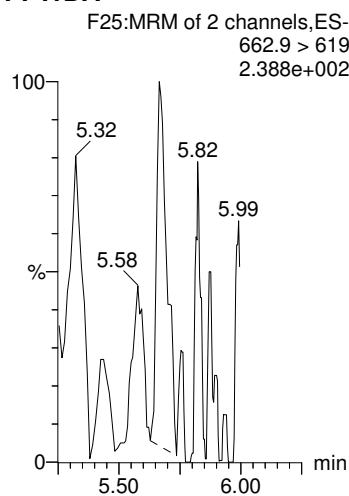
**PFUnA**



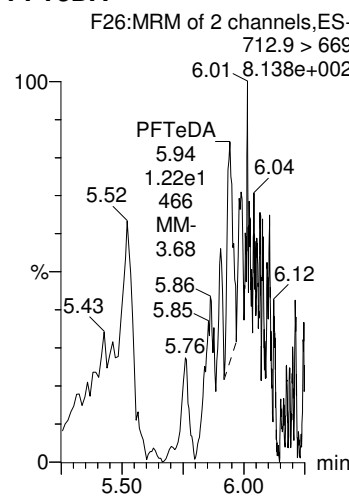
**PFDoxA**



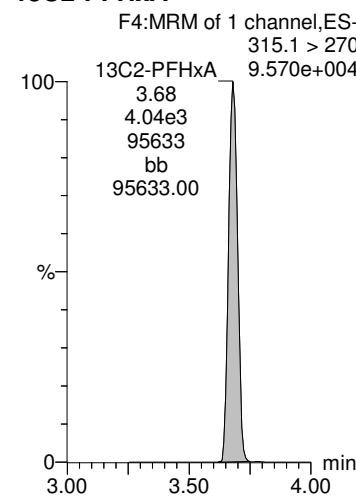
**PFTTrDA**



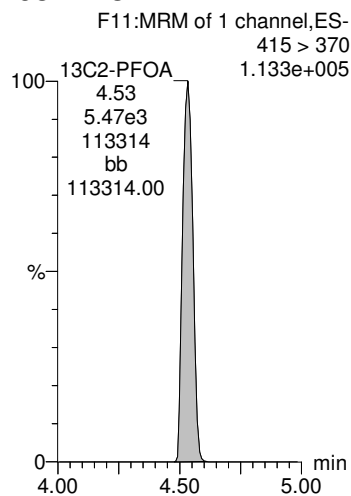
**PFTeDA**



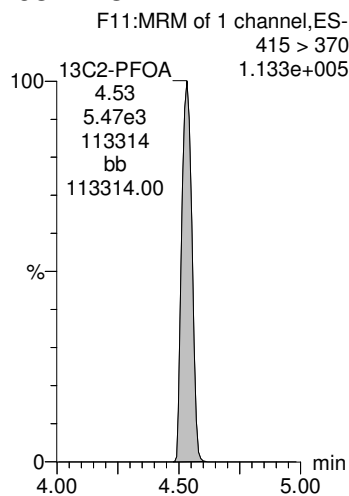
**13C2-PFHxA**



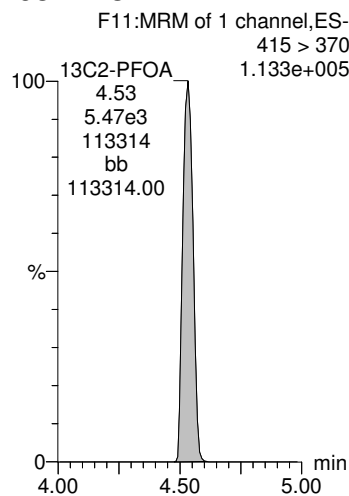
**13C2-PFOA**



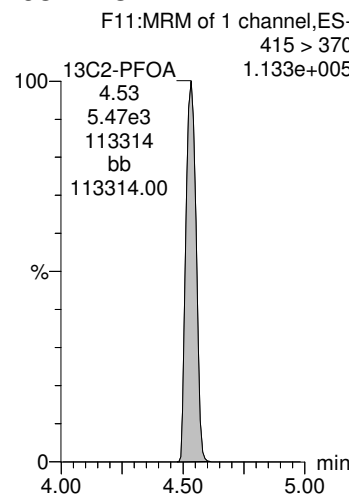
**13C2-PFOA**



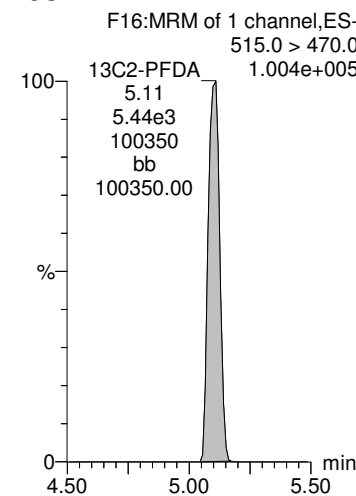
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



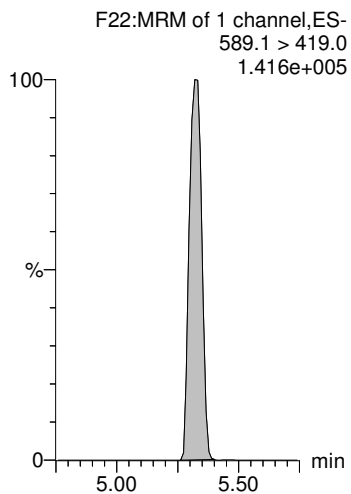
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Printed: Monday, December 17, 2018 12:29:19 Pacific Standard Time

Name: 181214P2\_70, Date: 15-Dec-2018, Time: 01:54:52, ID: B8L0076-BLK1 LRB 0.25, Description: LRB

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-67.qld

Last Altered: Monday, December 17, 2018 12:11:19 Pacific Standard Time

Printed: Monday, December 17, 2018 12:12:27 Pacific Standard Time

Name: 181214P2\_67, Date: 15-Dec-2018, Time: 01:21:20, ID: B8L0076-BS1 LFB 0.25, Description: LFB

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	254.343	2131.334	0.250		3.36	3.38	3.42	17.9	101.0
2	2 PFHxA	313.1 > 269.1	1529.872	4935.999	0.250		3.68	3.68	3.10	21.5	107.7
3	4 PFHpA	363 > 319	2326.426	4935.999	0.250		4.15	4.16	4.71	20.4	102.2
4	6 PFHxS	399 > 80.0	288.147	2131.334	0.250		4.26	4.27	3.88	16.9	92.9
5	7 PFOA	413 > 369	2412.048	4935.999	0.250		4.53	4.53	4.89	21.2	106.2
6	24 13C4-PFOS	503.0 > 80	2131.334	2131.334	0.250	1.000	4.87	4.89	28.7	115	100.0
7	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
8	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
9	24 13C4-PFOS	503.0 > 80	2131.334	2131.334	0.250	1.000	4.87	4.89	28.7	115	100.0
10	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
11	-1										
12	8 PFNA	463 > 419	2093.200	4935.999	0.250		4.85	4.84	4.24	20.3	101.3
13	9 PFOS	498.9 > 80.0	360.106	2131.334	0.250		4.89	4.89	4.85	21.6	116.7
14	11 PFDA	513 > 469	2080.282	4935.999	0.250		5.11	5.11	4.21	20.2	101.2
15	12 N-MeFOSAA	570 > 419.1	1034.789	9193.470	0.250		5.22	5.22	4.50	19.8	98.8
16	13 N-EtFOSAA	584.0 > 419.1	669.160	9193.470	0.250		5.32	5.33	2.91	21.2	106.0
17	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
18	24 13C4-PFOS	503.0 > 80	2131.334	2131.334	0.250	1.000	4.87	4.89	28.7	115	100.0
19	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9193.470	9193.470	0.250	1.000	5.20	5.22	40.0	160	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9193.470	9193.470	0.250	1.000	5.20	5.22	40.0	160	100.0
22	-1										
23	14 PFUnA	563 > 519	1923.741	4935.999	0.250		5.35	5.33	3.90	18.0	90.1
24	16 PFDaA	613 > 569	2965.154	4935.999	0.250		5.55	5.53	6.01	19.5	97.6
25	17 PFTrDA	662.9 > 619	3141.770	4935.999	0.250		5.71	5.70	6.37	19.2	95.9
26	18 PFTeDA	712.9 > 669	3124.512	4935.999	0.250		5.87	5.85	6.33	19.1	95.5
27	19 13C2-PFHxA	315.1 > 270	3760.807	4935.999	0.250	0.759	3.68	3.68	7.62	40.2	100.4
28	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
29	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
30	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
31	23 13C2-PFOA	415 > 370	4935.999	4935.999	0.250	1.000	4.51	4.53	10.0	40.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	5206.301	4935.999	0.250	1.052	5.12	5.11	10.5	40.1	100.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	5836.403	9193.470	0.250	0.831	5.33	5.32	25.4	122	76.4

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-67.qld

Last Altered: Monday, December 17, 2018 12:11:19 Pacific Standard Time

Printed: Monday, December 17, 2018 12:12:27 Pacific Standard Time

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Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_67, Date: 15-Dec-2018, Time: 01:21:20, ID: B8L0076-BS1 LFB 0.25, Description: LFB

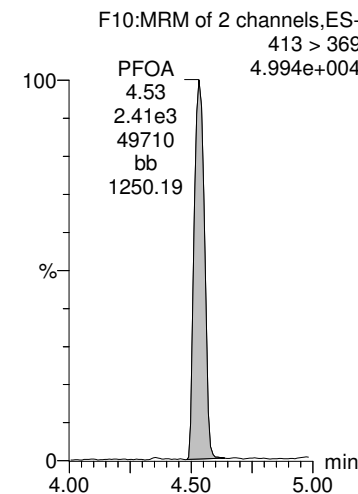
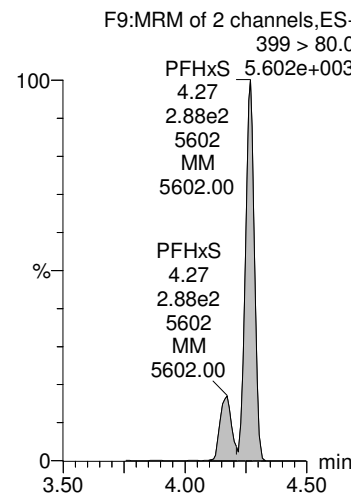
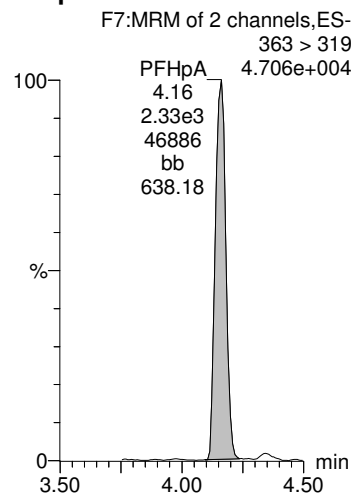
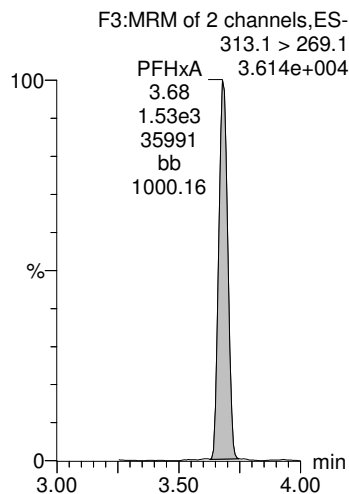
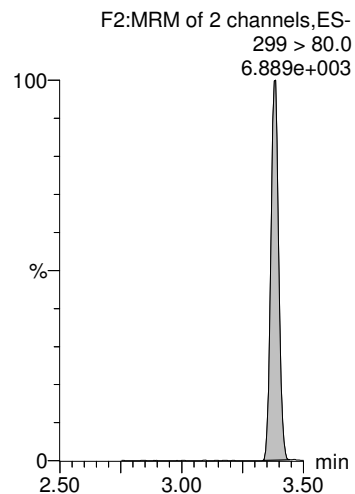
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



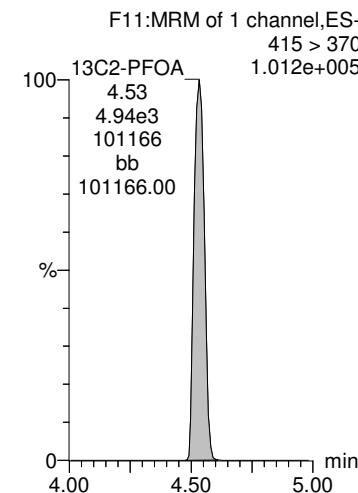
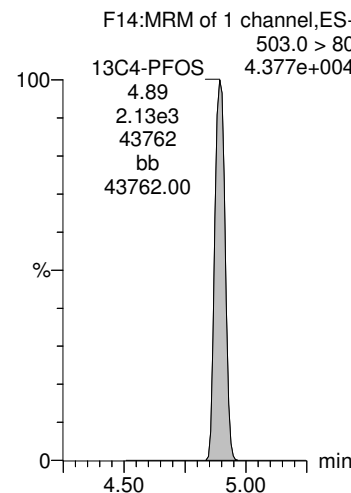
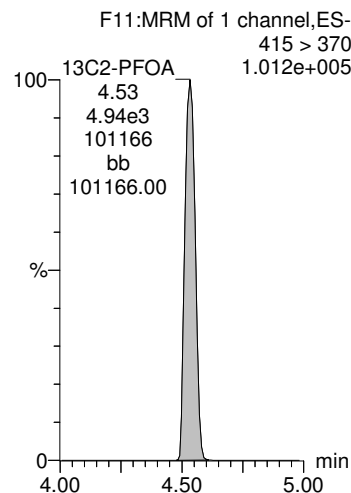
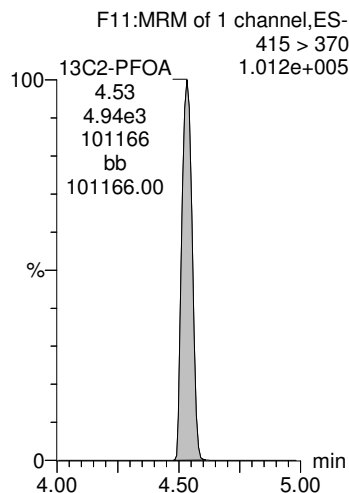
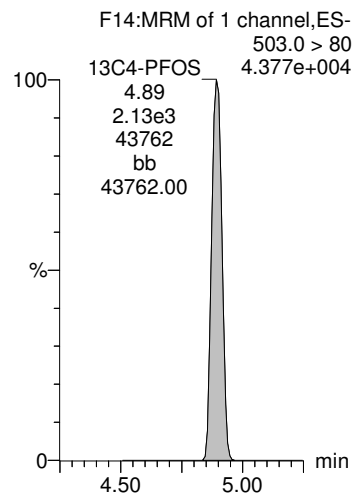
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**



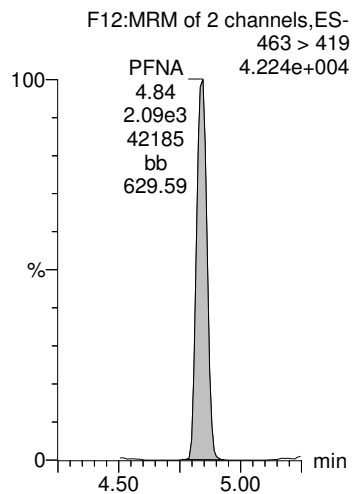
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Last Altered: Monday, December 17, 2018 12:11:19 Pacific Standard Time

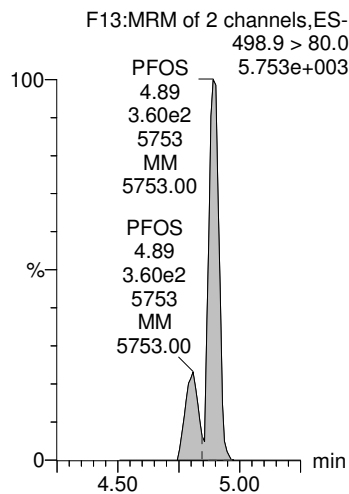
Printed: Monday, December 17, 2018 12:12:27 Pacific Standard Time

Name: 181214P2\_67, Date: 15-Dec-2018, Time: 01:21:20, ID: B8L0076-BS1 LFB 0.25, Description: LFB

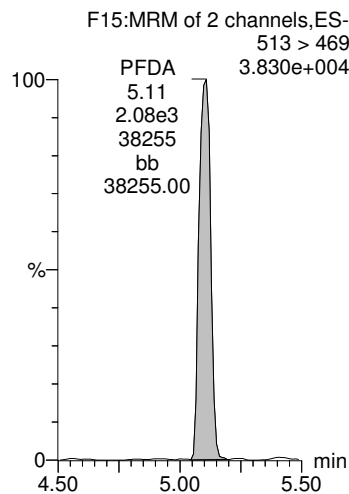
**PFNA**



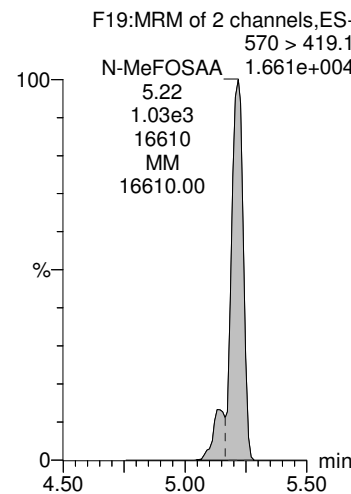
**PFOS**



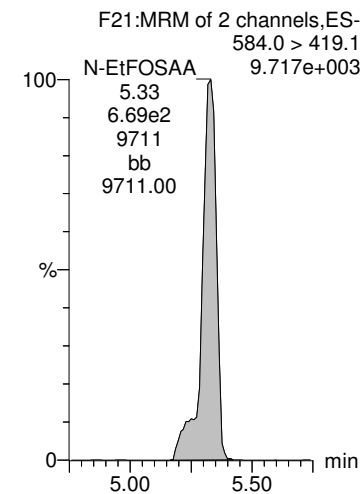
**PFDA**



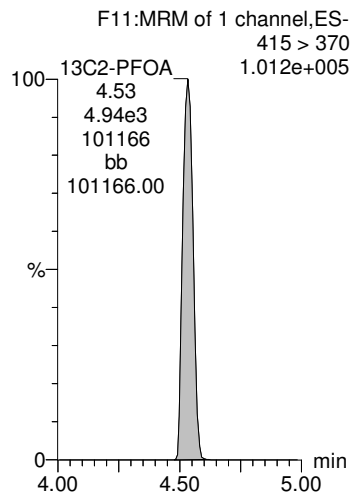
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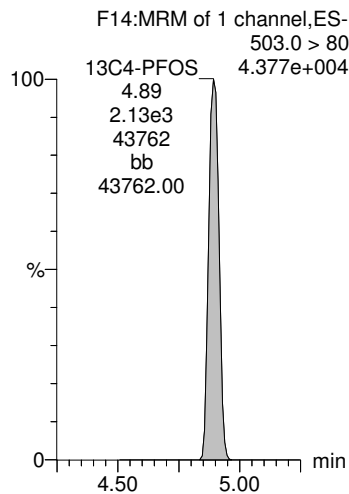
**N-EtFOSAA**



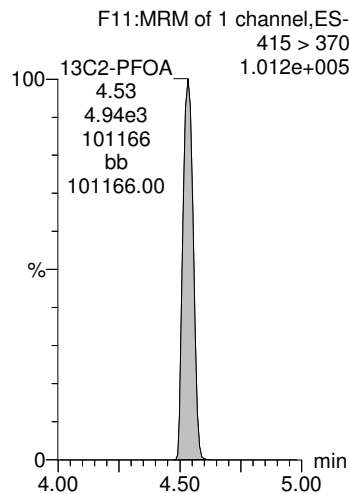
**13C2-PFOA**



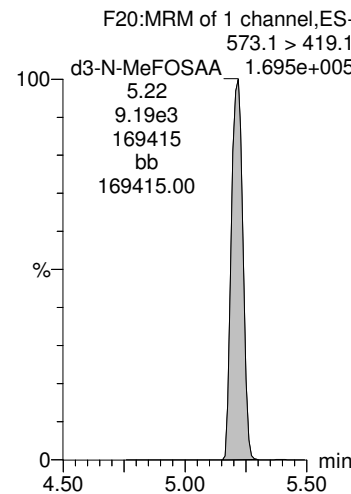
**13C4-PFOS**



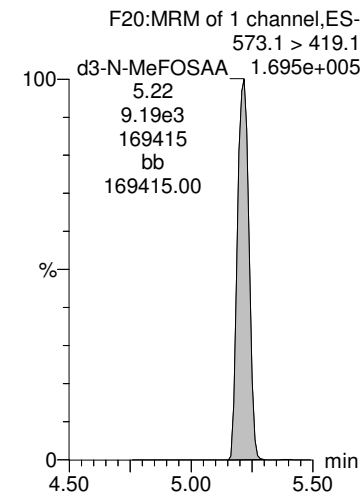
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

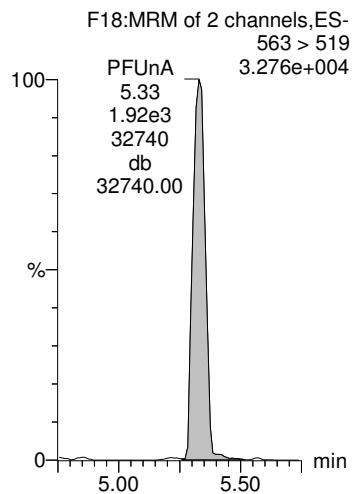


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-67.qld

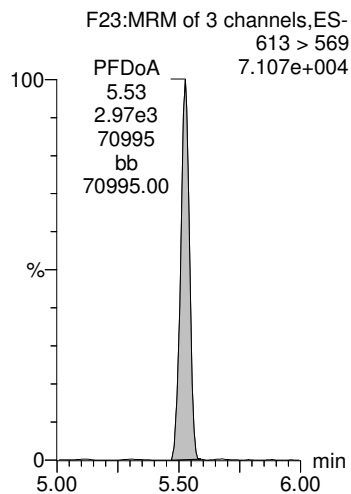
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Printed: Monday, December 17, 2018 12:12:27 Pacific Standard Time

Name: 181214P2\_67, Date: 15-Dec-2018, Time: 01:21:20, ID: B8L0076-BS1 LFB 0.25, Description: LFB

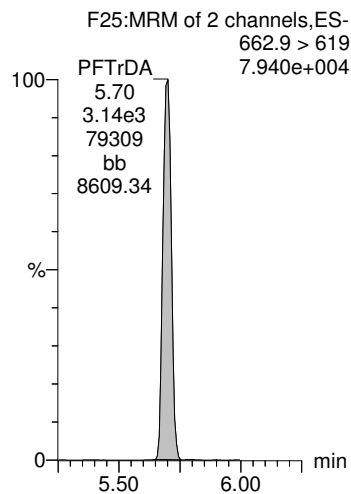
**PFUnA**



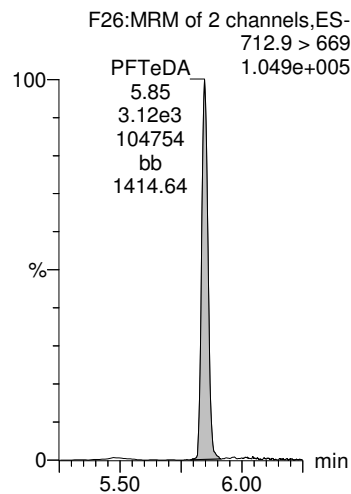
**PFDaA**



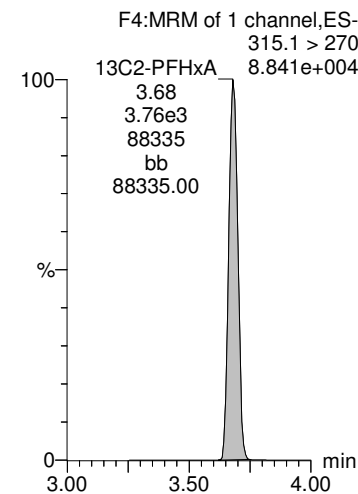
**PFTrDA**



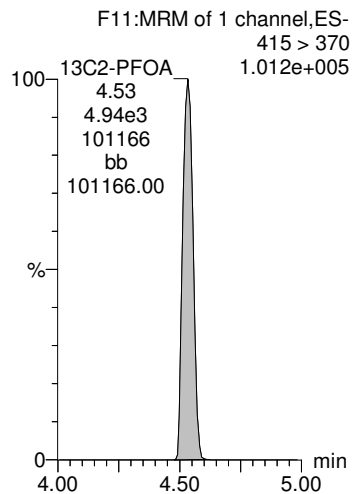
**PFTeDA**



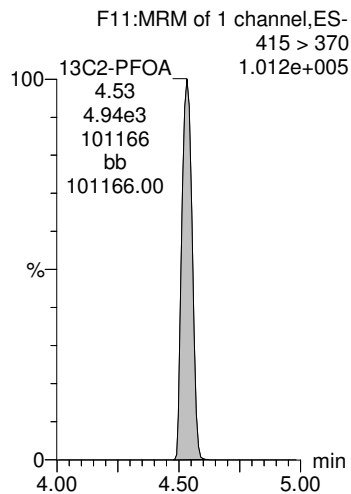
**13C2-PFHxA**



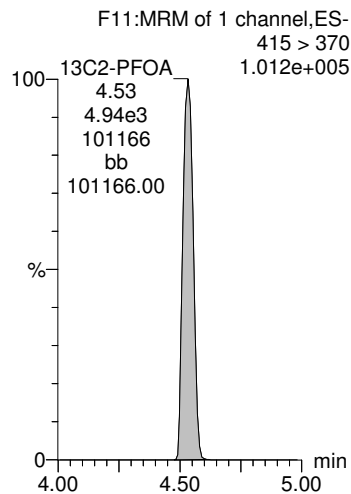
**13C2-PFOA**



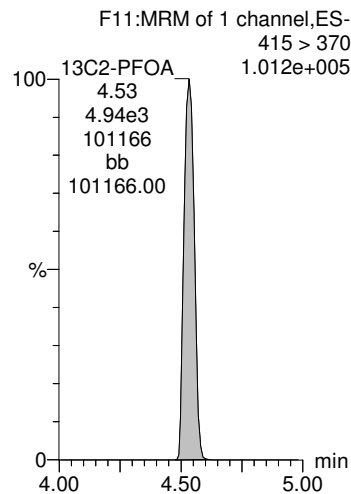
**13C2-PFOA**



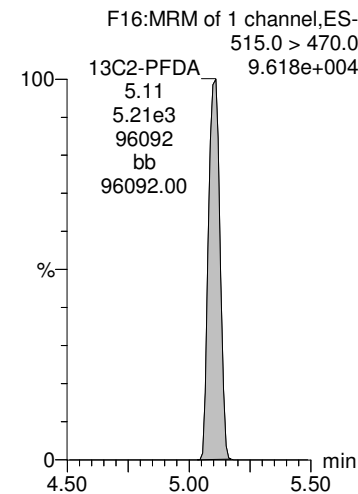
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



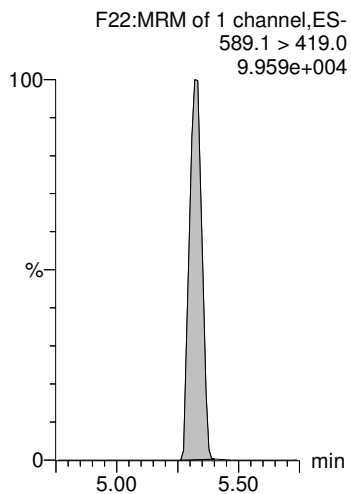
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-67.qld

Last Altered: Monday, December 17, 2018 12:11:19 Pacific Standard Time

Printed: Monday, December 17, 2018 12:12:27 Pacific Standard Time

Name: 181214P2\_67, Date: 15-Dec-2018, Time: 01:21:20, ID: B8L0076-BS1 LFB 0.25, Description: LFB

**d5-N-EtFOSAA**





Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-71.qld

Last Altered: Monday, December 17, 2018 12:31:11 Pacific Standard Time

Printed: Monday, December 17, 2018 12:31:53 Pacific Standard Time

Name: 181214P2\_71, Date: 15-Dec-2018, Time: 02:06:03, ID: 1803982-01 Big Field-DW-120618 0.25704, Description: Big Field-DW-120618

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		2089.692	0.257		3.36				
2	2 PFHxA	313.1 > 269.1		4880.870	0.257		3.68				
3	4 PFHpA	363 > 319		4880.870	0.257		4.15				
4	6 PFHxS	399 > 80.0		2089.692	0.257		4.26				
5	7 PFOA	413 > 369		4880.870	0.257		4.53				
6	24 13C4-PFOS	503.0 > 80	2089.692	2089.692	0.257	1.000	4.87	4.89	28.7	112	100.0
7	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
8	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
9	24 13C4-PFOS	503.0 > 80	2089.692	2089.692	0.257	1.000	4.87	4.89	28.7	112	100.0
10	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
11	-1										
12	8 PFNA	463 > 419		4880.870	0.257		4.85				
13	9 PFOS	498.9 > 80.0		2089.692	0.257		4.89				
14	11 PFDA	513 > 469		4880.870	0.257		5.11				
15	12 N-MeFOSAA	570 > 419.1		8802.440	0.257		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		8802.440	0.257		5.33				
17	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
18	24 13C4-PFOS	503.0 > 80	2089.692	2089.692	0.257	1.000	4.87	4.89	28.7	112	100.0
19	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	8802.440	8802.440	0.257	1.000	5.20	5.22	40.0	156	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	8802.440	8802.440	0.257	1.000	5.20	5.22	40.0	156	100.0
22	-1										
23	14 PFUnA	563 > 519		4880.870	0.257		5.35				
24	16 PFDaA	613 > 569		4880.870	0.257		5.55				
25	17 PFTTrDA	662.9 > 619		4880.870	0.257		5.71				
26	18 PFTeDA	712.9 > 669		4880.870	0.257		5.87				
27	19 13C2-PFHxA	315.1 > 270	3731.731	4880.870	0.257	0.759	3.68	3.68	7.65	39.2	100.8
28	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
29	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
30	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
31	23 13C2-PFOA	415 > 370	4880.870	4880.870	0.257	1.000	4.51	4.53	10.0	38.9	100.0
32	21 13C2-PFDA	515.0 > 470.0	4944.532	4880.870	0.257	1.052	5.12	5.11	10.1	37.5	96.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	7628.179	8802.440	0.257	0.831	5.33	5.33	34.7	162	104.3

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-71.qld

Last Altered: Monday, December 17, 2018 12:31:11 Pacific Standard Time

Printed: Monday, December 17, 2018 12:31:53 Pacific Standard Time

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Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_71, Date: 15-Dec-2018, Time: 02:06:03, ID: 1803982-01 Big Field-DW-120618 0.25704, Description: Big Field-DW-120618

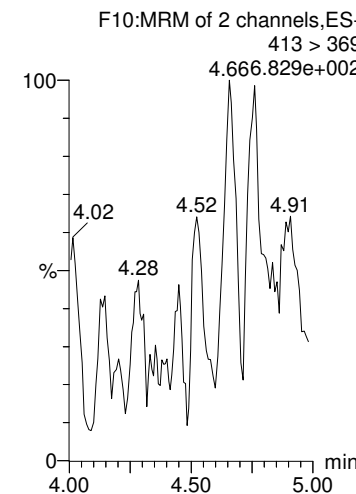
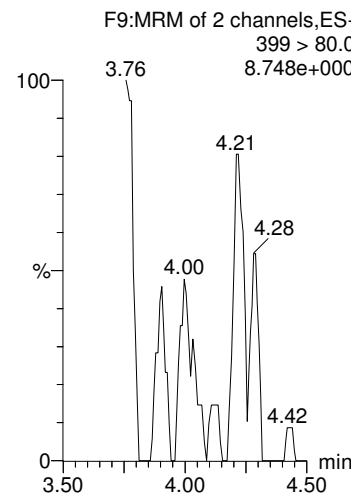
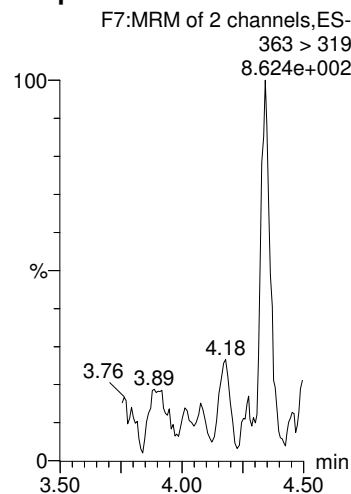
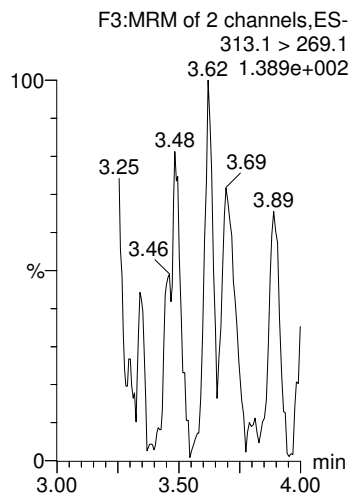
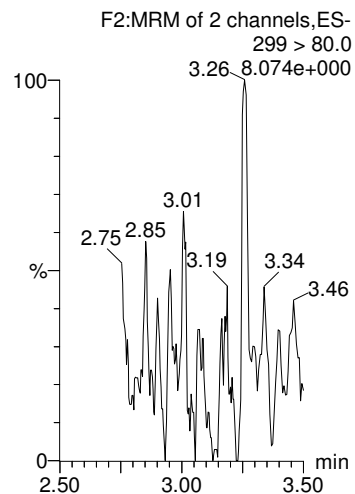
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



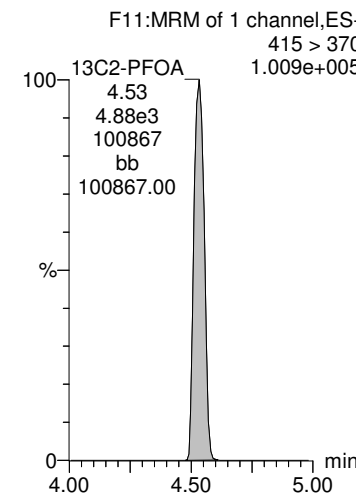
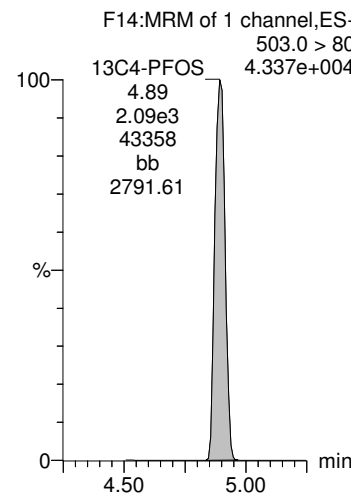
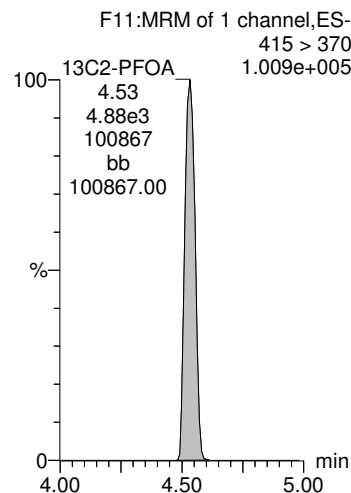
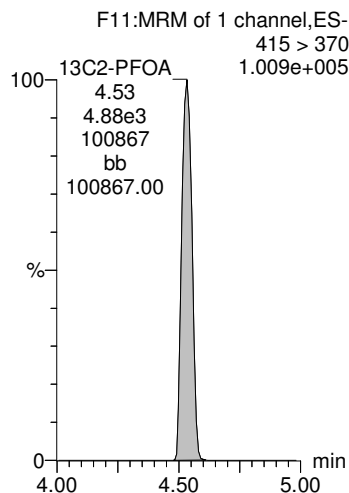
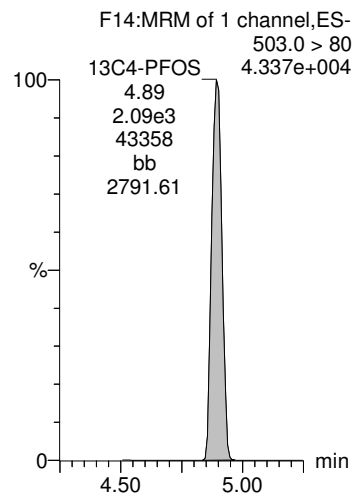
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**

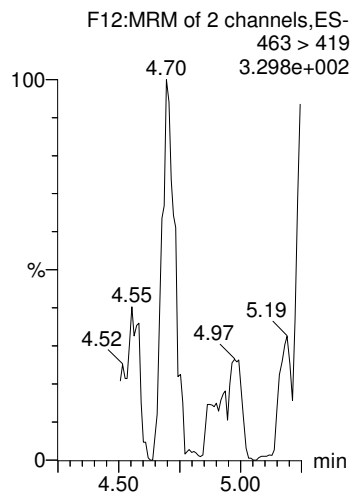


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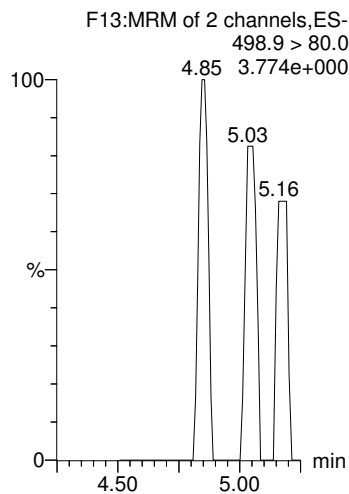
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Name: 181214P2\_71, Date: 15-Dec-2018, Time: 02:06:03, ID: 1803982-01 Big Field-DW-120618 0.25704, Description: Big Field-DW-120618

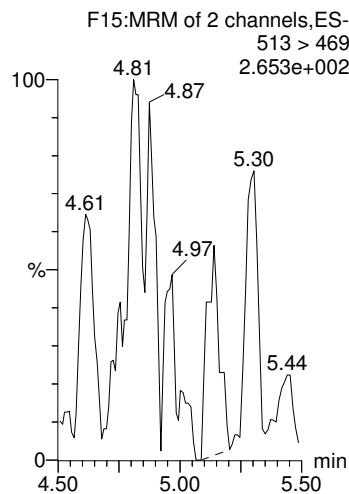
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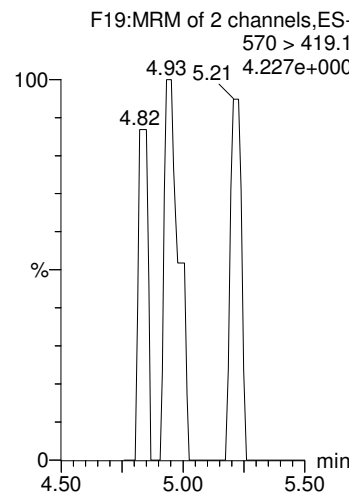
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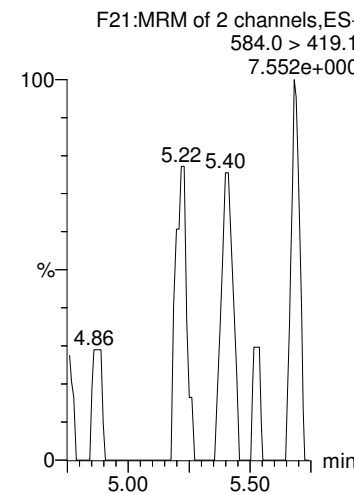
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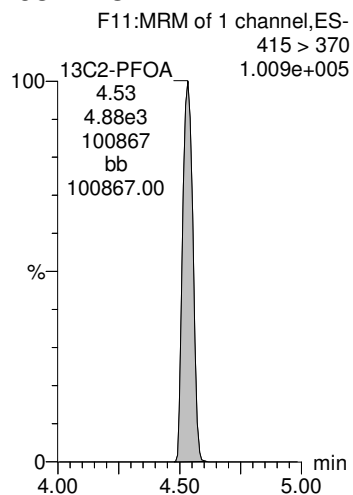
**N-MeFOSAA**



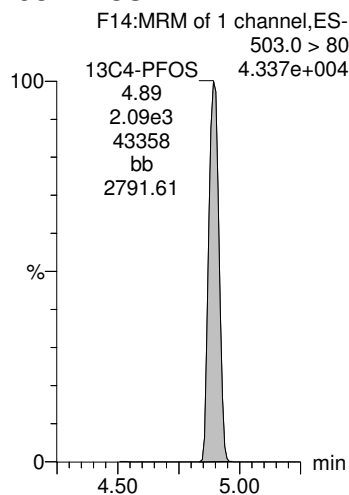
**N-EtFOSAA**



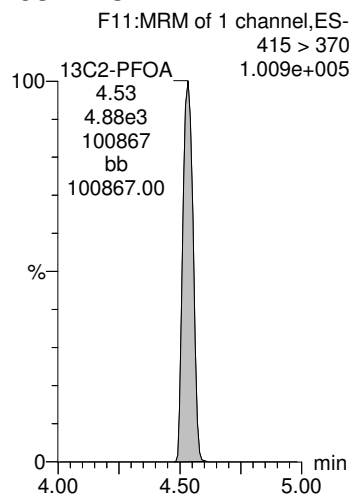
**13C2-PFOA**



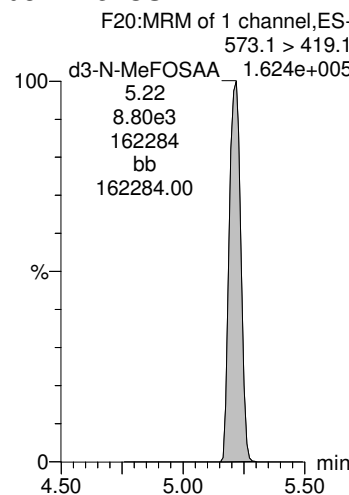
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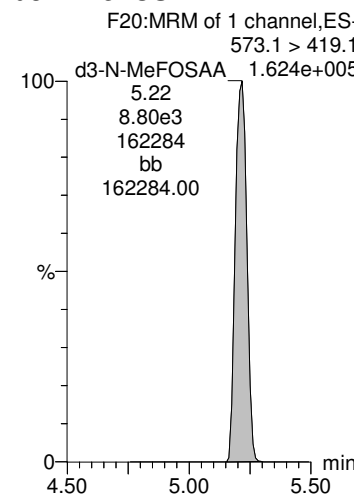
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

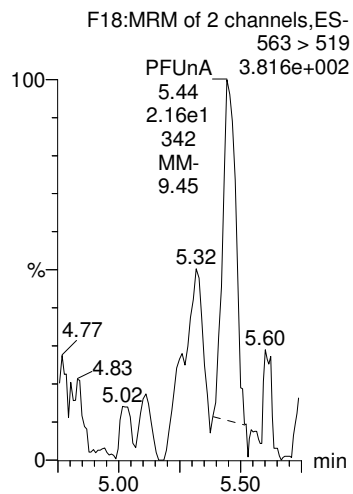


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-71.qld

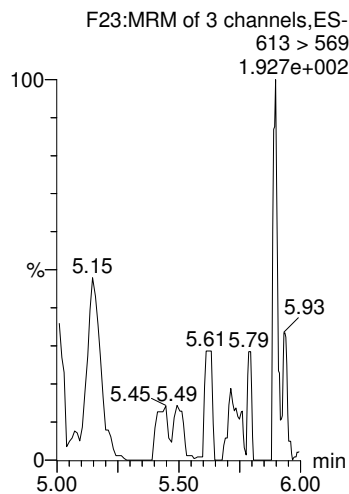
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Printed: Monday, December 17, 2018 12:31:53 Pacific Standard Time

Name: 181214P2\_71, Date: 15-Dec-2018, Time: 02:06:03, ID: 1803982-01 Big Field-DW-120618 0.25704, Description: Big Field-DW-120618

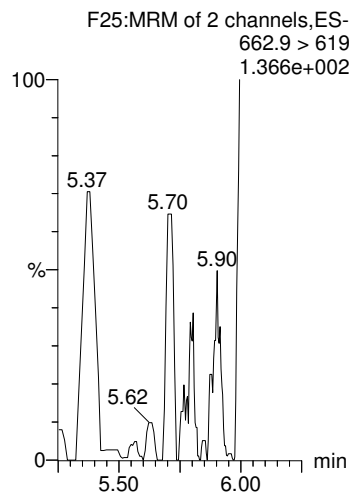
**PFUnA**



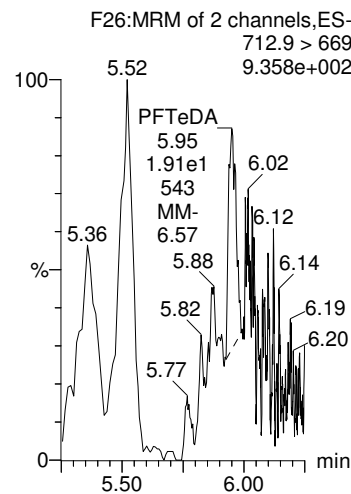
**PFDaA**



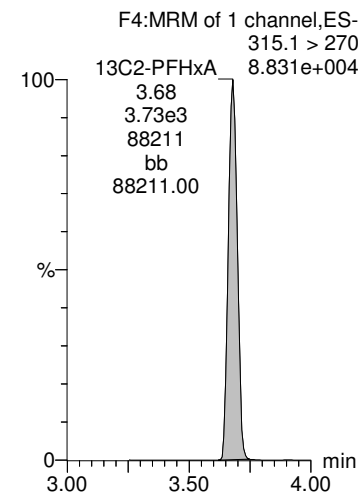
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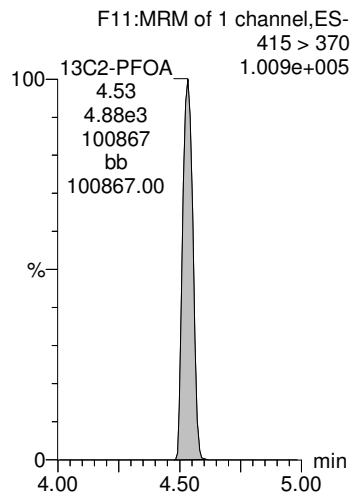
**PFTeDA**



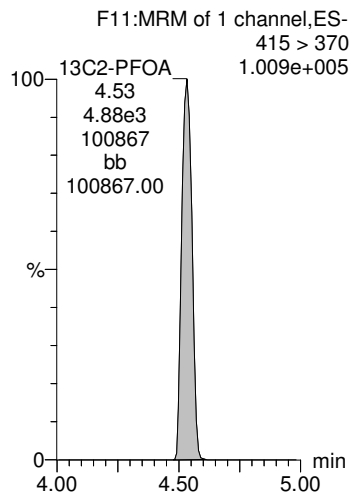
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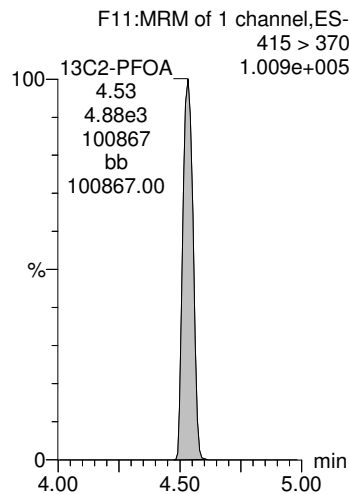
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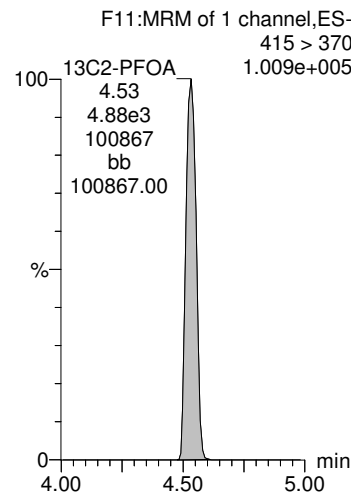
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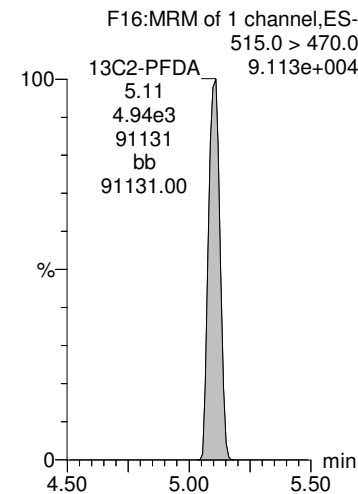
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



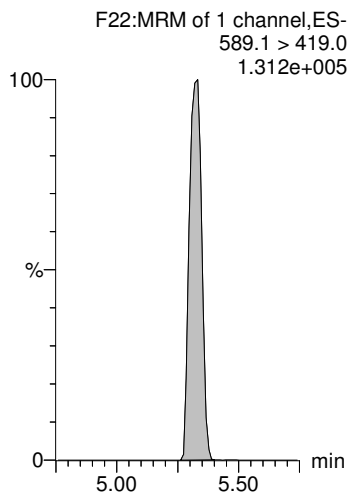
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Last Altered: Monday, December 17, 2018 12:31:11 Pacific Standard Time

Printed: Monday, December 17, 2018 12:31:53 Pacific Standard Time

Name: 181214P2\_71, Date: 15-Dec-2018, Time: 02:06:03, ID: 1803982-01 Big Field-DW-120618 0.25704, Description: Big Field-DW-120618

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-72.qld

Last Altered: Monday, December 17, 2018 12:36:40 Pacific Standard Time

Printed: Monday, December 17, 2018 12:37:01 Pacific Standard Time

Name: 181214P2\_72, Date: 15-Dec-2018, Time: 02:17:13, ID: 1803982-02 Big Field-FB-120618 0.2393, Description: Big Field-FB-120618

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	39.440	2185.805	0.239		3.36	3.38	0.518	2.82	
2	2 PFHxA	313.1 > 269.1	1169.733	5041.234	0.239		3.68	3.68	2.32	16.9	
3	4 PFHpA	363 > 319	831.093	5041.234	0.239		4.15	4.16	1.65	7.47	
4	6 PFHxS	399 > 80.0	639.996	2185.805	0.239		4.26	4.27	8.40	38.4	
5	7 PFOA	413 > 369	4696.400	5041.234	0.239		4.53	4.53	9.32	42.3	
6	24 13C4-PFOS	503.0 > 80	2185.805	2185.805	0.239	1.000	4.87	4.89	28.7	120	100.0
7	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
8	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
9	24 13C4-PFOS	503.0 > 80	2185.805	2185.805	0.239	1.000	4.87	4.89	28.7	120	100.0
10	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
11	-1										
12	8 PFNA	463 > 419	145.090	5041.234	0.239		4.85	4.84	0.288	1.44	
13	9 PFOS	498.9 > 80.0	686.587	2185.805	0.239		4.89	4.89	9.02	41.9	
14	11 PFDA	513 > 469		5041.234	0.239		5.11				
15	12 N-MeFOSAA	570 > 419.1		9362.021	0.239		5.22				
16	13 N-EtFOSAA	584.0 > 419.1	42.618	9362.021	0.239		5.32	5.33	0.182	1.41	
17	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
18	24 13C4-PFOS	503.0 > 80	2185.805	2185.805	0.239	1.000	4.87	4.89	28.7	120	100.0
19	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9362.021	9362.021	0.239	1.000	5.20	5.22	40.0	167	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9362.021	9362.021	0.239	1.000	5.20	5.22	40.0	167	100.0
22	-1										
23	14 PFUnA	563 > 519		5041.234	0.239		5.35				
24	16 PFDaA	613 > 569		5041.234	0.239		5.55				
25	17 PFTTrDA	662.9 > 619		5041.234	0.239		5.71				
26	18 PFTeDA	712.9 > 669		5041.234	0.239		5.87				
27	19 13C2-PFHxA	315.1 > 270	3959.721	5041.234	0.239	0.759	3.68	3.68	7.85	43.3	103.5
28	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
29	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
30	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
31	23 13C2-PFOA	415 > 370	5041.234	5041.234	0.239	1.000	4.51	4.53	10.0	41.8	100.0
32	21 13C2-PFDA	515.0 > 470.0	5138.672	5041.234	0.239	1.052	5.12	5.11	10.2	40.5	96.9
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	7560.831	9362.021	0.239	0.831	5.33	5.32	32.3	162	97.2

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-72.qld

Last Altered: Monday, December 17, 2018 12:36:40 Pacific Standard Time  
Printed: Monday, December 17, 2018 12:37:01 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_72, Date: 15-Dec-2018, Time: 02:17:13, ID: 1803982-02 Big Field-FB-120618 0.2393, Description: Big Field-FB-120618

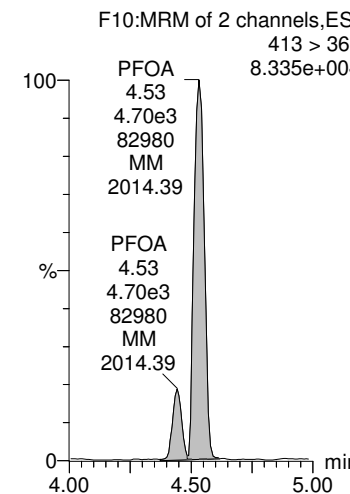
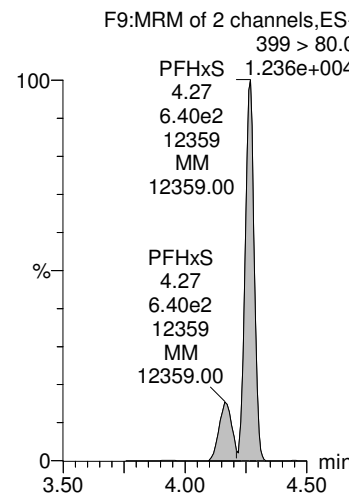
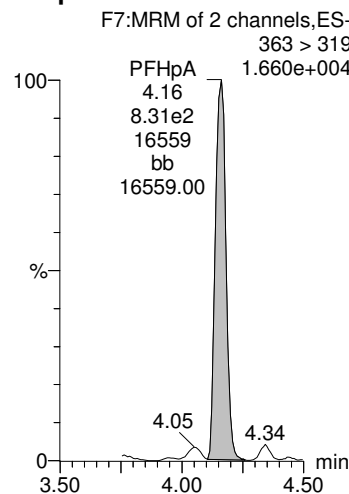
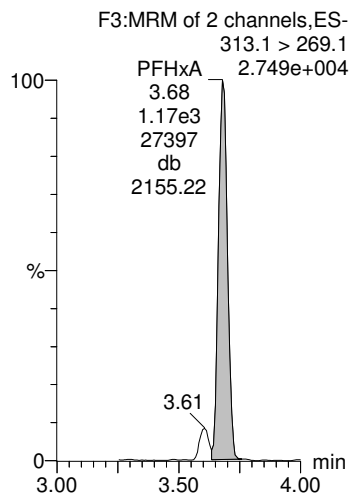
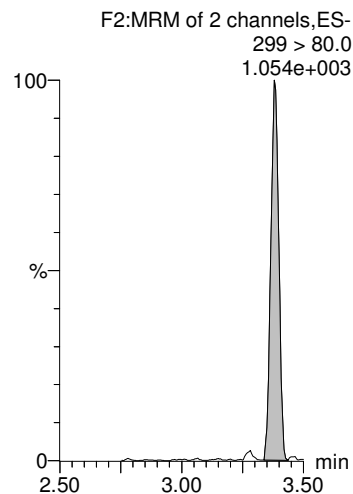
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



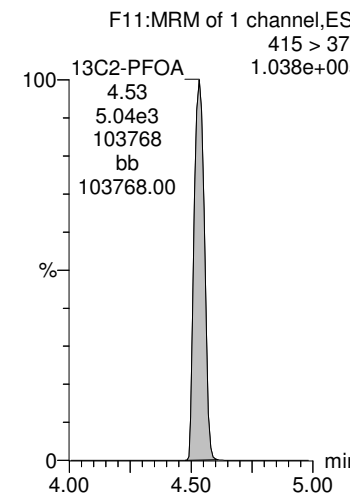
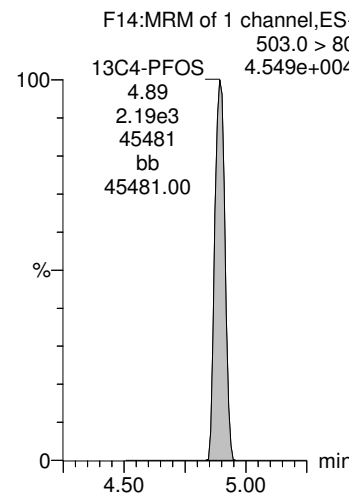
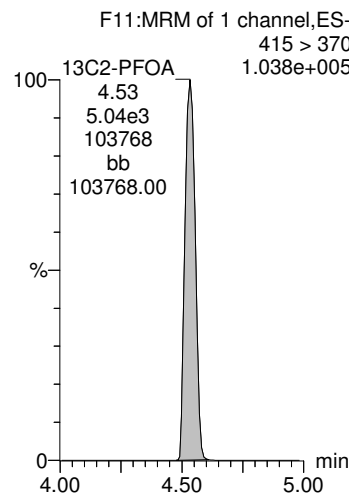
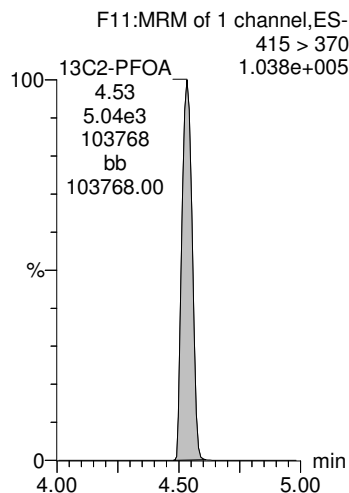
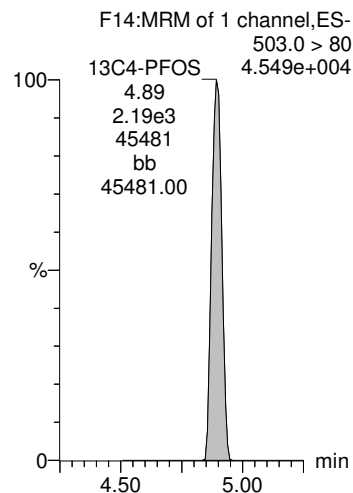
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**



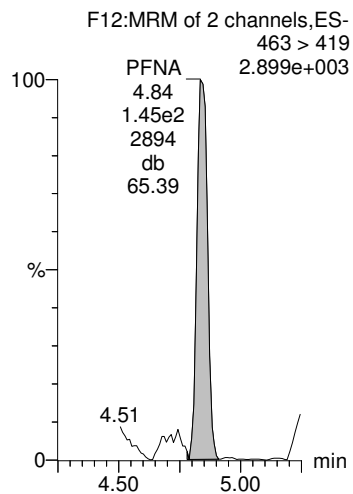
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-72.qld

Last Altered: Monday, December 17, 2018 12:36:40 Pacific Standard Time

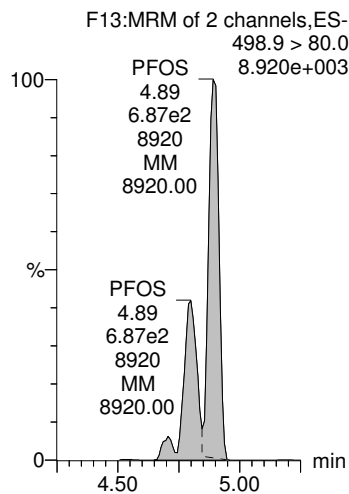
Printed: Monday, December 17, 2018 12:37:01 Pacific Standard Time

Name: 181214P2\_72, Date: 15-Dec-2018, Time: 02:17:13, ID: 1803982-02 Big Field-FB-120618 0.2393, Description: Big Field-FB-120618

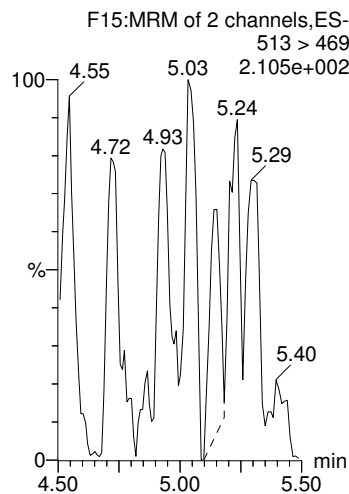
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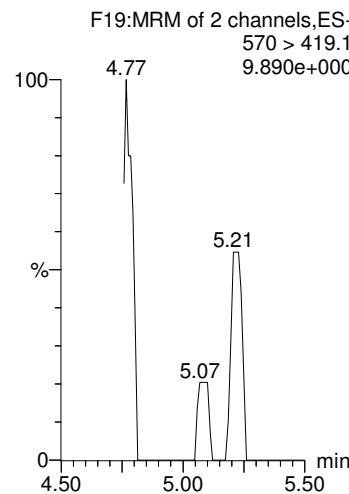
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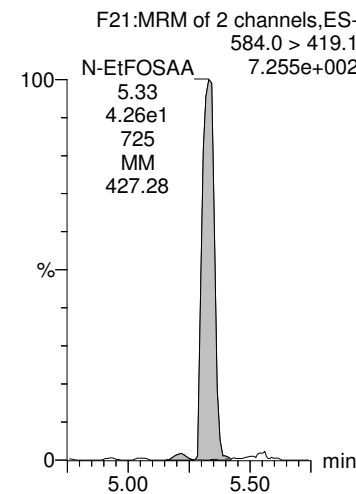
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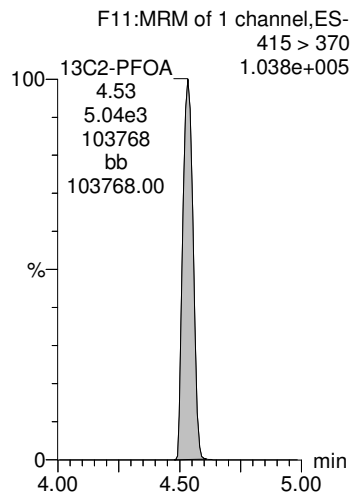
**N-MeFOSAA**



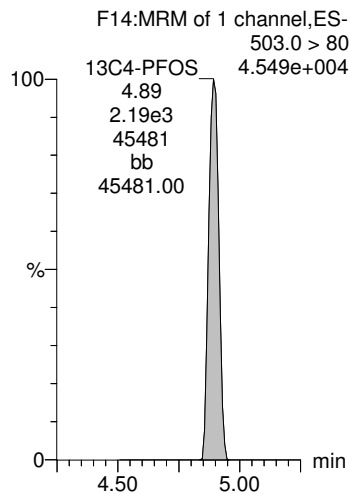
**N-EtFOSAA**



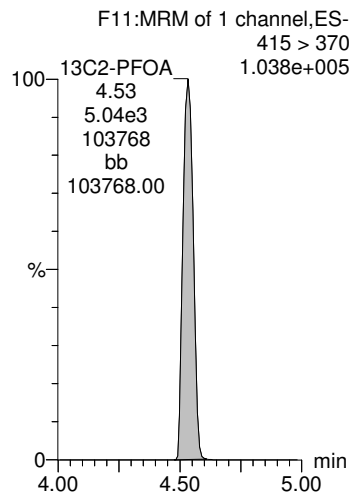
**13C2-PFOA**



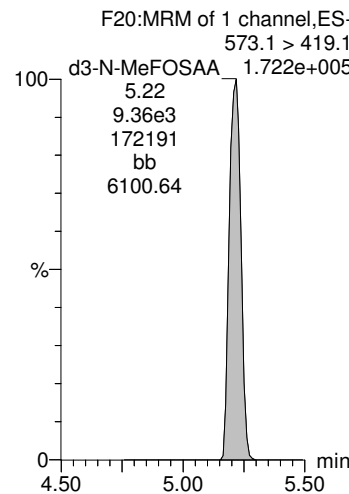
**13C4-PFOS**



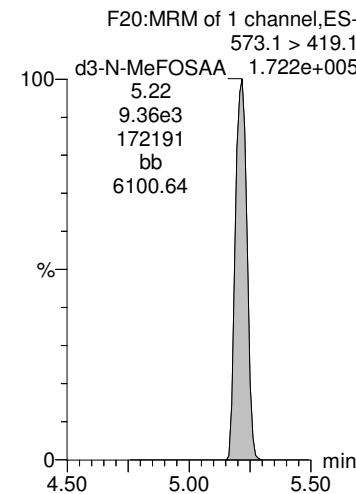
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**



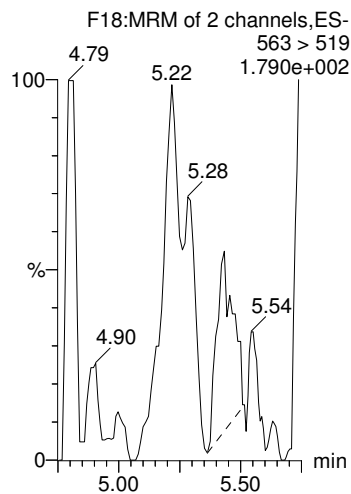


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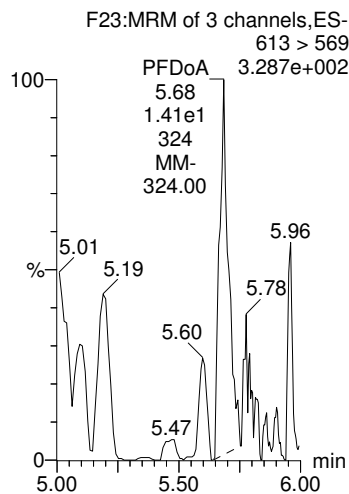
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Name: 181214P2\_72, Date: 15-Dec-2018, Time: 02:17:13, ID: 1803982-02 Big Field-FB-120618 0.2393, Description: Big Field-FB-120618

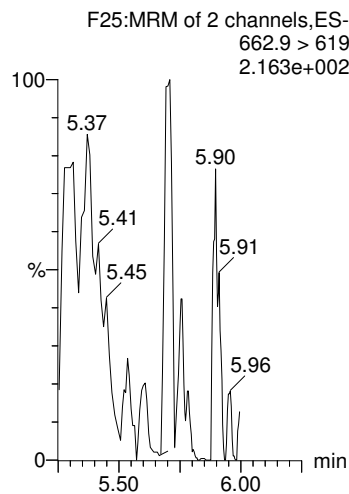
**PFUnA**



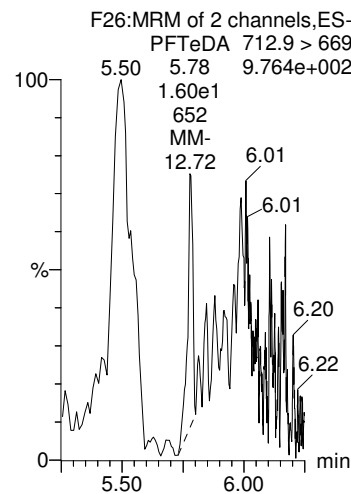
**PFDaA**



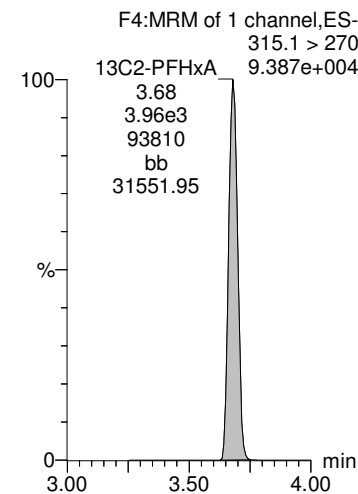
**PFTrDA**



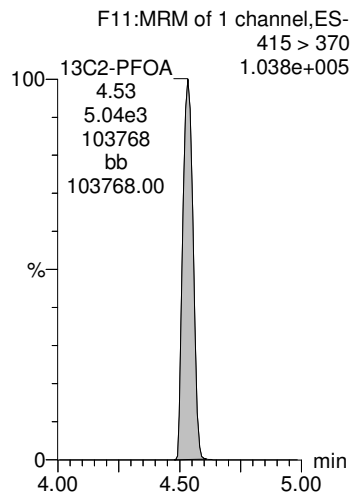
**PFTeDA**



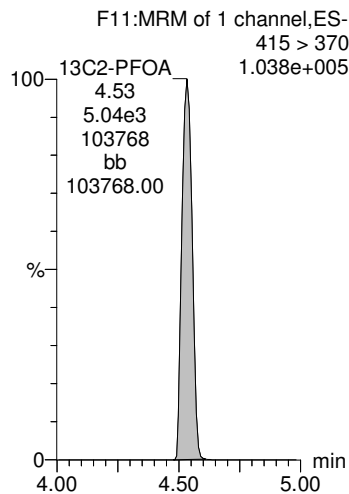
**13C2-PFHxA**



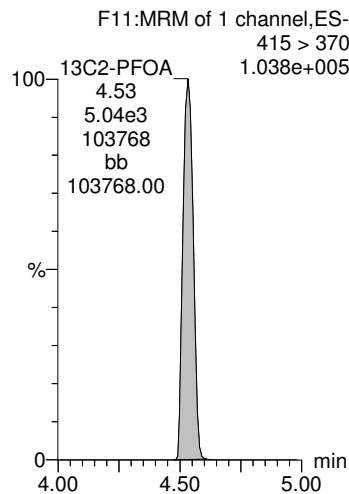
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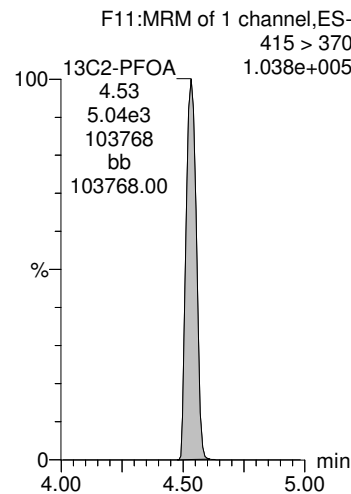
**13C2-PFOA**



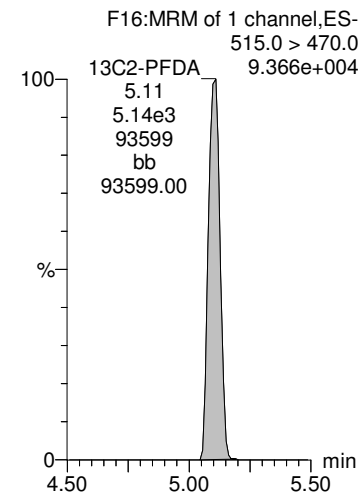
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



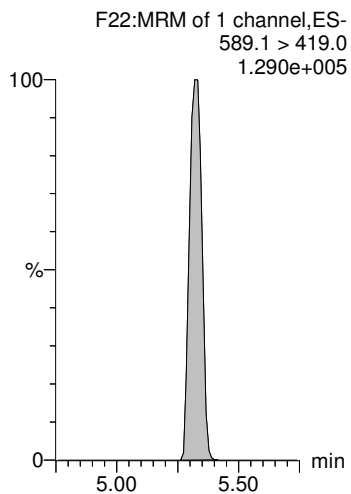
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Last Altered: Monday, December 17, 2018 12:36:40 Pacific Standard Time

Printed: Monday, December 17, 2018 12:37:01 Pacific Standard Time

Name: 181214P2\_72, Date: 15-Dec-2018, Time: 02:17:13, ID: 1803982-02 Big Field-FB-120618 0.2393, Description: Big Field-FB-120618

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-73.qld

Last Altered: Monday, December 17, 2018 12:38:08 Pacific Standard Time

Printed: Monday, December 17, 2018 12:38:32 Pacific Standard Time

Name: 181214P2\_73, Date: 15-Dec-2018, Time: 02:28:24, ID: 1803982-03 Behind the Base-DW-120618 0.25217, Description: Behind the Base-DW-120618

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		1958.739	0.252		3.36				
2	2 PFHxA	313.1 > 269.1		4884.112	0.252		3.68				
3	4 PFHpA	363 > 319		4884.112	0.252		4.15				
4	6 PFHxS	399 > 80.0		1958.739	0.252		4.26				
5	7 PFOA	413 > 369		4884.112	0.252		4.53				
6	24 13C4-PFOS	503.0 > 80	1958.739	1958.739	0.252	1.000	4.87	4.89	28.7	114	100.0
7	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
8	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
9	24 13C4-PFOS	503.0 > 80	1958.739	1958.739	0.252	1.000	4.87	4.89	28.7	114	100.0
10	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
11	-1										
12	8 PFNA	463 > 419		4884.112	0.252		4.85				
13	9 PFOS	498.9 > 80.0		1958.739	0.252		4.89				
14	11 PFDA	513 > 469		4884.112	0.252		5.11				
15	12 N-MeFOSAA	570 > 419.1		8603.447	0.252		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		8603.447	0.252		5.33				
17	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
18	24 13C4-PFOS	503.0 > 80	1958.739	1958.739	0.252	1.000	4.87	4.89	28.7	114	100.0
19	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	8603.447	8603.447	0.252	1.000	5.20	5.22	40.0	159	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	8603.447	8603.447	0.252	1.000	5.20	5.22	40.0	159	100.0
22	-1										
23	14 PFUnA	563 > 519		4884.112	0.252		5.35				
24	16 PFDaA	613 > 569		4884.112	0.252		5.55				
25	17 PFTTrDA	662.9 > 619		4884.112	0.252		5.71				
26	18 PFTeDA	712.9 > 669		4884.112	0.252		5.87				
27	19 13C2-PFHxA	315.1 > 270	3848.696	4884.112	0.252	0.759	3.68	3.68	7.88	41.2	103.9
28	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
29	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
30	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
31	23 13C2-PFOA	415 > 370	4884.112	4884.112	0.252	1.000	4.51	4.53	10.0	39.7	100.0
32	21 13C2-PFDA	515.0 > 470.0	5312.087	4884.112	0.252	1.052	5.12	5.11	10.9	41.0	103.4
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	6524.889	8603.447	0.252	0.831	5.33	5.33	30.3	145	91.3

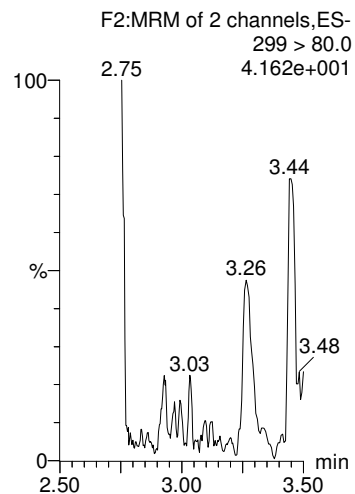
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Printed: Monday, December 17, 2018 12:38:32 Pacific Standard Time

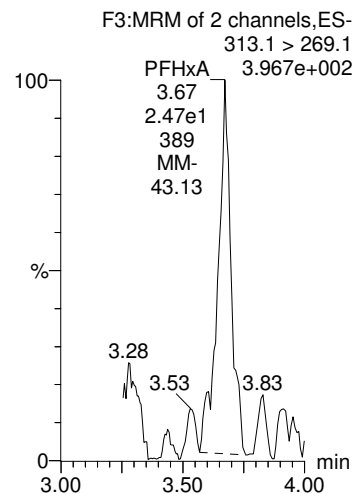
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Name: 181214P2\_73, Date: 15-Dec-2018, Time: 02:28:24, ID: 1803982-03 Behind the Base-DW-120618 0.25217, Description: Behind the Base-DW-120618

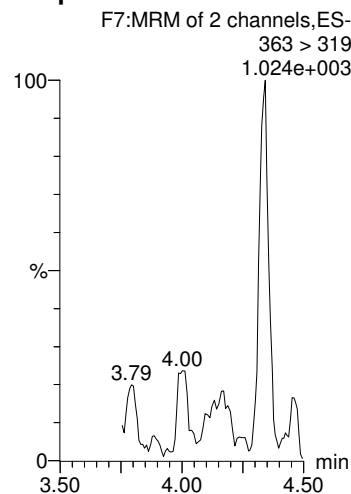
**PFBS**



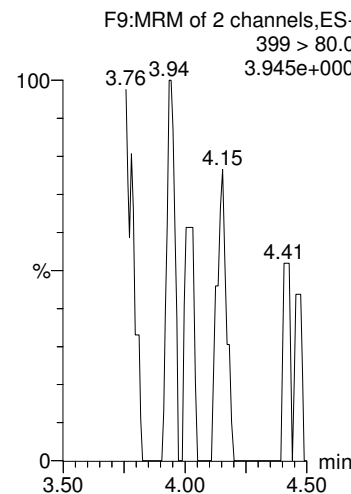
**PFHxA**



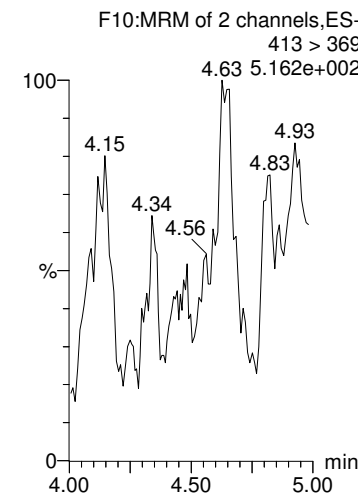
**PFHpA**



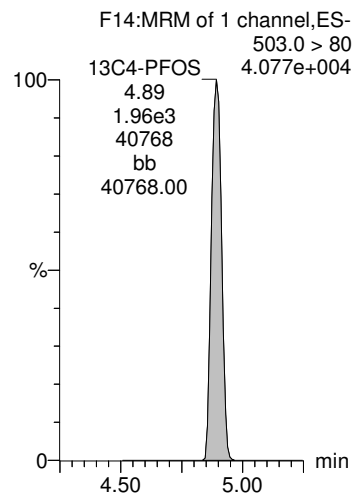
**PFHxS**



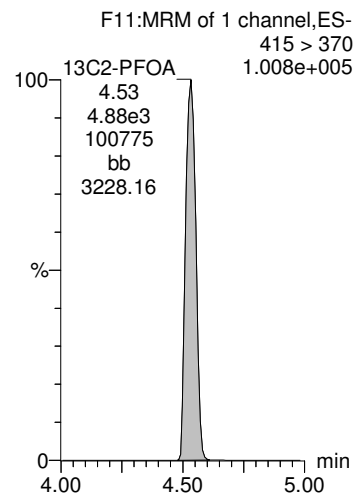
**PFOA**



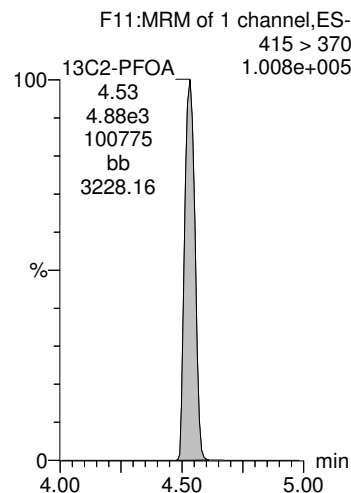
**13C4-PFOS**



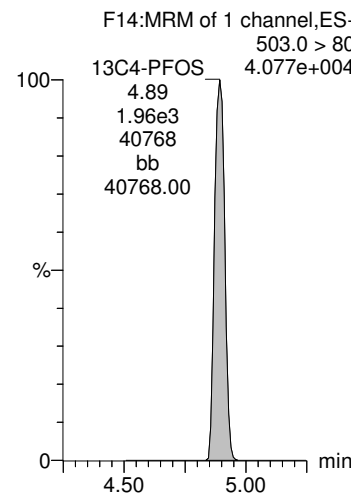
**13C2-PFOA**



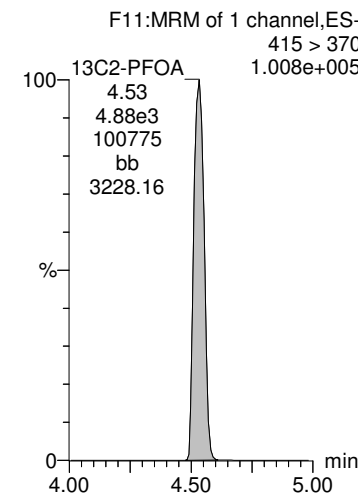
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

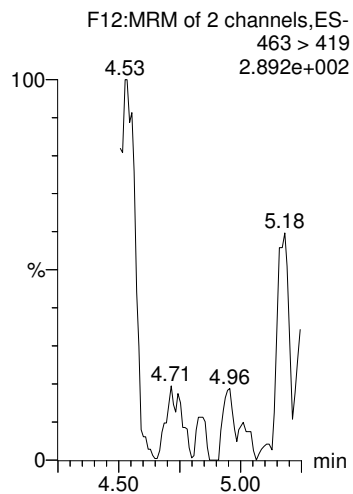


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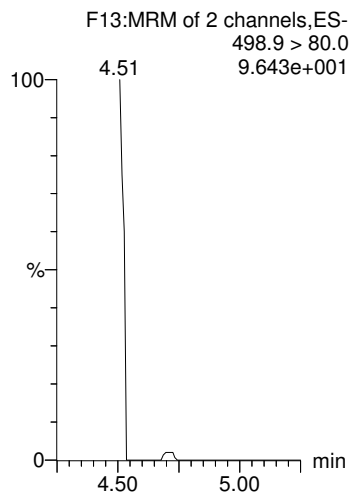
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Printed: Monday, December 17, 2018 12:38:32 Pacific Standard Time

Name: 181214P2\_73, Date: 15-Dec-2018, Time: 02:28:24, ID: 1803982-03 Behind the Base-DW-120618 0.25217, Description: Behind the Base-DW-120618

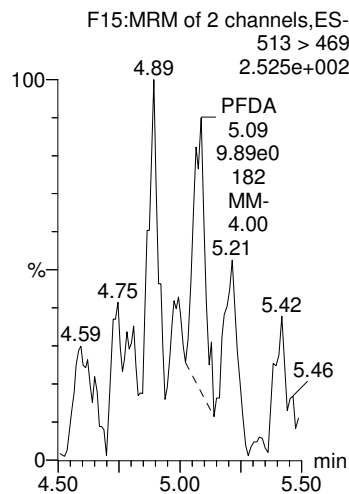
**PFNA**



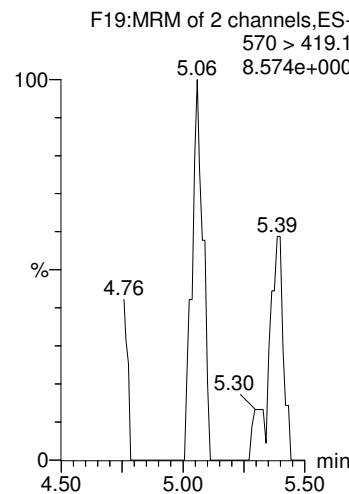
**PFOS**



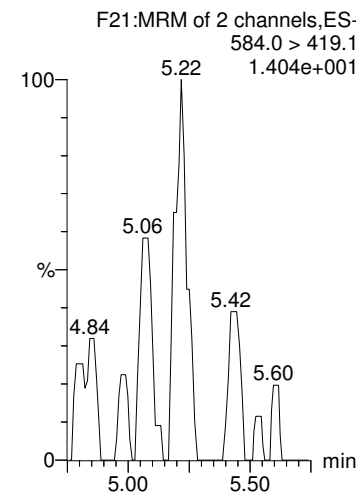
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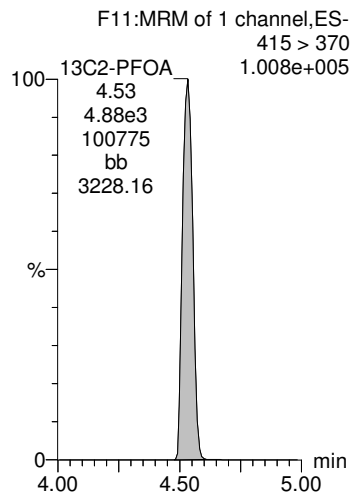
**N-MeFOSAA**



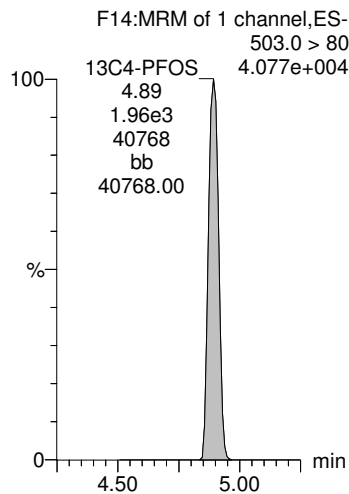
**N-EtFOSAA**



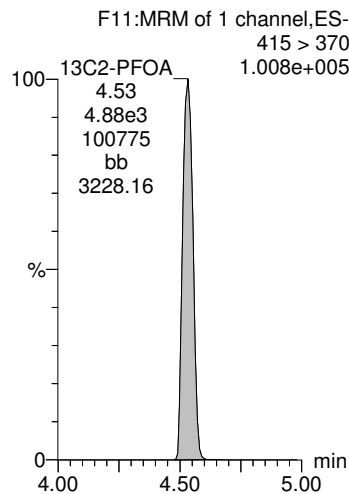
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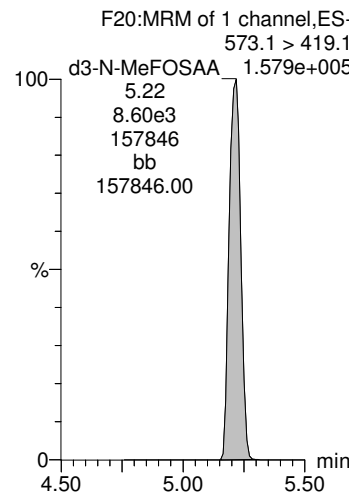
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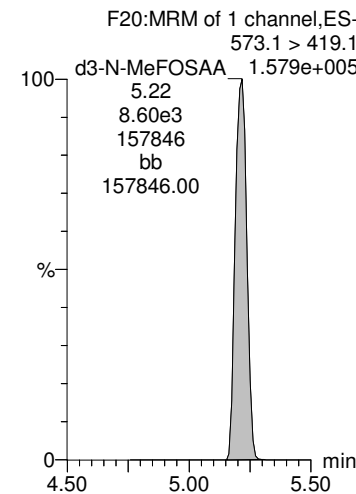
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

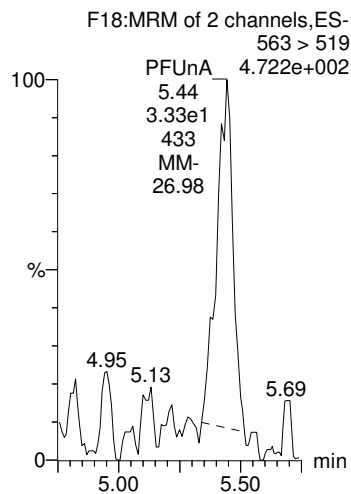


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-73.qld

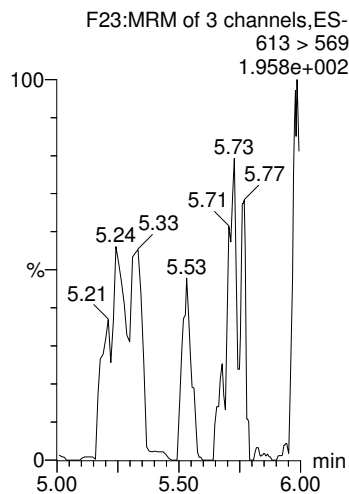
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Name: 181214P2\_73, Date: 15-Dec-2018, Time: 02:28:24, ID: 1803982-03 Behind the Base-DW-120618 0.25217, Description: Behind the Base-DW-120618

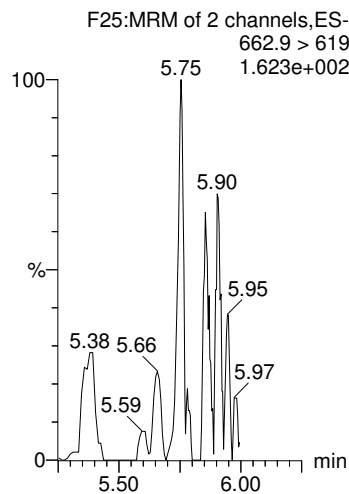
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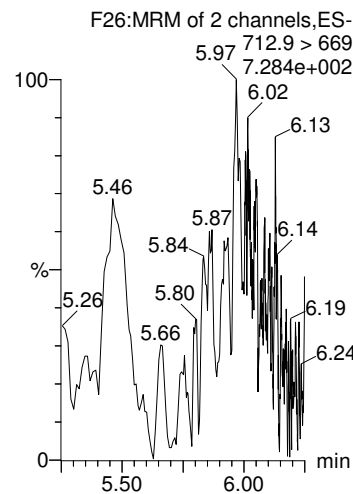
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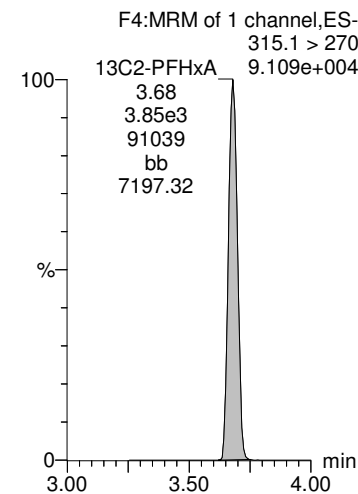
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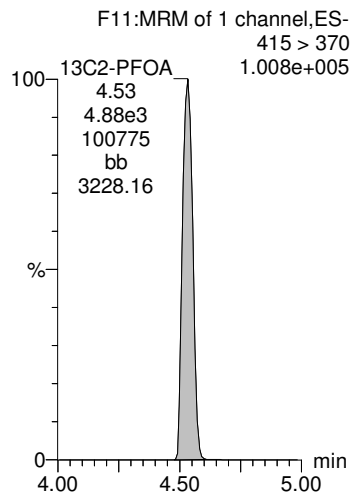
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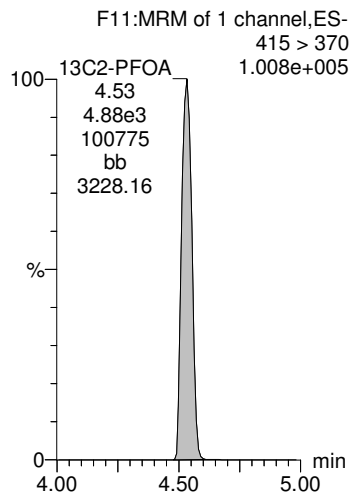
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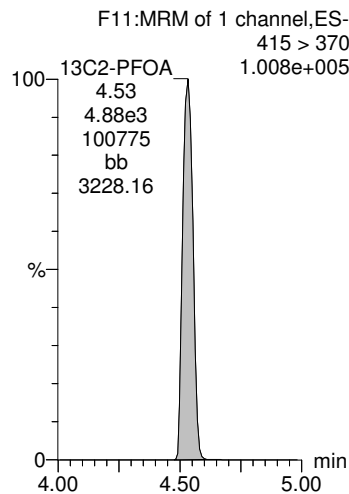
**13C2-PFOA**



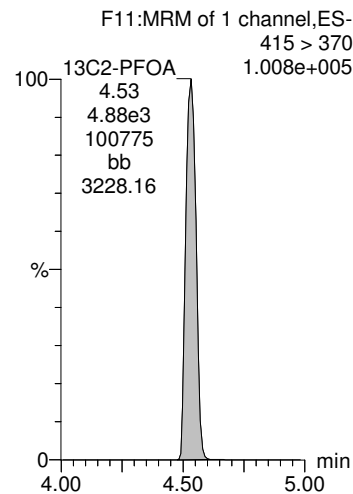
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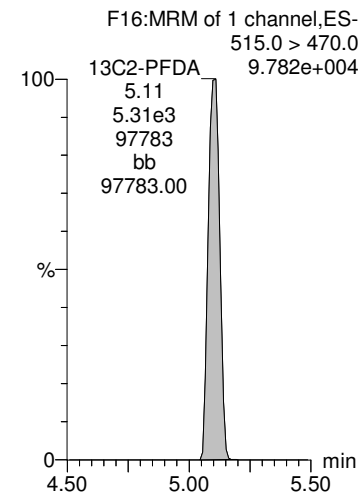
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



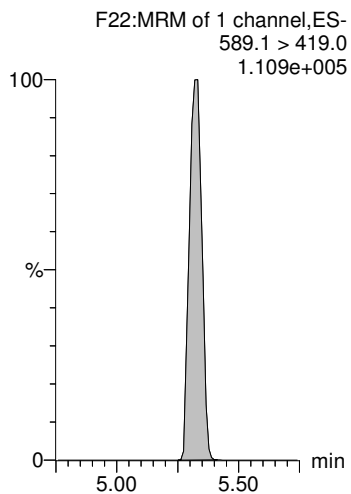
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Last Altered: Monday, December 17, 2018 12:38:08 Pacific Standard Time

Printed: Monday, December 17, 2018 12:38:32 Pacific Standard Time

Name: 181214P2\_73, Date: 15-Dec-2018, Time: 02:28:24, ID: 1803982-03 Behind the Base-DW-120618 0.25217, Description: Behind the Base-DW-120618

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-74.qld

Last Altered: Monday, December 17, 2018 12:43:23 Pacific Standard Time

Printed: Monday, December 17, 2018 12:43:58 Pacific Standard Time

Name: 181214P2\_74, Date: 15-Dec-2018, Time: 02:39:35, ID: 1803982-04 Behind the Base-FB-120618 0.25284, Description: Behind the Base-FB-120618

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		2069.110	0.253		3.36				
2	2 PFHxA	313.1 > 269.1		5283.747	0.253		3.68				
3	4 PFHpA	363 > 319		5283.747	0.253		4.15				
4	6 PFHxS	399 > 80.0		2069.110	0.253		4.26				
5	7 PFOA	413 > 369		5283.747	0.253		4.53				
6	24 13C4-PFOS	503.0 > 80	2069.110	2069.110	0.253	1.000	4.87	4.89	28.7	114	100.0
7	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
8	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
9	24 13C4-PFOS	503.0 > 80	2069.110	2069.110	0.253	1.000	4.87	4.89	28.7	114	100.0
10	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
11	-1										
12	8 PFNA	463 > 419		5283.747	0.253		4.85				
13	9 PFOS	498.9 > 80.0		2069.110	0.253		4.89				
14	11 PFDA	513 > 469		5283.747	0.253		5.11				
15	12 N-MeFOSAA	570 > 419.1		9847.007	0.253		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		9847.007	0.253		5.33				
17	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
18	24 13C4-PFOS	503.0 > 80	2069.110	2069.110	0.253	1.000	4.87	4.89	28.7	114	100.0
19	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9847.007	9847.007	0.253	1.000	5.20	5.22	40.0	158	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9847.007	9847.007	0.253	1.000	5.20	5.22	40.0	158	100.0
22	-1										
23	14 PFUnA	563 > 519		5283.747	0.253		5.35				
24	16 PFDaA	613 > 569		5283.747	0.253		5.55				
25	17 PFTTrDA	662.9 > 619		5283.747	0.253		5.71				
26	18 PFTeDA	712.9 > 669		5283.747	0.253		5.87				
27	19 13C2-PFHxA	315.1 > 270	4061.409	5283.747	0.253	0.759	3.68	3.68	7.69	40.1	101.3
28	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
29	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
30	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
31	23 13C2-PFOA	415 > 370	5283.747	5283.747	0.253	1.000	4.51	4.53	10.0	39.6	100.0
32	21 13C2-PFDA	515.0 > 470.0	5502.849	5283.747	0.253	1.052	5.12	5.11	10.4	39.2	99.0
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	6700.645	9847.007	0.253	0.831	5.33	5.33	27.2	130	81.9



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-74.qld

Last Altered: Monday, December 17, 2018 12:43:23 Pacific Standard Time

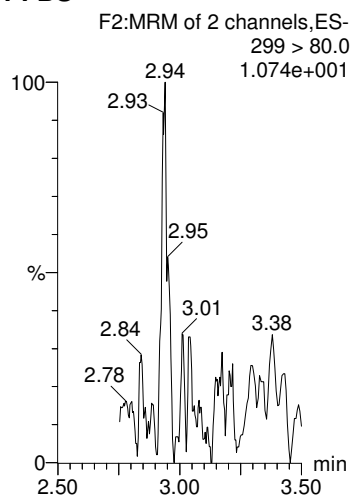
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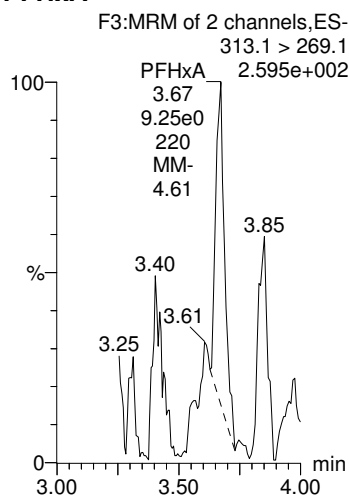
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Name: 181214P2\_74, Date: 15-Dec-2018, Time: 02:39:35, ID: 1803982-04 Behind the Base-FB-120618 0.25284, Description: Behind the Base-FB-120618

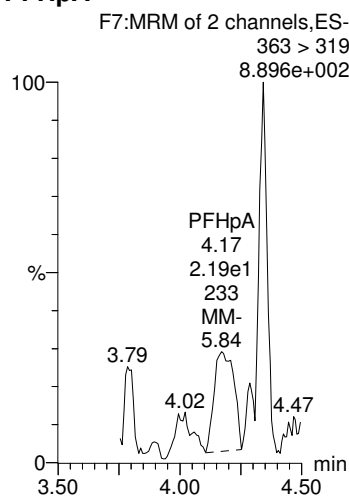
**PFBS**



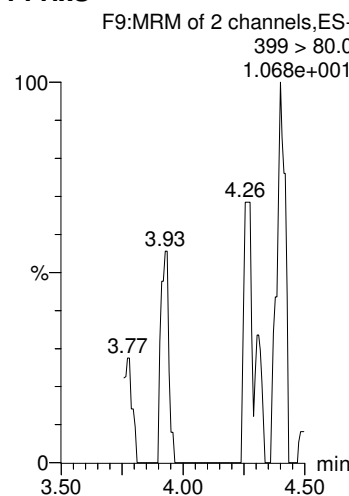
**PFHxA**



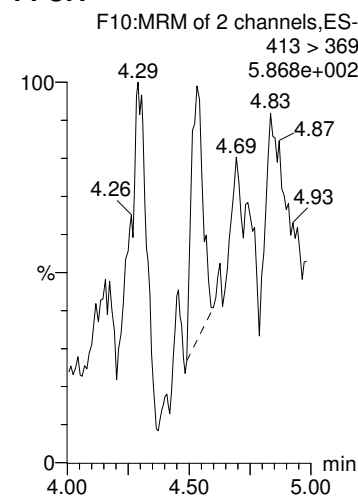
**PFHpA**



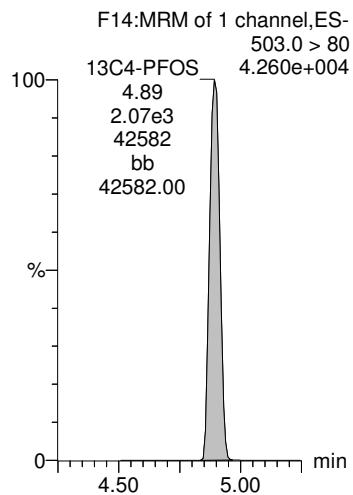
**PFHxS**



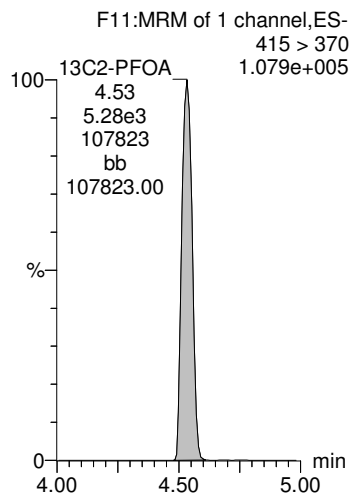
**PFOA**



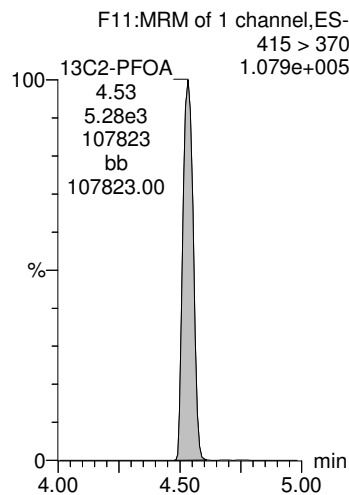
**13C4-PFOS**



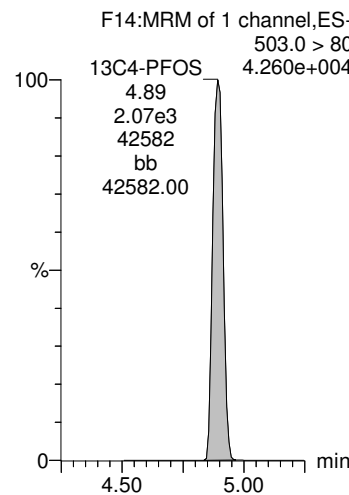
**13C2-PFOA**



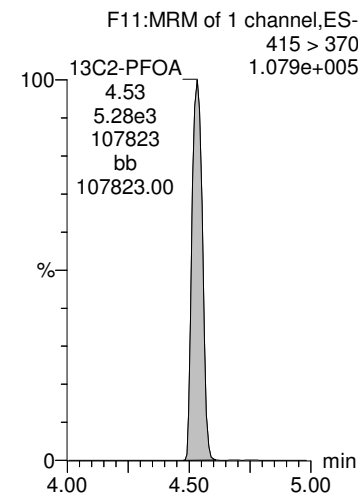
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

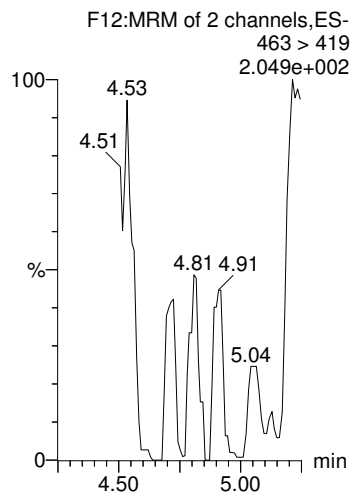


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-74.qld

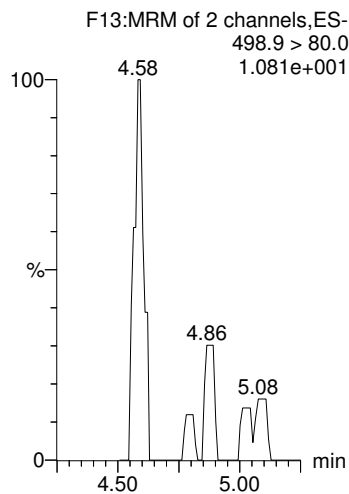
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Printed: Monday, December 17, 2018 12:43:58 Pacific Standard Time

Name: 181214P2\_74, Date: 15-Dec-2018, Time: 02:39:35, ID: 1803982-04 Behind the Base-FB-120618 0.25284, Description: Behind the Base-FB-120618

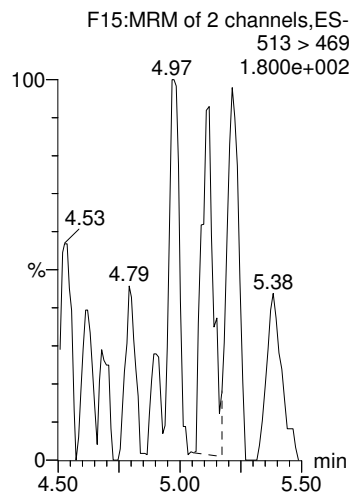
**PFNA**



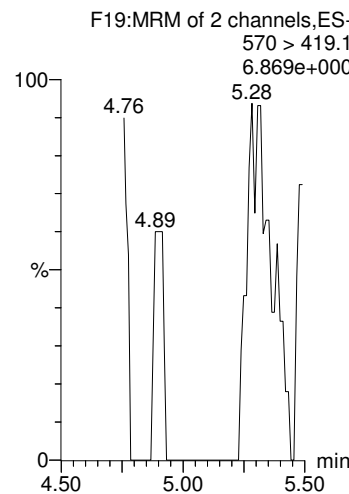
**PFOS**



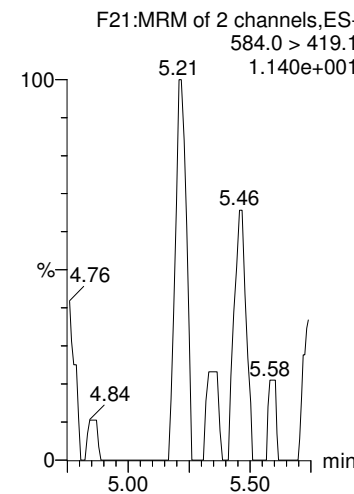
**PFDA**



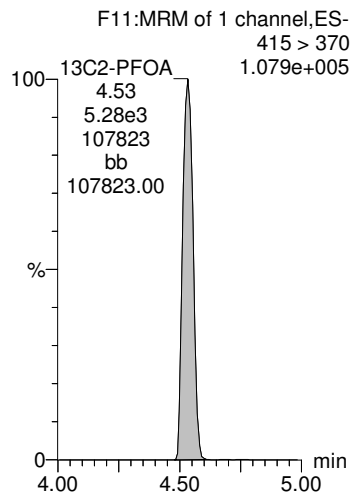
**N-MeFOSAA**



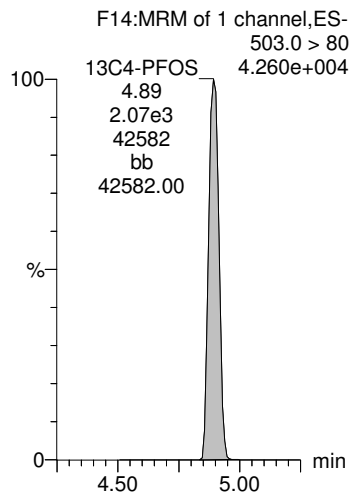
**N-EtFOSAA**



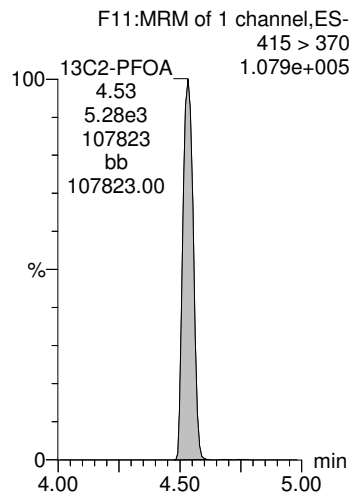
**13C2-PFOA**



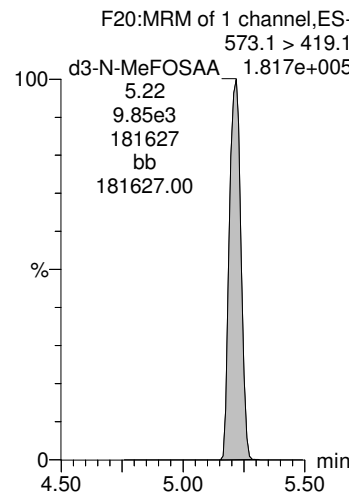
**13C4-PFOS**



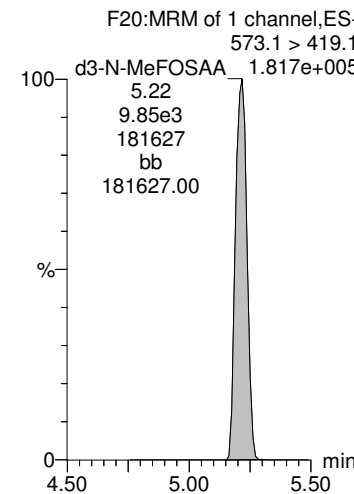
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

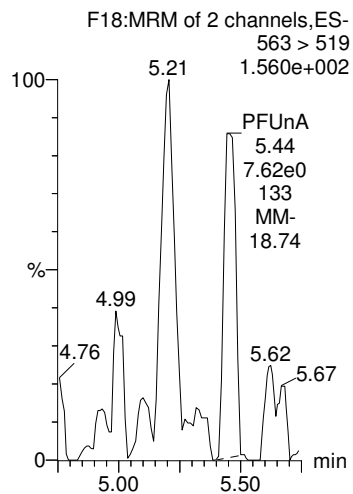


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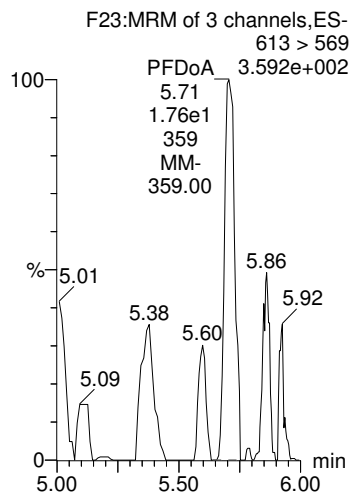
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Printed: Monday, December 17, 2018 12:43:58 Pacific Standard Time

Name: 181214P2\_74, Date: 15-Dec-2018, Time: 02:39:35, ID: 1803982-04 Behind the Base-FB-120618 0.25284, Description: Behind the Base-FB-120618

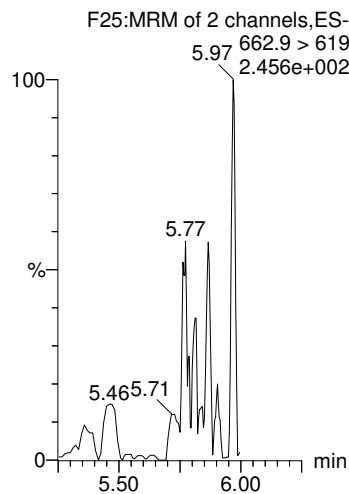
**PFUnA**



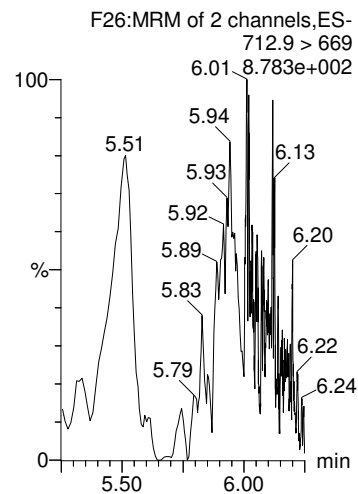
**PFDaA**



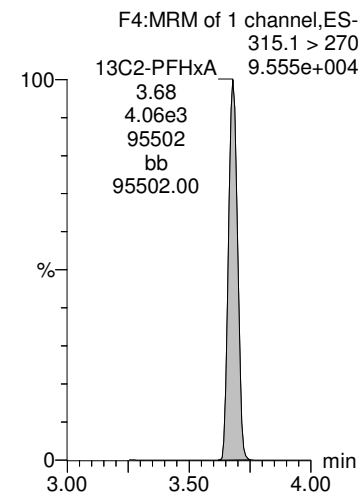
**PFTrDA**



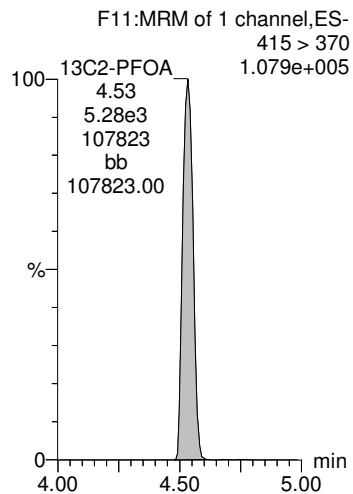
**PFTeDA**



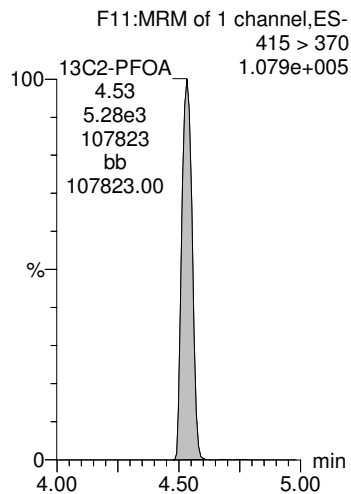
**13C2-PFHxA**



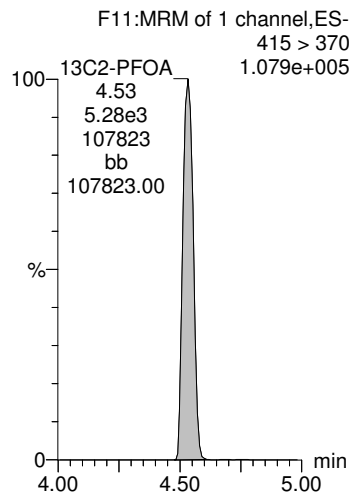
**13C2-PFOA**



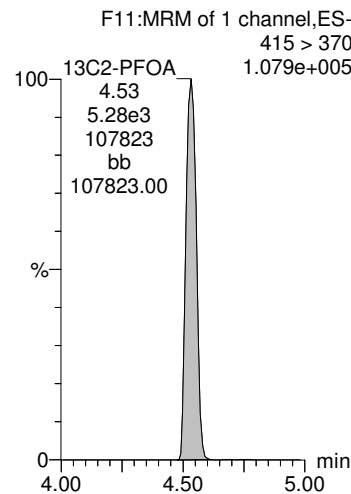
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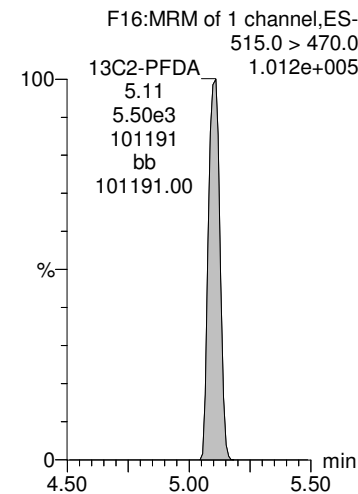
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



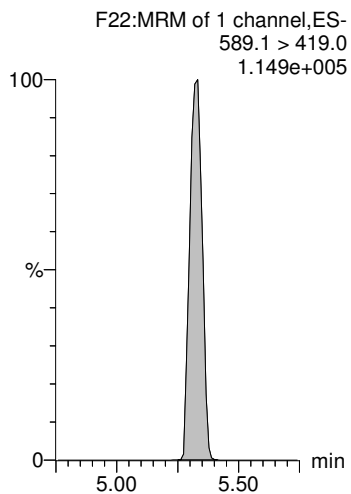
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Last Altered: Monday, December 17, 2018 12:43:23 Pacific Standard Time

Printed: Monday, December 17, 2018 12:43:58 Pacific Standard Time

Name: 181214P2\_74, Date: 15-Dec-2018, Time: 02:39:35, ID: 1803982-04 Behind the Base-FB-120618 0.25284, Description: Behind the Base-FB-120618

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-75.qld

Last Altered: Monday, December 17, 2018 12:45:31 Pacific Standard Time

Printed: Monday, December 17, 2018 12:45:51 Pacific Standard Time

Name: 181214P2\_75, Date: 15-Dec-2018, Time: 02:50:46, ID: 1803982-05 Shooting Range1-DW-120618 0.23899, Description: Shooting Range1-DW-120618

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	493.269	2259.464	0.239		3.36	3.38	6.27	34.2	
2	2 PFHxA	313.1 > 269.1	14250.450	4862.087	0.239		3.68	3.68	29.3	213	
3	4 PFHpA	363 > 319	9344.400	4862.087	0.239		4.15	4.16	19.2	87.2	
4	6 PFHxS	399 > 80.0	5991.881	2259.464	0.239		4.26	4.27	76.1	362	
5	7 PFOA	413 > 369	26307.279	4862.087	0.239		4.53	4.53	54.1	246	
6	24 13C4-PFOS	503.0 > 80	2259.464	2259.464	0.239	1.000	4.87	4.89	28.7	120	100.0
7	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
8	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
9	24 13C4-PFOS	503.0 > 80	2259.464	2259.464	0.239	1.000	4.87	4.89	28.7	120	100.0
10	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
11	-1										
12	8 PFNA	463 > 419	2109.707	4862.087	0.239		4.85	4.84	4.34	21.7	
13	9 PFOS	498.9 > 80.0	6341.092	2259.464	0.239		4.89	4.89	80.5	375	
14	11 PFDA	513 > 469		4862.087	0.239		5.11				
15	12 N-MeFOSAA	570 > 419.1		9216.666	0.239		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		9216.666	0.239		5.32				
17	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
18	24 13C4-PFOS	503.0 > 80	2259.464	2259.464	0.239	1.000	4.87	4.89	28.7	120	100.0
19	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9216.666	9216.666	0.239	1.000	5.20	5.22	40.0	167	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9216.666	9216.666	0.239	1.000	5.20	5.22	40.0	167	100.0
22	-1										
23	14 PFUnA	563 > 519		4862.087	0.239		5.35				
24	16 PFDaA	613 > 569		4862.087	0.239		5.55				
25	17 PFTTrDA	662.9 > 619		4862.087	0.239		5.71				
26	18 PFTeDA	712.9 > 669		4862.087	0.239		5.87				
27	19 13C2-PFHxA	315.1 > 270	4115.207	4862.087	0.239	0.759	3.68	3.68	8.46	46.7	111.6
28	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
29	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
30	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
31	23 13C2-PFOA	415 > 370	4862.087	4862.087	0.239	1.000	4.51	4.53	10.0	41.8	100.0
32	21 13C2-PFDA	515.0 > 470.0	5433.604	4862.087	0.239	1.052	5.12	5.11	11.2	44.5	106.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	7964.757	9216.666	0.239	0.831	5.33	5.32	34.6	174	104.0

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-75.qld

Last Altered: Monday, December 17, 2018 12:45:31 Pacific Standard Time

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Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_75, Date: 15-Dec-2018, Time: 02:50:46, ID: 1803982-05 Shooting Range1-DW-120618 0.23899, Description: Shooting Range1-DW-120618

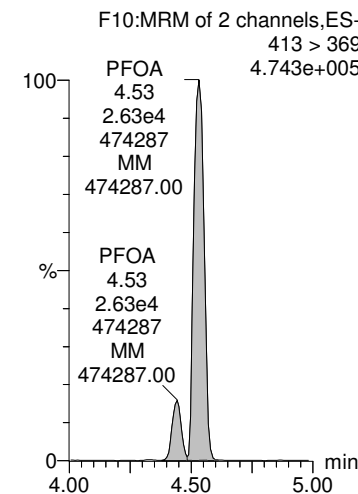
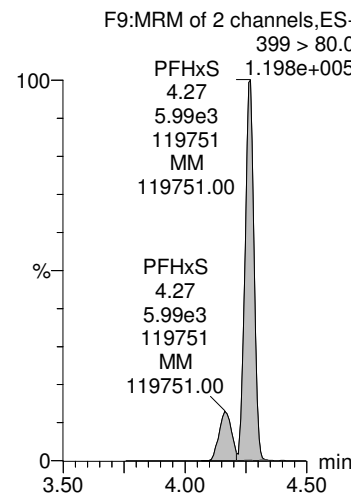
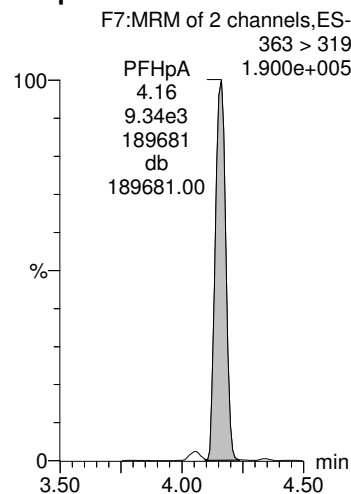
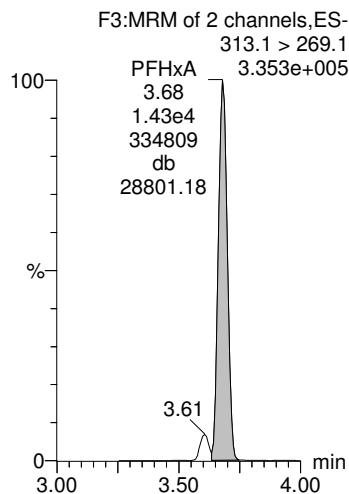
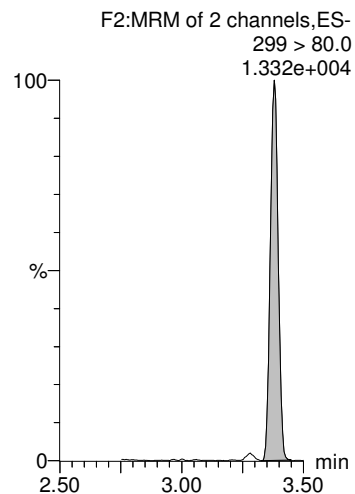
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



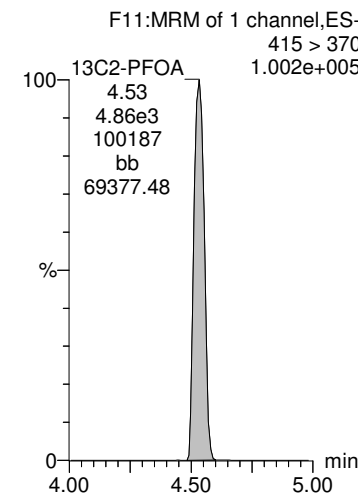
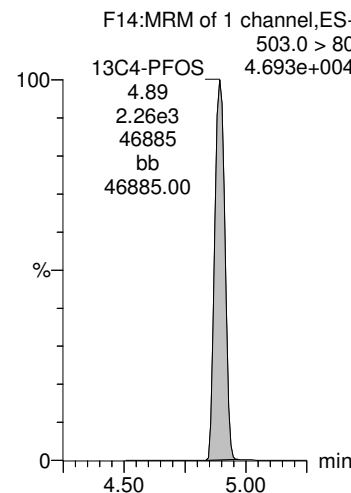
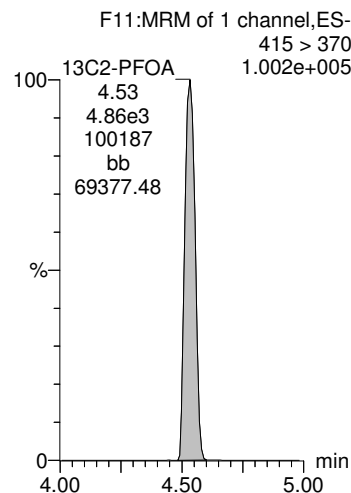
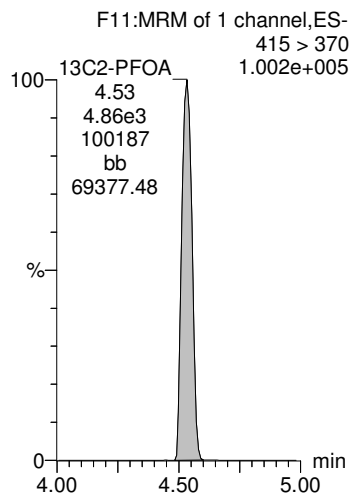
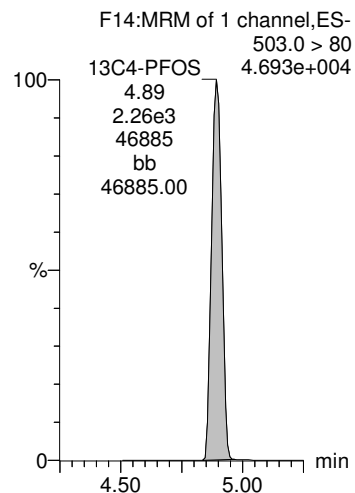
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**



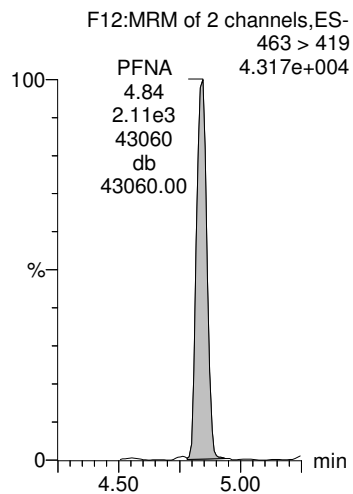
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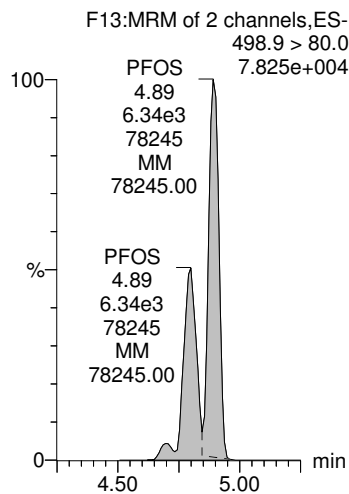
Printed: Monday, December 17, 2018 12:45:51 Pacific Standard Time

Name: 181214P2\_75, Date: 15-Dec-2018, Time: 02:50:46, ID: 1803982-05 Shooting Range1-DW-120618 0.23899, Description: Shooting Range1-DW-120618

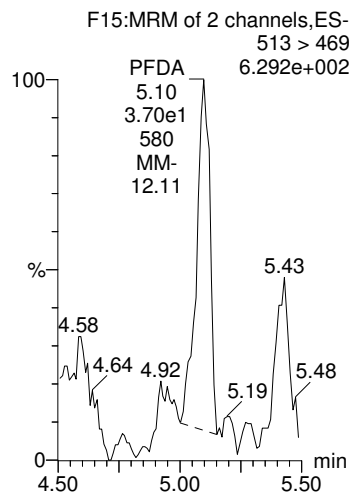
**PFNA**



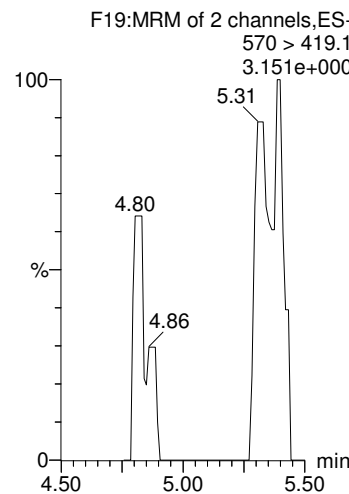
**PFOS**



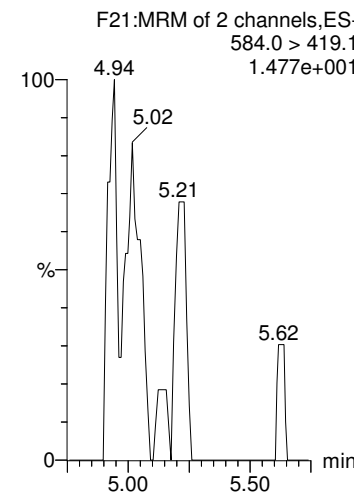
**PFDA**



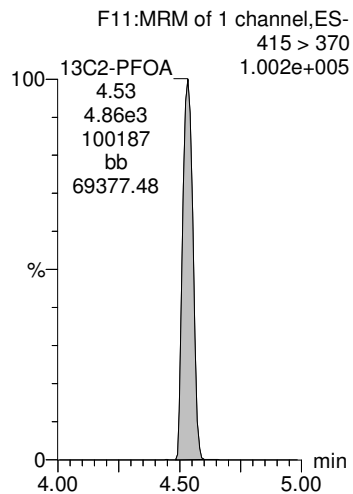
**N-MeFOSAA**



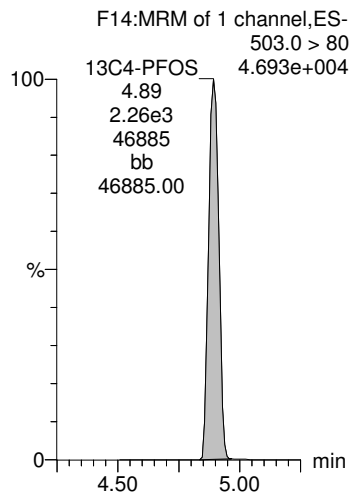
**N-EtFOSAA**



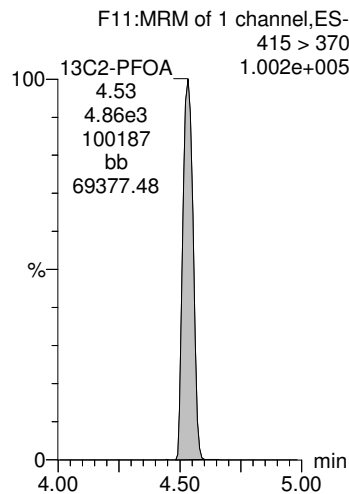
**13C2-PFOA**



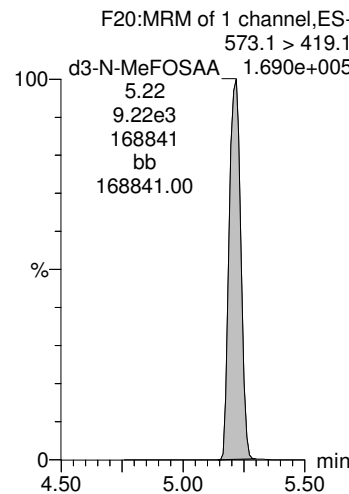
**13C4-PFOS**



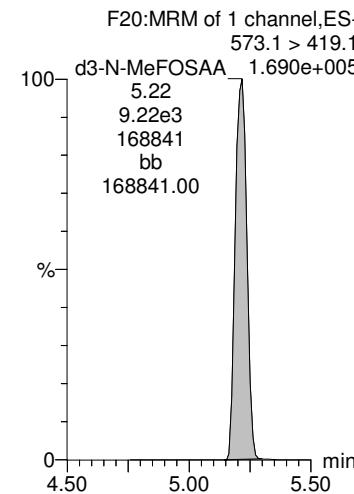
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

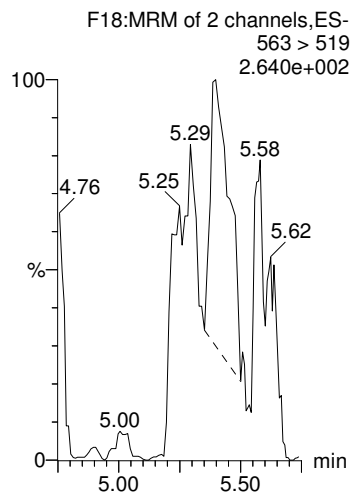


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-75.qld

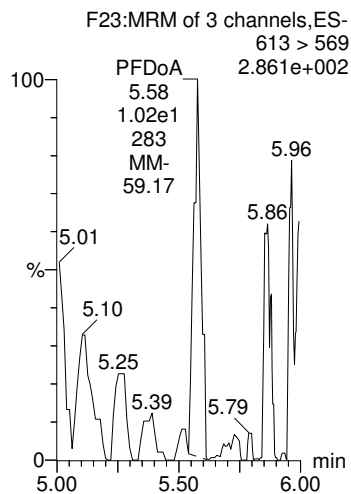
Last Altered: Monday, December 17, 2018 12:45:31 Pacific Standard Time  
Printed: Monday, December 17, 2018 12:45:51 Pacific Standard Time

Name: 181214P2\_75, Date: 15-Dec-2018, Time: 02:50:46, ID: 1803982-05 Shooting Range1-DW-120618 0.23899, Description: Shooting Range1-DW-120618

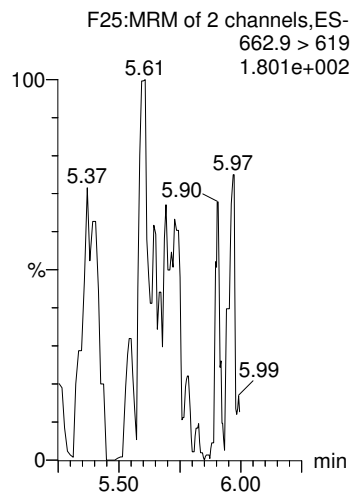
**PFUnA**



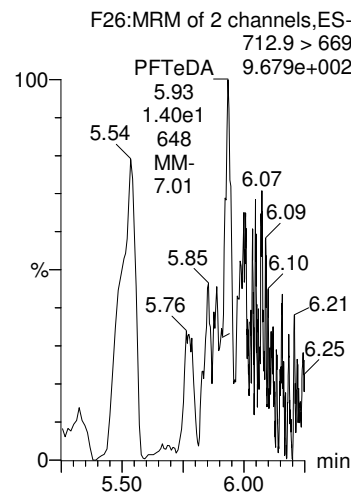
**PFDoA**



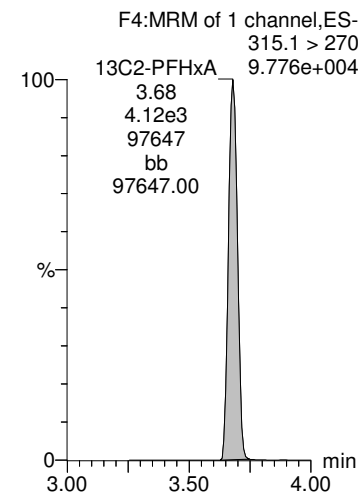
**PFTrDA**



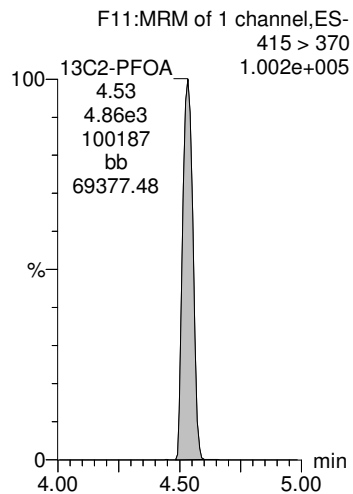
**PFTeDA**



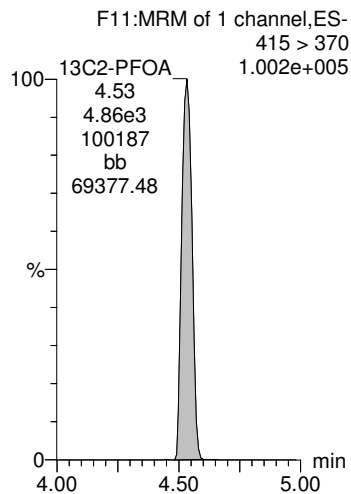
**13C2-PFHxA**



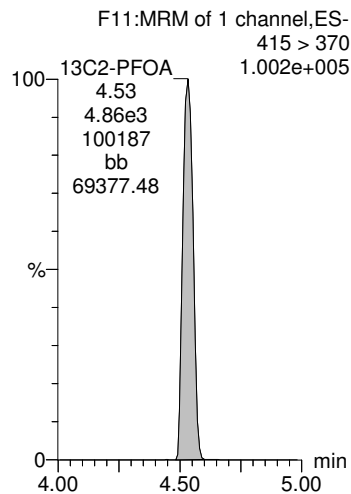
**13C2-PFOA**



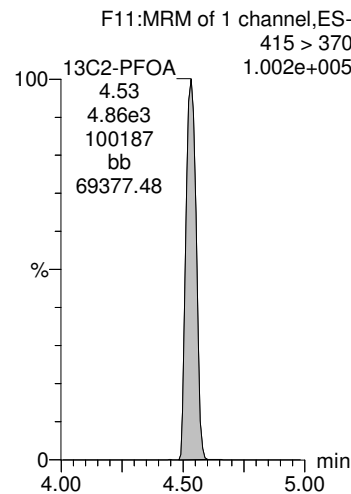
**13C2-PFOA**



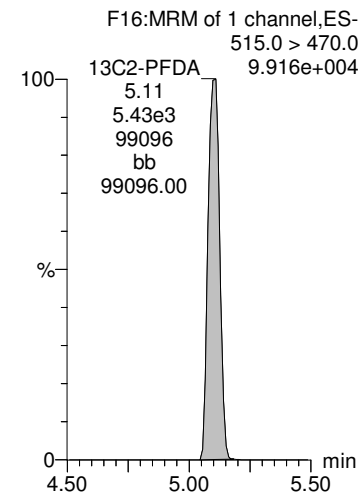
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**





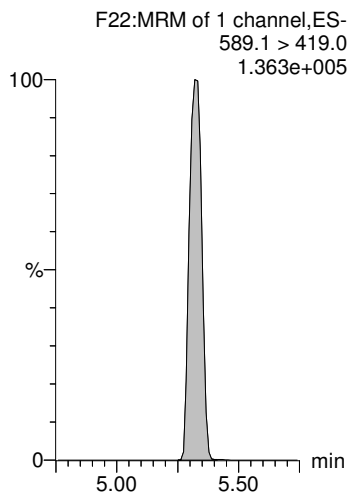
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Last Altered: Monday, December 17, 2018 12:45:31 Pacific Standard Time

Printed: Monday, December 17, 2018 12:45:51 Pacific Standard Time

Name: 181214P2\_75, Date: 15-Dec-2018, Time: 02:50:46, ID: 1803982-05 Shooting Range1-DW-120618 0.23899, Description: Shooting Range1-DW-120618

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-68.qld

E : SEE DILUTION

Last Altered: Monday, December 17, 2018 12:13:32 Pacific Standard Time

Printed: Monday, December 17, 2018 12:17:05 Pacific Standard Time

Name: 181214P2\_68, Date: 15-Dec-2018, Time: 01:32:30, ID: B8L0076-MS1 LFSM 0.25052, Description: LFSM

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	747.151	2096.815	0.251		3.36	3.38	10.2	53.2	
2	2 PFHxA	313.1 > 269.1	17018.539	4877.145	0.251		3.68	3.68	34.9	242	
3	4 PFHpA	363 > 319	15229.467	4877.145	0.251		4.15	4.16	31.2	135	
4	6 PFHxS	399 > 80.0	9890.389	2096.815	0.251		4.26	4.27	135	639	E
5	7 PFOA	413 > 369	46424.320	4877.145	0.251		4.53	4.53	95.2	413	E
6	24 13C4-PFOS	503.0 > 80	2096.815	2096.815	0.251	1.000	4.87	4.89	28.7	115	100.0
7	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
8	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
9	24 13C4-PFOS	503.0 > 80	2096.815	2096.815	0.251	1.000	4.87	4.89	28.7	115	100.0
10	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
11	-1										
12	8 PFNA	463 > 419	6103.979	4877.145	0.251		4.85	4.84	12.5	59.6	
13	9 PFOS	498.9 > 80.0	11573.490	2096.815	0.251		4.89	4.89	158	703	E
14	11 PFDA	513 > 469	2176.907	4877.145	0.251		5.11	5.11	4.46	21.4	
15	12 N-MeFOSAA	570 > 419.1	949.844	9498.707	0.251		5.22	5.22	4.00	17.5	
16	13 N-EtFOSAA	584.0 > 419.1	678.443	9498.707	0.251		5.33	5.33	2.86	20.8	
17	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
18	24 13C4-PFOS	503.0 > 80	2096.815	2096.815	0.251	1.000	4.87	4.89	28.7	115	100.0
19	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	9498.707	9498.707	0.251	1.000	5.20	5.22	40.0	160	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	9498.707	9498.707	0.251	1.000	5.20	5.22	40.0	160	100.0
22	-1										
23	14 PFUnA	563 > 519	1589.960	4877.145	0.251		5.35	5.33	3.26	15.0	
24	16 PFDaA	613 > 569	2907.553	4877.145	0.251		5.55	5.53	5.96	19.3	
25	17 PFTrDA	662.9 > 619	3115.533	4877.145	0.251		5.71	5.70	6.39	19.2	
26	18 PFTeDA	712.9 > 669	2934.623	4877.145	0.251		5.87	5.85	6.02	18.1	
27	19 13C2-PFHxA	315.1 > 270	3835.876	4877.145	0.251	0.759	3.68	3.68	7.87	41.4	103.7
28	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
29	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
30	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
31	23 13C2-PFOA	415 > 370	4877.145	4877.145	0.251	1.000	4.51	4.53	10.0	39.9	100.0
32	21 13C2-PFDA	515.0 > 470.0	5229.193	4877.145	0.251	1.052	5.12	5.11	10.7	40.7	102.0
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	7095.419	9498.707	0.251	0.831	5.33	5.33	29.9	144	89.9

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Last Altered: Monday, December 17, 2018 12:13:32 Pacific Standard Time

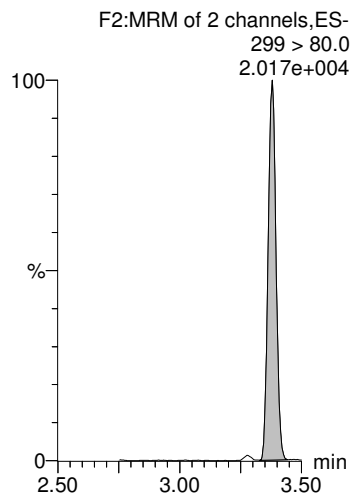
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Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

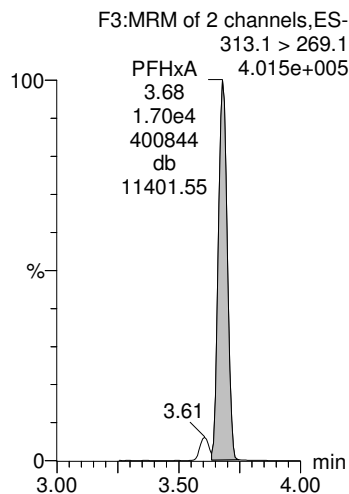
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Name: 181214P2\_68, Date: 15-Dec-2018, Time: 01:32:30, ID: B8L0076-MS1 LFSM 0.25052, Description: LFSM

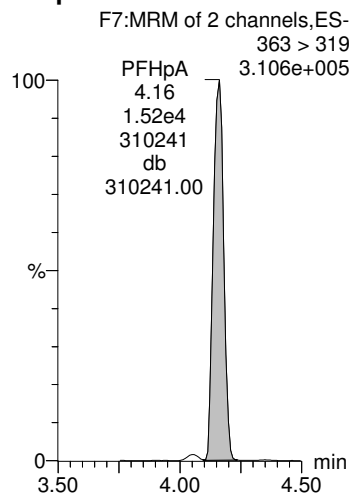
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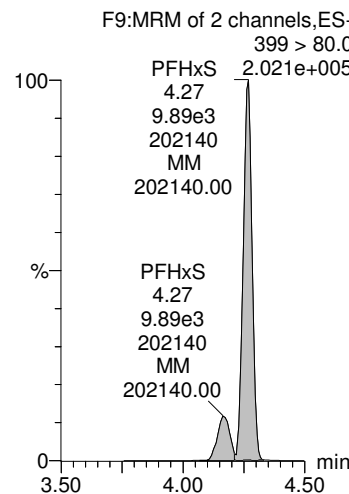
**PFHxA**



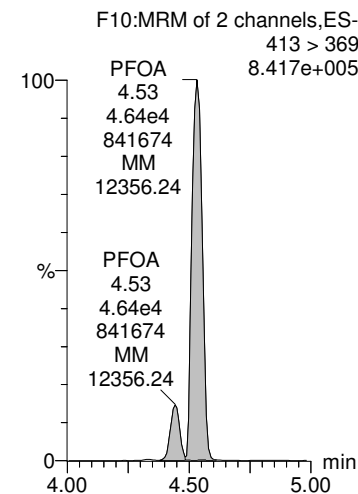
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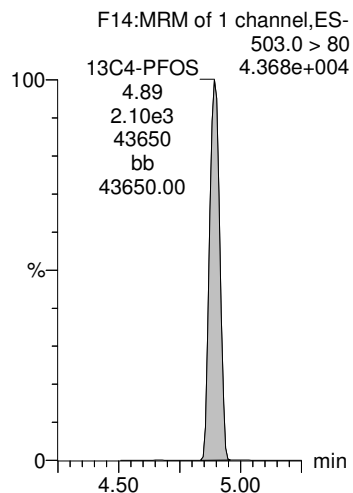
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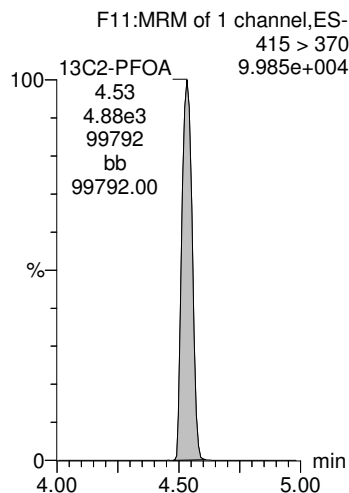
**PFOA**



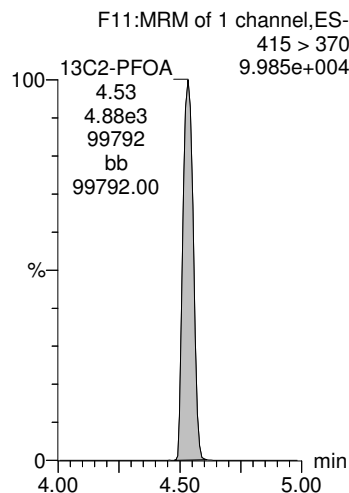
**13C4-PFOS**



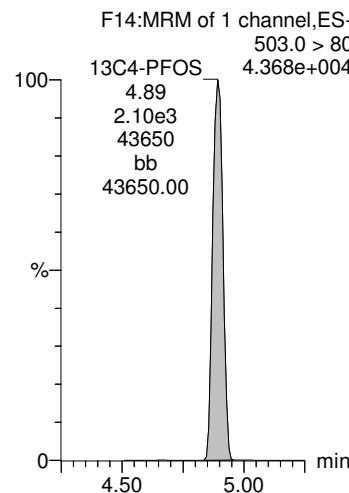
**13C2-PFOA**



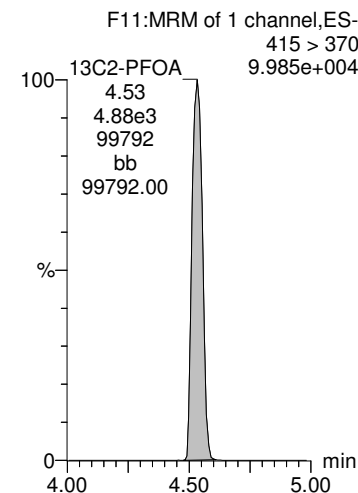
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**



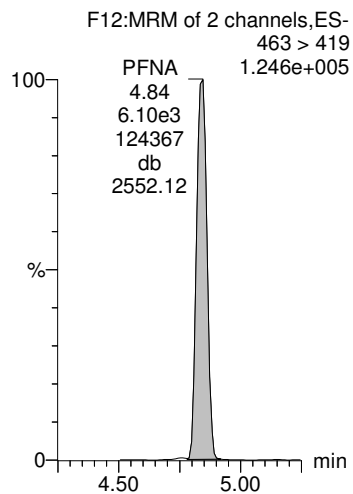
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Last Altered: Monday, December 17, 2018 12:13:32 Pacific Standard Time

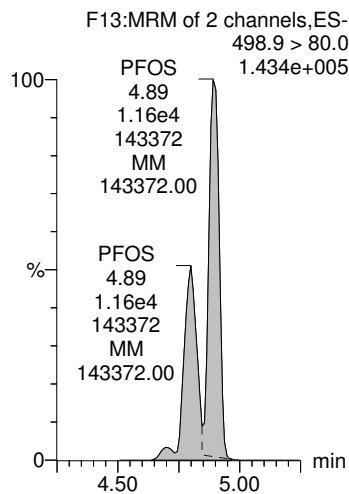
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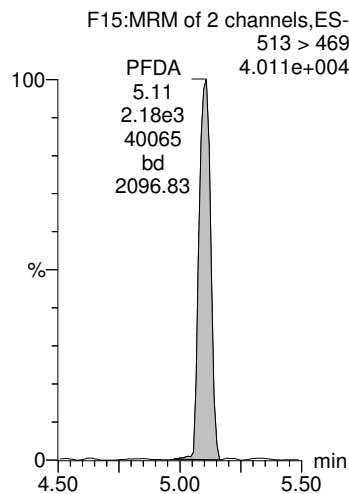
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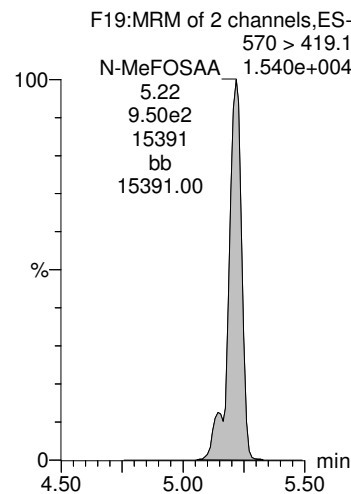
**PFOS**



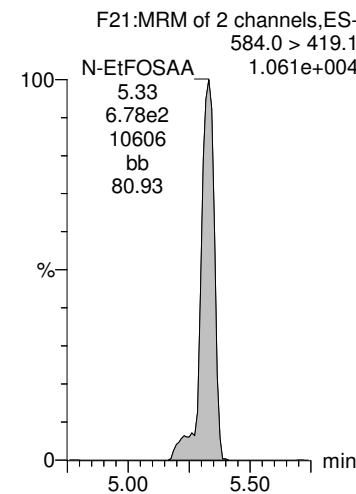
**PFDA**



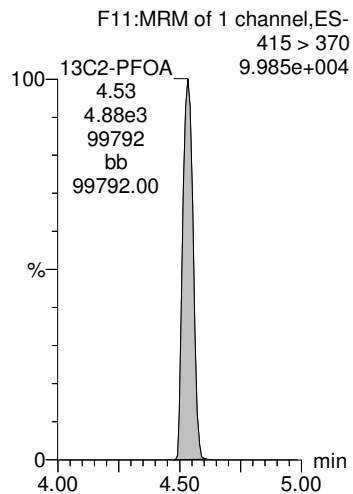
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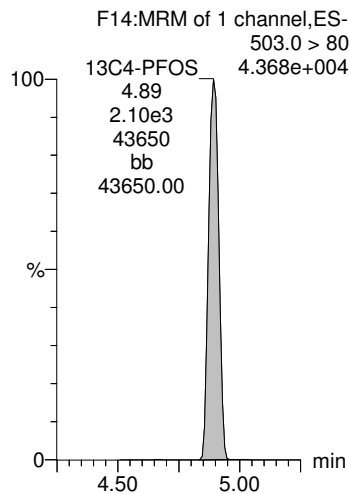
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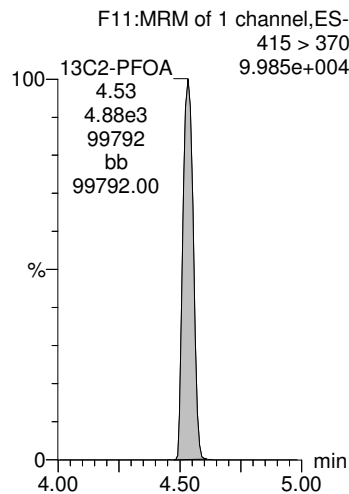
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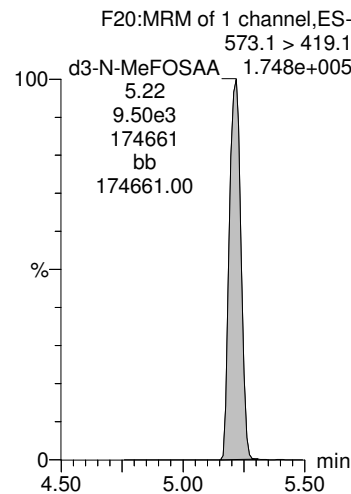
**13C4-PFOS**



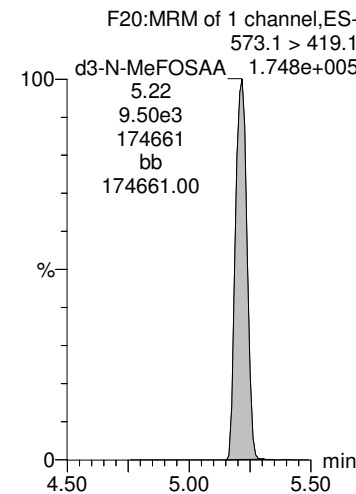
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**



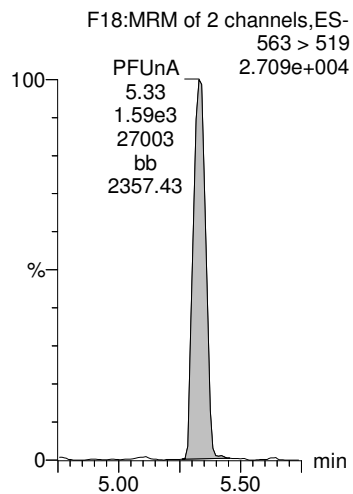
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Last Altered: Monday, December 17, 2018 12:13:32 Pacific Standard Time

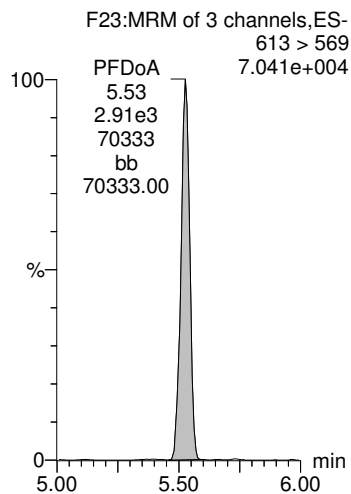
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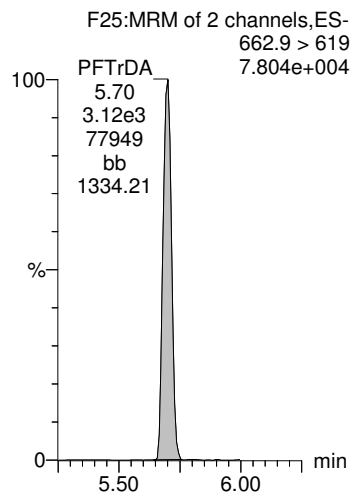
**PFUnA**



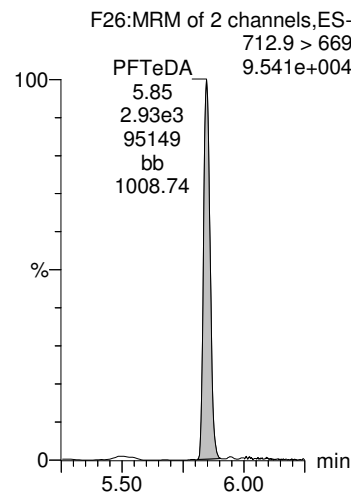
**PFDaA**



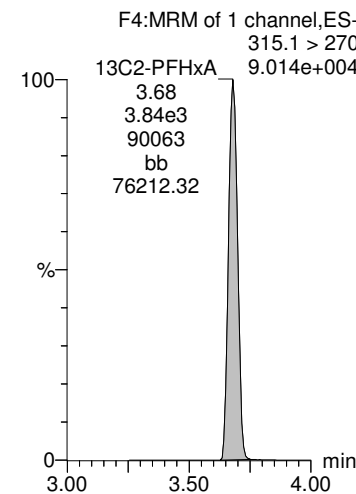
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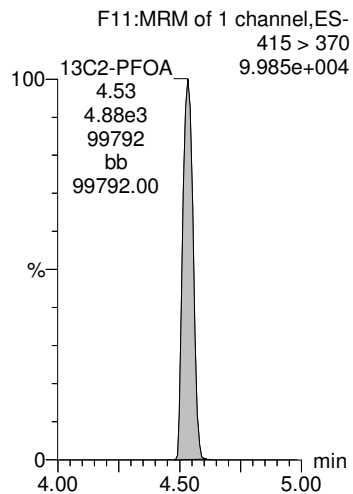
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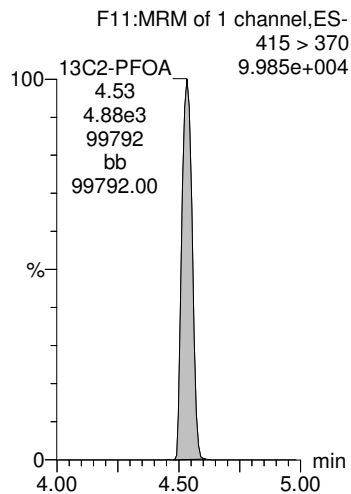
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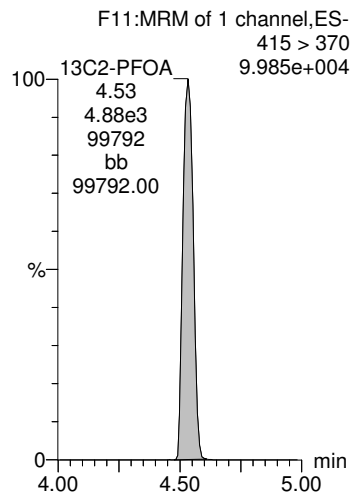
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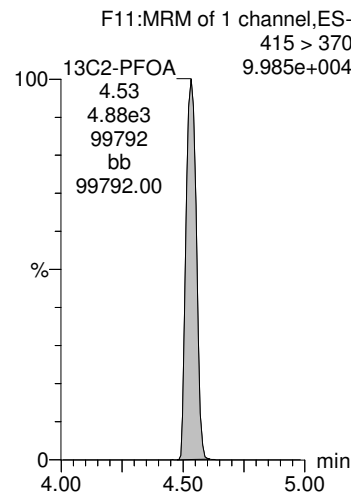
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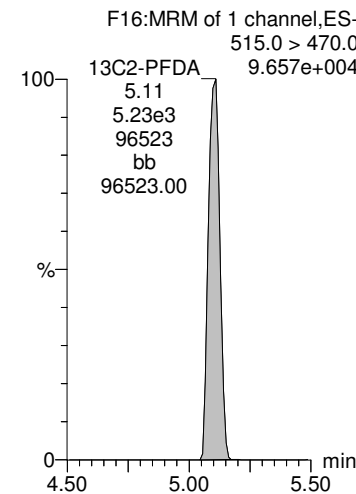
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



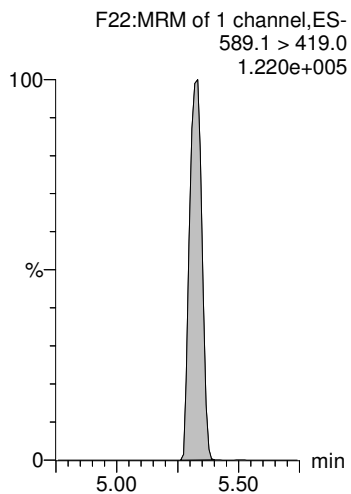
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Last Altered: Monday, December 17, 2018 12:13:32 Pacific Standard Time

Printed: Monday, December 17, 2018 12:17:05 Pacific Standard Time

Name: 181214P2\_68, Date: 15-Dec-2018, Time: 01:32:30, ID: B8L0076-MS1 LFSM 0.25052, Description: LFSM

**d5-N-EtFOSAA**



Dataset: P:\PFAS.PRO\RESULTS\181217P1\181217P1-23.qld

Last Altered: Tuesday, December 18, 2018 09:22:27 Pacific Standard Time

Printed: Tuesday, December 18, 2018 09:38:31 Pacific Standard Time

Method: P:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: P:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181217P1\_23, Date: 17-Dec-2018, Time: 19:41:11, ID: B8L0076-MS1@10X LFSM 0.25052, Description: LFSM

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	6 PFHxS	399 > 80.0	6.39e1	1.73e1	0.2505		4.22	4.21	106	490	
2	7 PFOA	413 > 369	3.37e2	2.53e1	0.2505		4.48	4.48	133	515	
3	9 PFOS	498.9 >80.0	5.36e1	1.73e1	0.2505		4.86	4.86	88.8	397	
4	19 13C2-PFHxA	315.1 > 270	2.19e1	2.53e1	0.2505	0.942	3.62	3.64	8.65	36.7	91.8
5	21 13C2-PFDA	515.0 > 470.0	3.23e1	2.53e1	0.2505	1.301	5.06	5.07	12.7	39.1	97.9
6	23 13C2-PFOA	415 > 370	2.53e1	2.53e1	0.2505	1.000	4.51	4.48	10.0	39.9	100.0
7	24 13C4-PFOS	503.0 > 80	1.73e1	1.73e1	0.2505	1.000	4.87	4.86	28.7	115	100.0

Dataset: P:\PFAS.PRO\RESULTS\181217P1\181217P1-23.qld

Last Altered: Tuesday, December 18, 2018 09:22:27 Pacific Standard Time

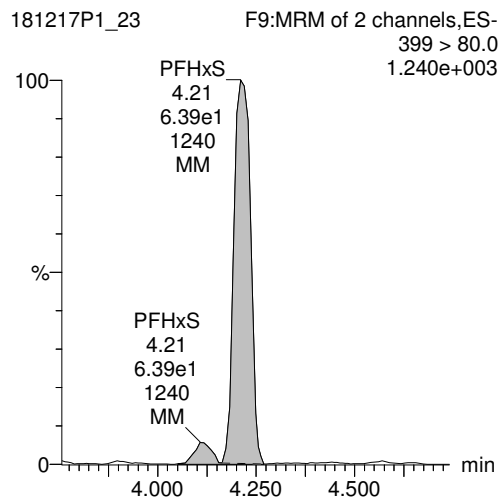
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Method: P:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

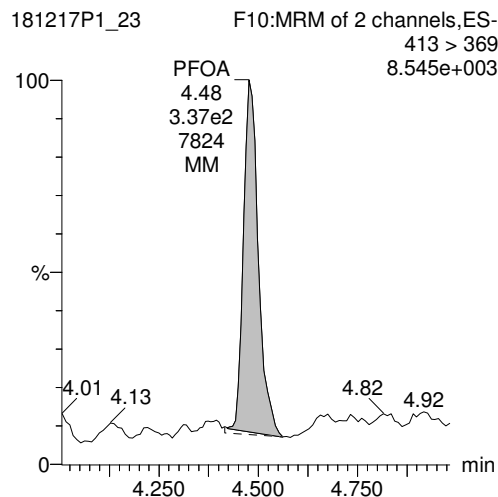
Calibration: P:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181217P1\_23, Date: 17-Dec-2018, Time: 19:41:11, ID: B8L0076-MS1@10X LFSM 0.25052, Description: LFSM

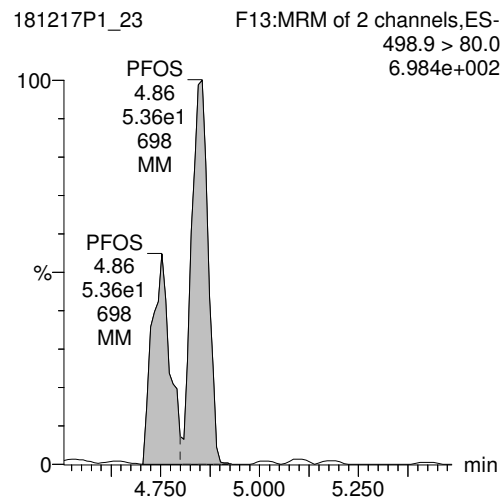
**PFHxS**



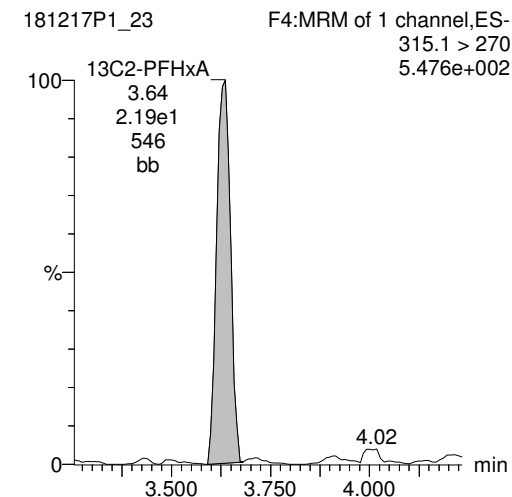
**PFOA**



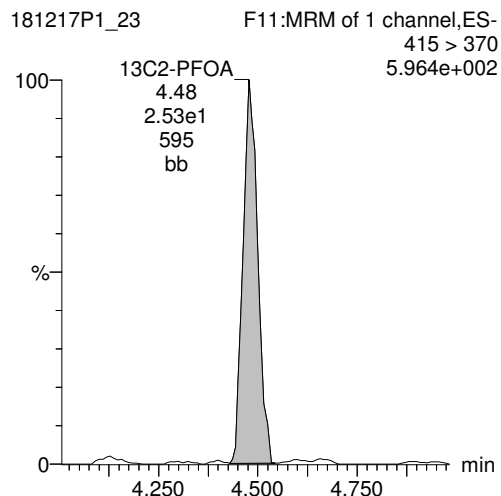
**PFOS**



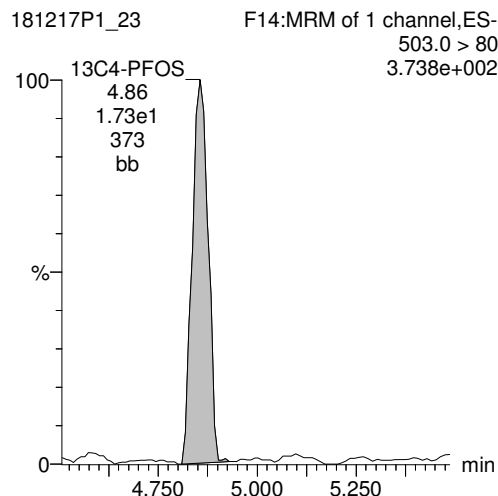
**13C2-PFHxA**



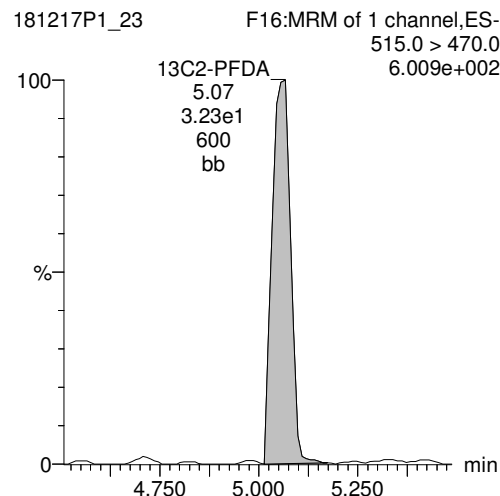
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**





Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-69.qld

Last Altered: Monday, December 17, 2018 12:19:37 Pacific Standard Time

Printed: Monday, December 17, 2018 12:20:31 Pacific Standard Time

Name: 181214P2\_69, Date: 15-Dec-2018, Time: 01:43:41, ID: B8L0076-MSD1 LFSMD 0.24755, Description: LFSMD

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1	1 PFBS	299 > 80.0	721.617	1972.856	0.248		3.36	3.38	10.5	55.3	
2	2 PFHxA	313.1 > 269.1	15158.716	4520.338	0.248		3.68	3.68	33.5	235	
3	4 PFHpA	363 > 319	11975.060	4520.338	0.248		4.15	4.16	26.5	116	
4	6 PFHxS	399 > 80.0	6972.973	1972.856	0.248		4.26	4.27	101	474	E
5	7 PFOA	413 > 369	34071.914	4520.338	0.248		4.53	4.53	75.4	331	
6	24 13C4-PFOS	503.0 > 80	1972.856	1972.856	0.248	1.000	4.87	4.89	28.7	116	100.0
7	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
8	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
9	24 13C4-PFOS	503.0 > 80	1972.856	1972.856	0.248	1.000	4.87	4.89	28.7	116	100.0
10	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
11	-1										
12	8 PFNA	463 > 419	4553.943	4520.338	0.248		4.85	4.84	10.1	48.6	
13	9 PFOS	498.9 > 80.0	7080.070	1972.856	0.248		4.89	4.89	103	462	E
14	11 PFDA	513 > 469	1925.898	4520.338	0.248		5.11	5.11	4.26	20.7	
15	12 N-MeFOSAA	570 > 419.1	913.689	8158.899	0.248		5.22	5.22	4.48	19.9	
16	13 N-EtFOSAA	584.0 > 419.1	613.872	8158.899	0.248		5.33	5.33	3.01	22.1	
17	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
18	24 13C4-PFOS	503.0 > 80	1972.856	1972.856	0.248	1.000	4.87	4.89	28.7	116	100.0
19	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	8158.899	8158.899	0.248	1.000	5.20	5.22	40.0	162	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	8158.899	8158.899	0.248	1.000	5.20	5.22	40.0	162	100.0
22	-1										
23	14 PFUnA	563 > 519	1925.367	4520.338	0.248		5.35	5.33	4.26	19.9	
24	16 PFDaA	613 > 569	2974.077	4520.338	0.248		5.55	5.53	6.58	21.6	
25	17 PFTrDA	662.9 > 619	2790.561	4520.338	0.248		5.71	5.70	6.17	18.8	
26	18 PFTeDA	712.9 > 669	2915.403	4520.338	0.248		5.87	5.85	6.45	19.6	
27	19 13C2-PFHxA	315.1 > 270	3605.917	4520.338	0.248	0.759	3.68	3.68	7.98	42.5	105.2
28	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
29	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
30	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
31	23 13C2-PFOA	415 > 370	4520.338	4520.338	0.248	1.000	4.51	4.53	10.0	40.4	100.0
32	21 13C2-PFDA	515.0 > 470.0	4872.196	4520.338	0.248	1.052	5.12	5.11	10.8	41.4	102.5
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	5619.047	8158.899	0.248	0.831	5.33	5.33	27.5	134	82.9

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-69.qld

Last Altered: Monday, December 17, 2018 12:19:37 Pacific Standard Time

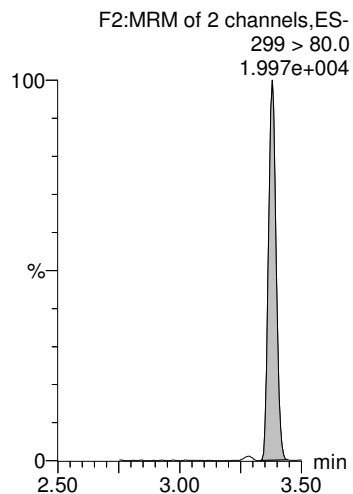
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Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

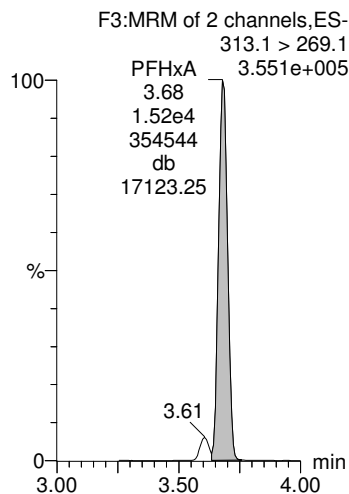
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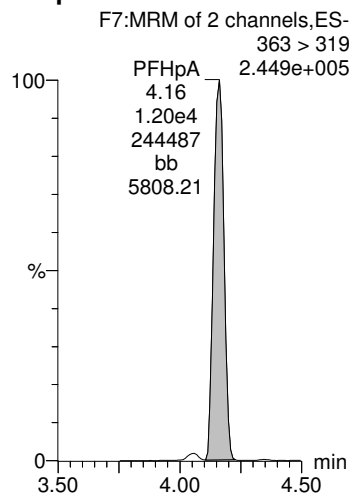
**PFBS**



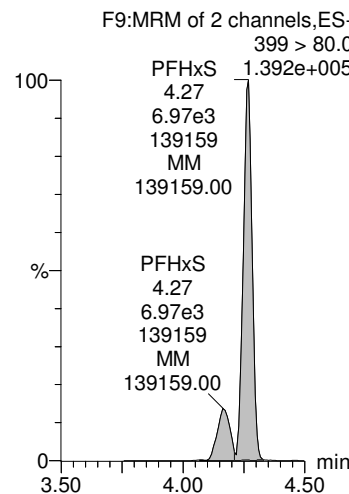
**PFHxA**



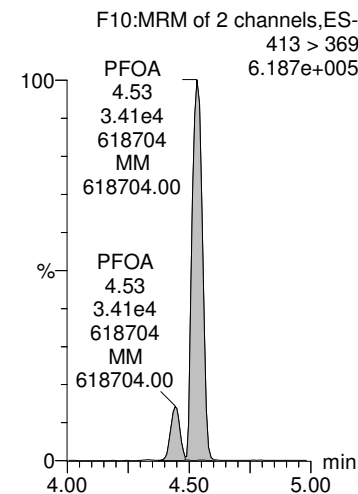
**PFHpA**



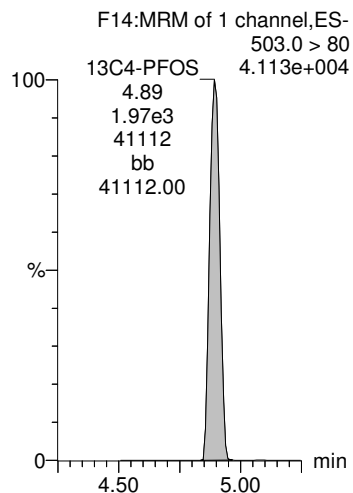
**PFHxS**



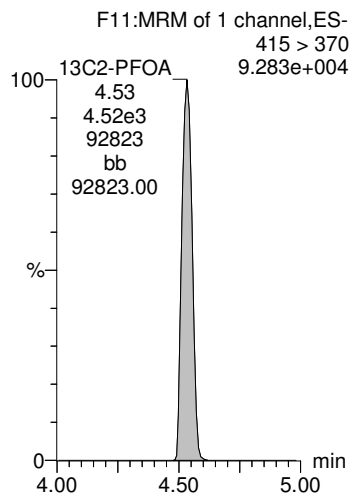
**PFOA**



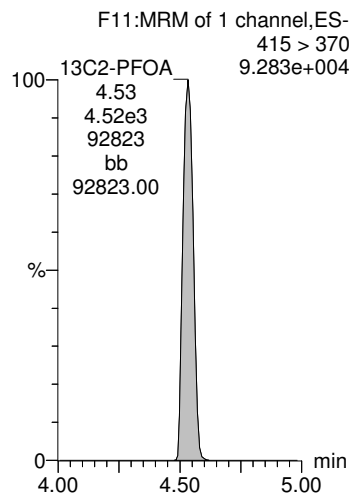
**13C4-PFOS**



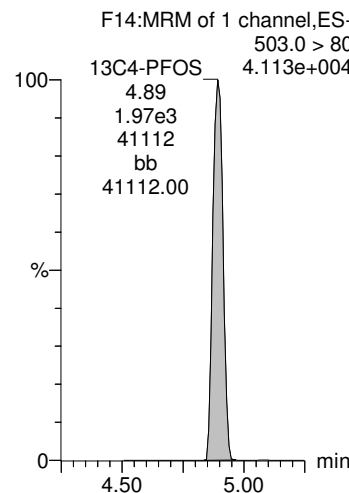
**13C2-PFOA**



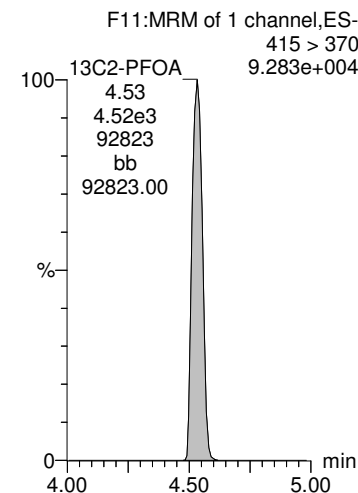
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**



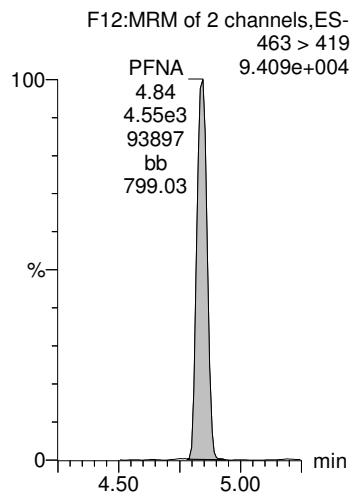
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-69.qld

Last Altered: Monday, December 17, 2018 12:19:37 Pacific Standard Time

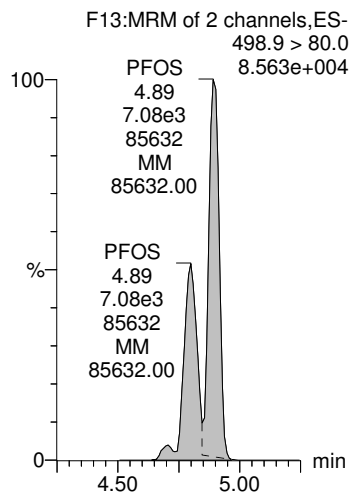
Printed: Monday, December 17, 2018 12:20:31 Pacific Standard Time

Name: 181214P2\_69, Date: 15-Dec-2018, Time: 01:43:41, ID: B8L0076-MSD1 LFSMD 0.24755, Description: LFSMD

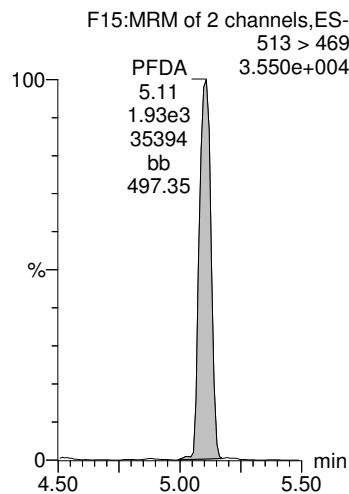
**PFNA**



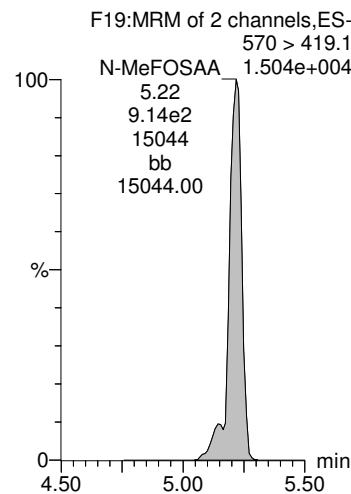
**PFOS**



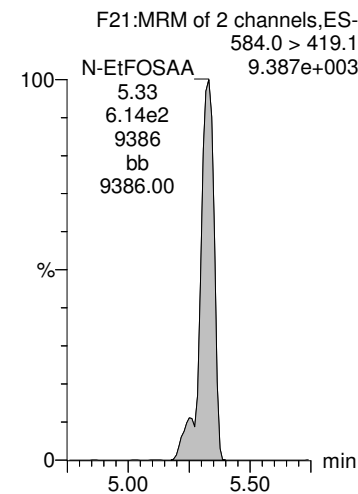
**PFDA**



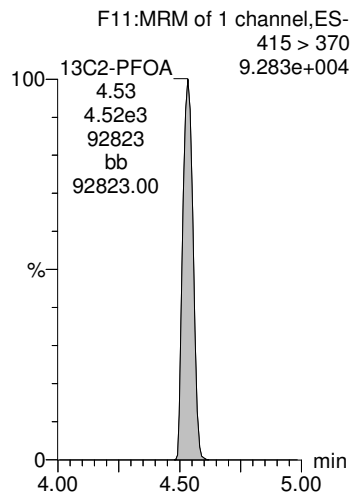
**N-MeFOSAA**



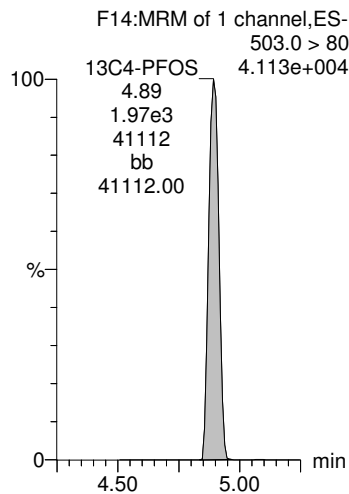
**N-EtFOSAA**



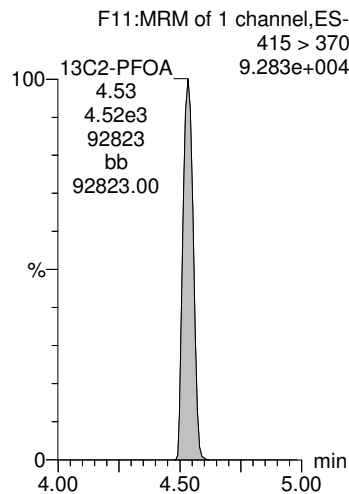
**13C2-PFOA**



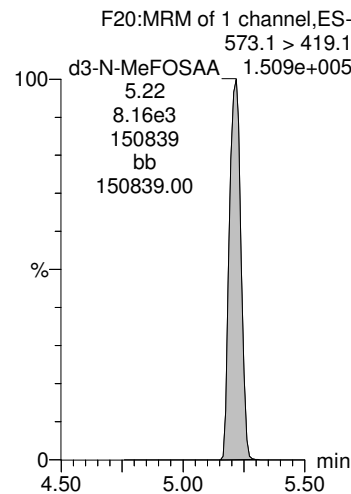
**13C4-PFOS**



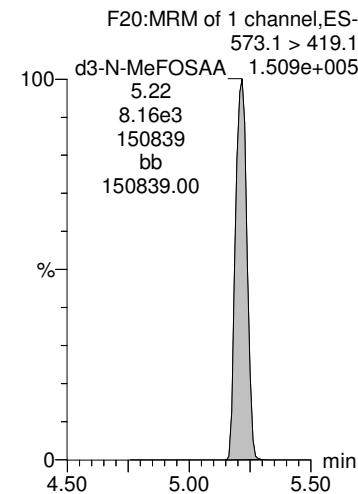
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**



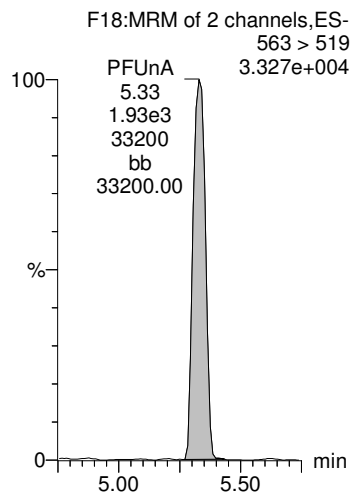
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-69.qld

Last Altered: Monday, December 17, 2018 12:19:37 Pacific Standard Time

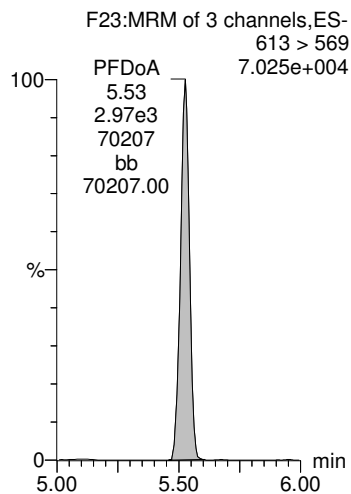
Printed: Monday, December 17, 2018 12:20:31 Pacific Standard Time

Name: 181214P2\_69, Date: 15-Dec-2018, Time: 01:43:41, ID: B8L0076-MSD1 LFSMD 0.24755, Description: LFSMD

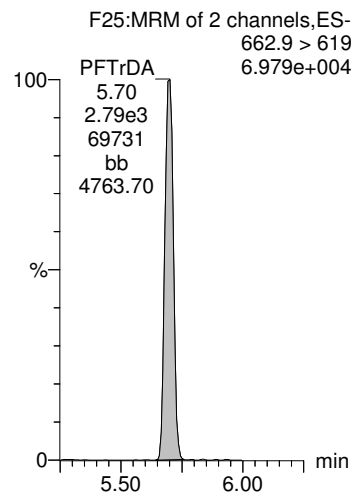
**PFUnA**



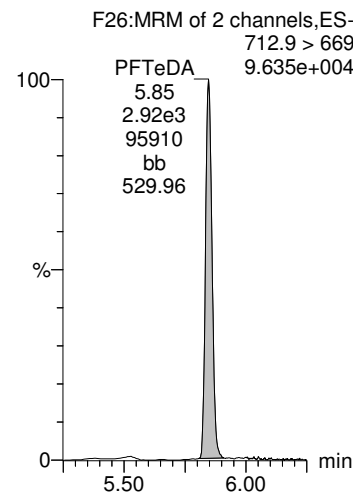
**PFDaA**



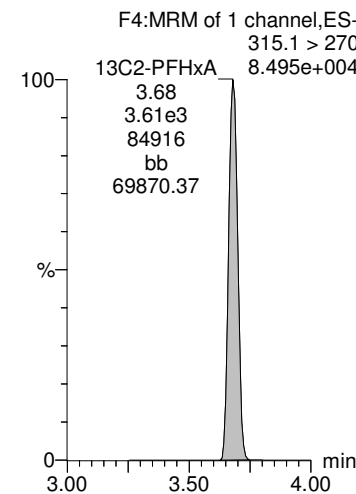
**PFTrDA**



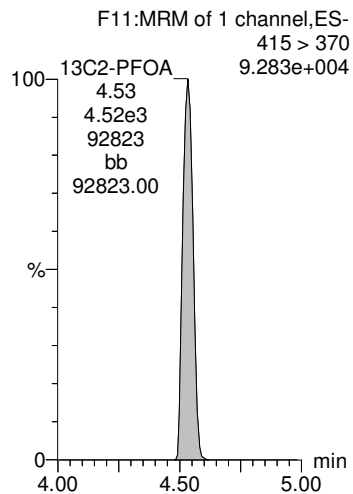
**PFTeDA**



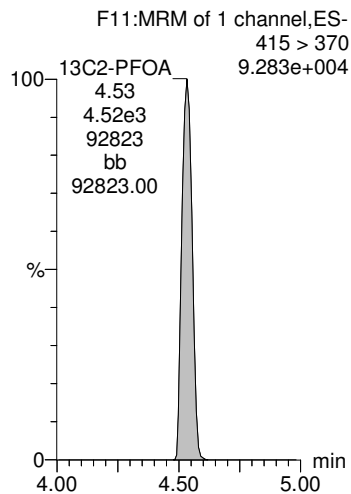
**13C2-PFHxA**



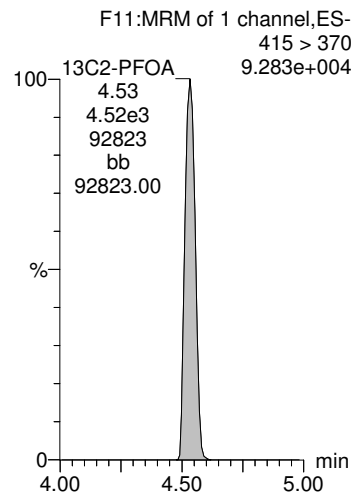
**13C2-PFOA**



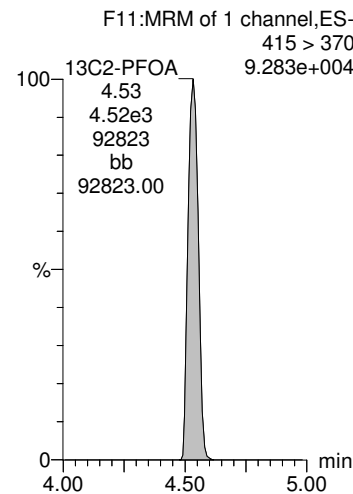
**13C2-PFOA**



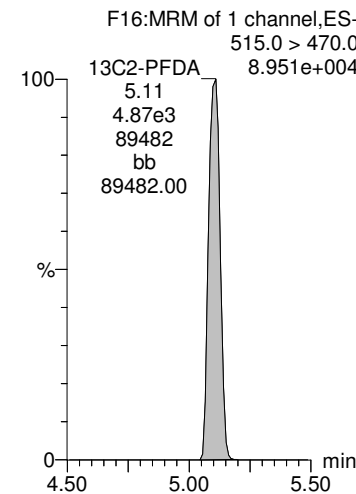
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



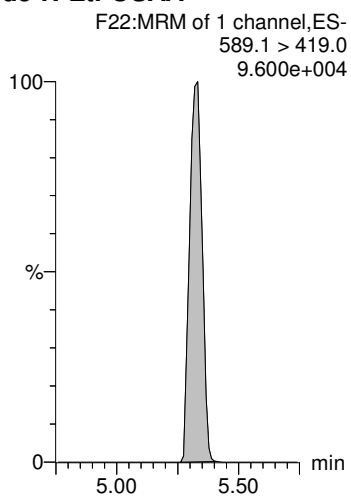
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Last Altered: Monday, December 17, 2018 12:19:37 Pacific Standard Time

Printed: Monday, December 17, 2018 12:20:31 Pacific Standard Time

Name: 181214P2\_69, Date: 15-Dec-2018, Time: 01:43:41, ID: B8L0076-MSD1 LFSMD 0.24755, Description: LFSMD

**d5-N-EtFOSAA**



Dataset: P:\PFAS.PRO\RESULTS\181217P1\181217P1-24.qld

Last Altered: Tuesday, December 18, 2018 09:46:53 Pacific Standard Time

Printed: Tuesday, December 18, 2018 09:49:05 Pacific Standard Time

Method: P:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: P:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181217P1\_24, Date: 17-Dec-2018, Time: 19:52:22, ID: B8L0076-MSD1@10 XLFSMD 0.24755, Description: LFSMD

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	6 PFHxS	399 > 80.0	9.83e2	3.33e2	0.2475		4.22	4.22	84.8	397	
2	9 PFOS	498.9 >80.0	1.14e3	3.33e2	0.2475		4.86	4.86	98.4	445	
3	19 13C2-PFHxA	315.1 > 270	6.77e2	7.52e2	0.2475	0.942	3.63	3.63	9.00	38.6	95.6
4	21 13C2-PFDA	515.0 > 470.0	9.76e2	7.52e2	0.2475	1.301	5.07	5.07	13.0	40.3	99.7
5	24 13C4-PFOS	503.0 > 80	3.33e2	3.33e2	0.2475	1.000	4.87	4.86	28.7	116	100.0

Dataset: P:\PFAS.PRO\RESULTS\181217P1\181217P1-24.qld

Last Altered: Tuesday, December 18, 2018 09:46:53 Pacific Standard Time

Printed: Tuesday, December 18, 2018 09:49:05 Pacific Standard Time

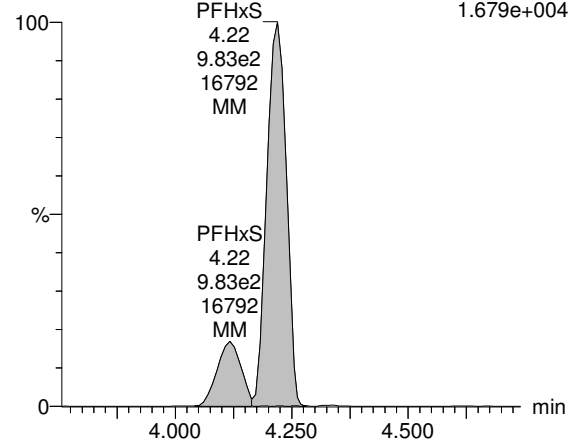
Method: P:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: P:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181217P1\_24, Date: 17-Dec-2018, Time: 19:52:22, ID: B8L0076-MSD1@10 XLFSMD 0.24755, Description: LFSMD

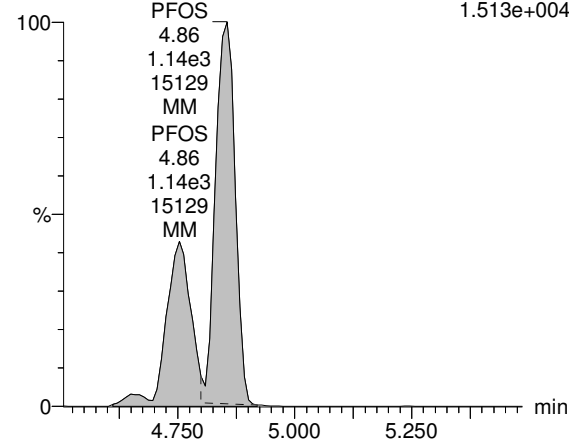
**PFHxS**

181217P1\_24 F9:MRM of 2 channels,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 399 > 80.0 1.679e+004



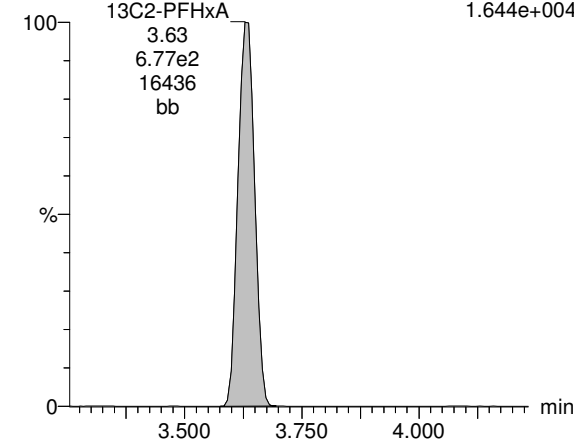
**PFOS**

181217P1\_24 F13:MRM of 2 channels,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 498.9 > 80.0 1.513e+004



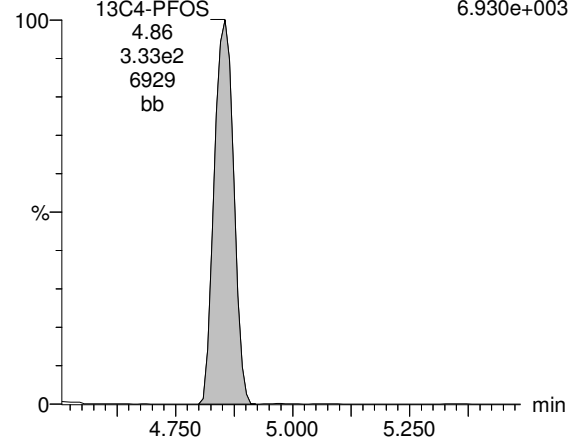
**13C2-PFHxA**

181217P1\_24 F4:MRM of 1 channel,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 315.1 > 270 1.644e+004



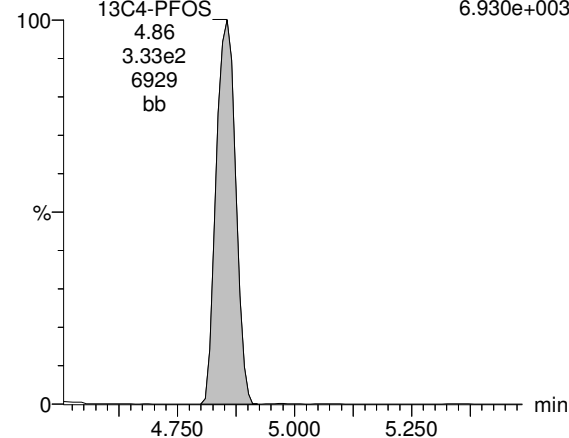
**13C4-PFOS**

181217P1\_24 F14:MRM of 1 channel,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 503.0 > 80 6.930e+003



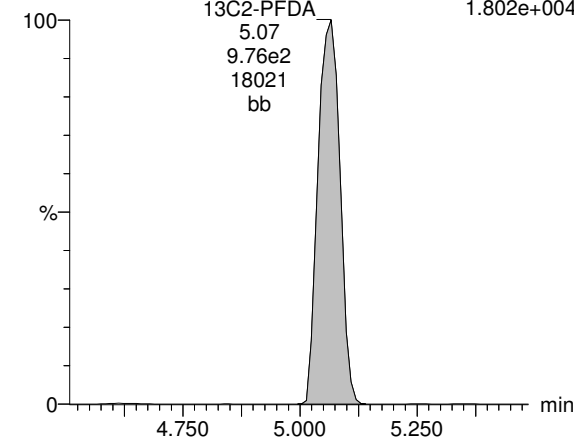
**13C4-PFOS**

181217P1\_24 F14:MRM of 1 channel,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 503.0 > 80 6.930e+003



**13C2-PFDA**

181217P1\_24 F16:MRM of 1 channel,ES-LFSMD B8L0076-MSD1@10 XLFSMD 0.24755 515.0 > 470.0 1.802e+004



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-76.qld

Last Altered: Monday, December 17, 2018 12:51:42 Pacific Standard Time

Printed: Monday, December 17, 2018 12:52:48 Pacific Standard Time

Name: 181214P2\_76, Date: 15-Dec-2018, Time: 03:01:57, ID: 1803982-06 Shooting Range1-FB-120618 0.2478, Description: Shooting Range1-FB-120618

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		1981.122	0.248		3.36				
2	2 PFHxA	313.1 > 269.1		4619.156	0.248		3.68				
3	4 PFHpA	363 > 319		4619.156	0.248		4.15				
4	6 PFHxS	399 > 80.0		1981.122	0.248		4.26				
5	7 PFOA	413 > 369		4619.156	0.248		4.53				
6	24 13C4-PFOS	503.0 > 80	1981.122	1981.122	0.248	1.000	4.87	4.89	28.7	116	100.0
7	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
8	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
9	24 13C4-PFOS	503.0 > 80	1981.122	1981.122	0.248	1.000	4.87	4.89	28.7	116	100.0
10	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
11	-1										
12	8 PFNA	463 > 419		4619.156	0.248		4.85				
13	9 PFOS	498.9 > 80.0		1981.122	0.248		4.89				
14	11 PFDA	513 > 469		4619.156	0.248		5.11				
15	12 N-MeFOSAA	570 > 419.1		8885.119	0.248		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		8885.119	0.248		5.33				
17	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
18	24 13C4-PFOS	503.0 > 80	1981.122	1981.122	0.248	1.000	4.87	4.89	28.7	116	100.0
19	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	8885.119	8885.119	0.248	1.000	5.20	5.22	40.0	161	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	8885.119	8885.119	0.248	1.000	5.20	5.22	40.0	161	100.0
22	-1										
23	14 PFUnA	563 > 519		4619.156	0.248		5.35				
24	16 PFDaA	613 > 569		4619.156	0.248		5.55				
25	17 PFTTrDA	662.9 > 619		4619.156	0.248		5.71				
26	18 PFTeDA	712.9 > 669		4619.156	0.248		5.87				
27	19 13C2-PFHxA	315.1 > 270	3723.378	4619.156	0.248	0.759	3.68	3.68	8.06	42.9	106.3
28	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
29	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
30	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
31	23 13C2-PFOA	415 > 370	4619.156	4619.156	0.248	1.000	4.51	4.53	10.0	40.4	100.0
32	21 13C2-PFDA	515.0 > 470.0	4993.848	4619.156	0.248	1.052	5.12	5.11	10.8	41.5	102.8
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	7569.880	8885.119	0.248	0.831	5.33	5.33	34.1	166	102.5



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-76.qld

Last Altered: Monday, December 17, 2018 12:51:42 Pacific Standard Time

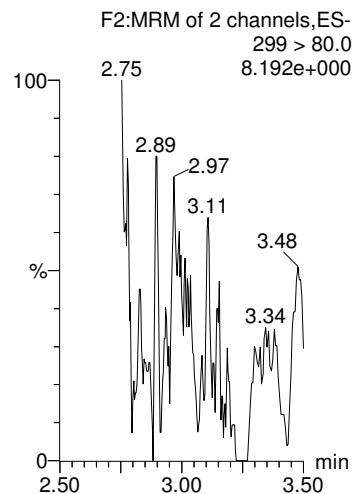
Printed: Monday, December 17, 2018 12:52:48 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

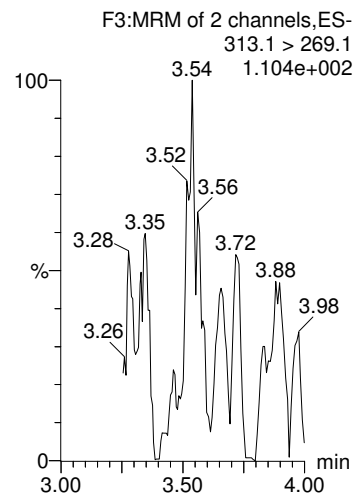
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Name: 181214P2\_76, Date: 15-Dec-2018, Time: 03:01:57, ID: 1803982-06 Shooting Range1-FB-120618 0.2478, Description: Shooting Range1-FB-120618

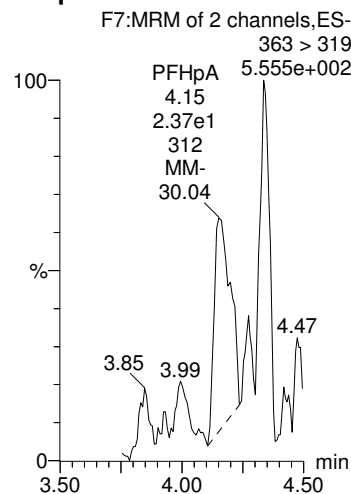
**PFBS**



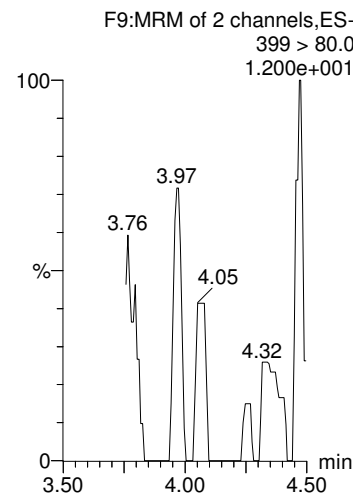
**PFHxA**



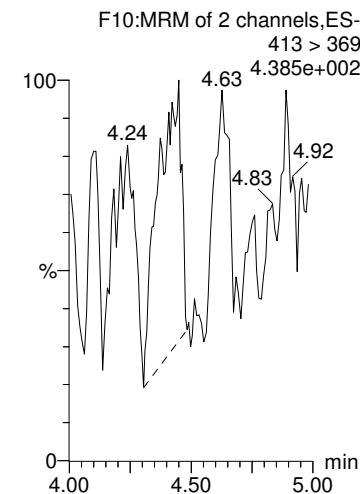
**PFHpA**



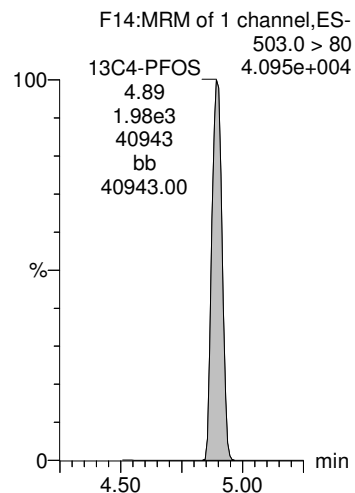
**PFHxS**



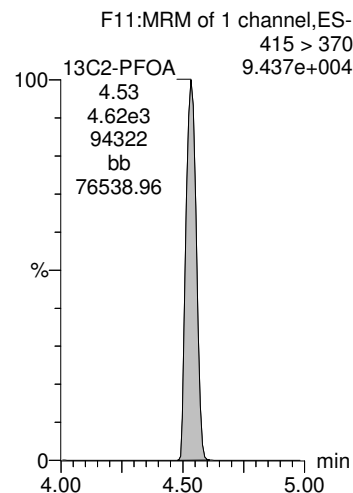
**PFOA**



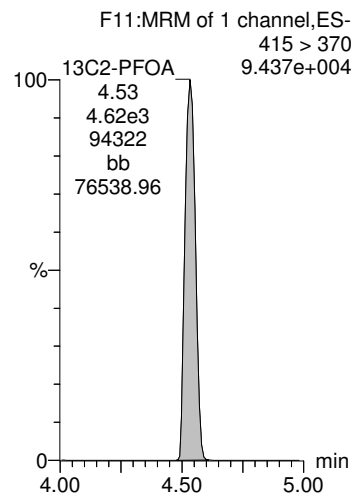
**13C4-PFOS**



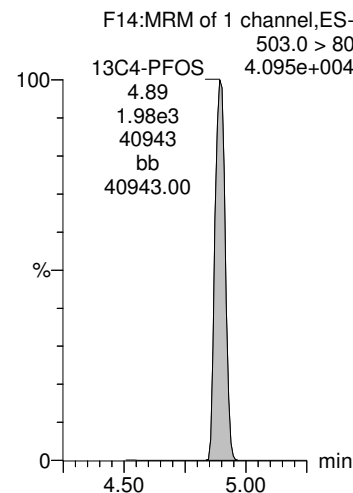
**13C2-PFOA**



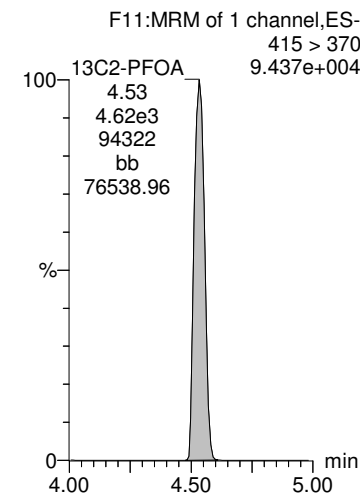
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**



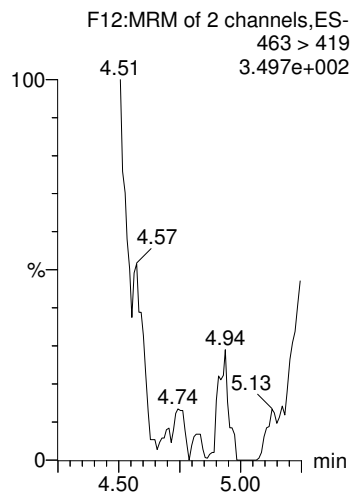
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Last Altered: Monday, December 17, 2018 12:51:42 Pacific Standard Time

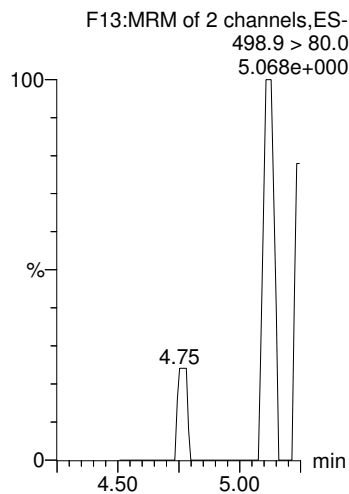
Printed: Monday, December 17, 2018 12:52:48 Pacific Standard Time

Name: 181214P2\_76, Date: 15-Dec-2018, Time: 03:01:57, ID: 1803982-06 Shooting Range1-FB-120618 0.2478, Description: Shooting Range1-FB-120618

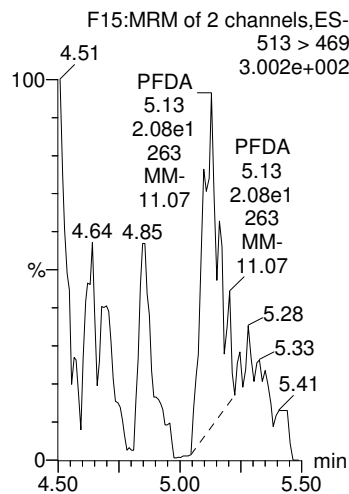
**PFNA**



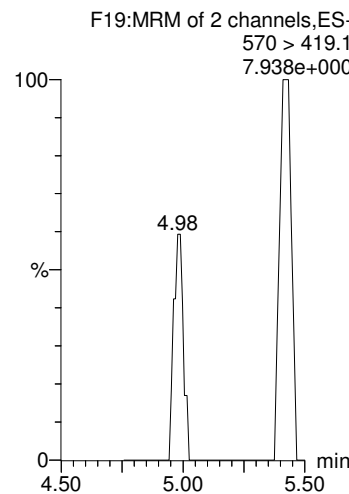
**PFOS**



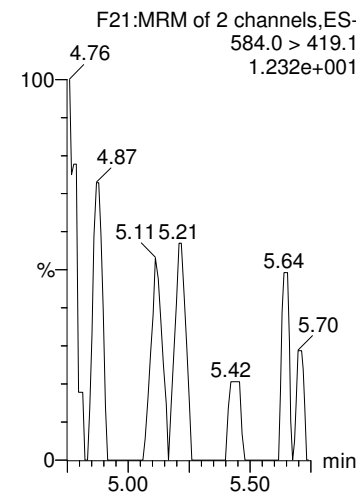
**PFDA**



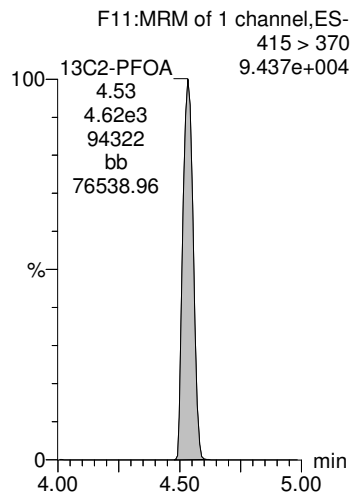
**N-MeFOSAA**



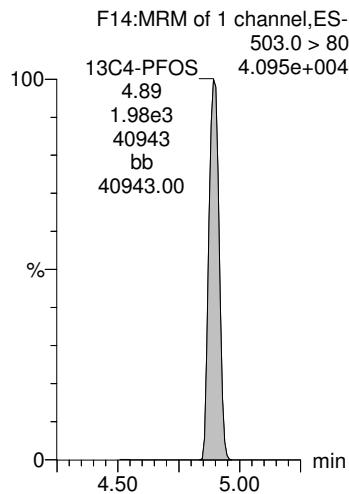
**N-EtFOSAA**



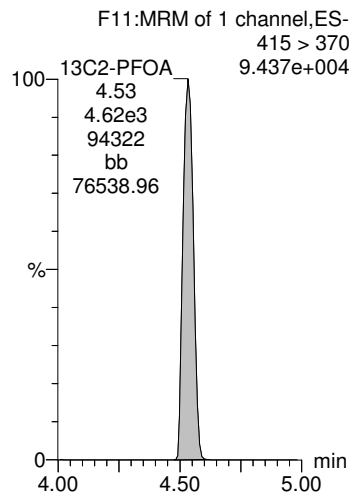
**13C2-PFOA**



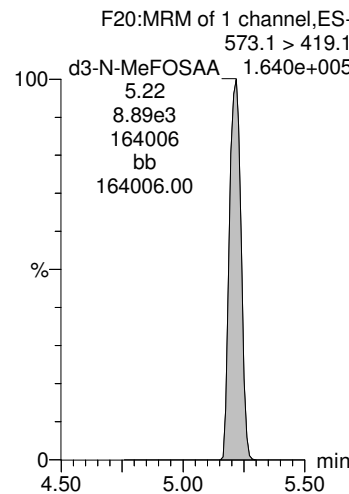
**13C4-PFOS**



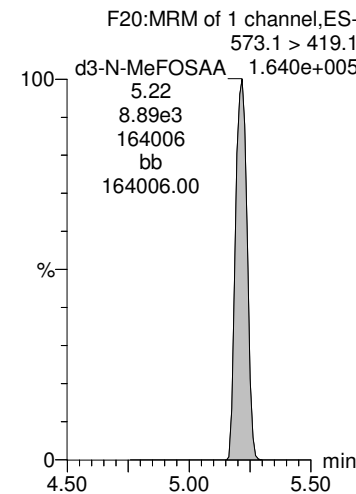
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

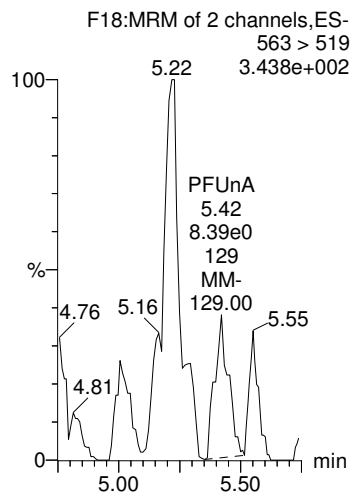


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-76.qld

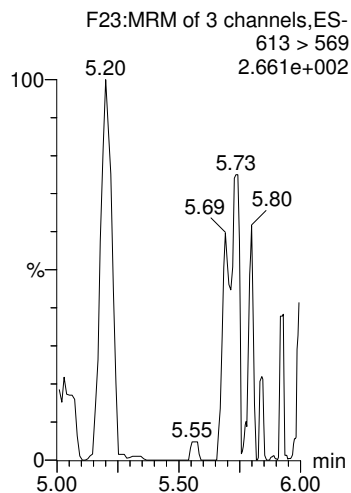
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Printed: Monday, December 17, 2018 12:52:48 Pacific Standard Time

Name: 181214P2\_76, Date: 15-Dec-2018, Time: 03:01:57, ID: 1803982-06 Shooting Range1-FB-120618 0.2478, Description: Shooting Range1-FB-120618

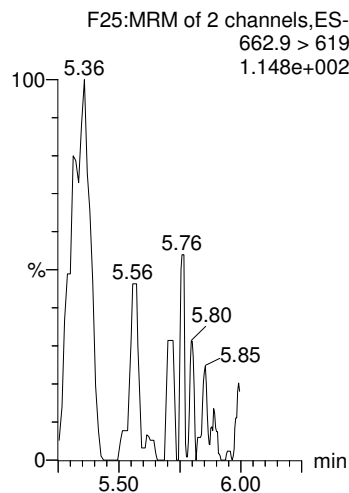
**PFUnA**



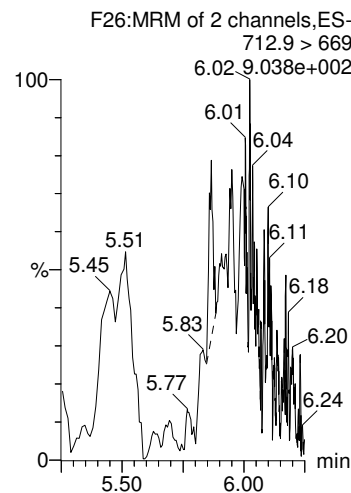
**PFDoxA**



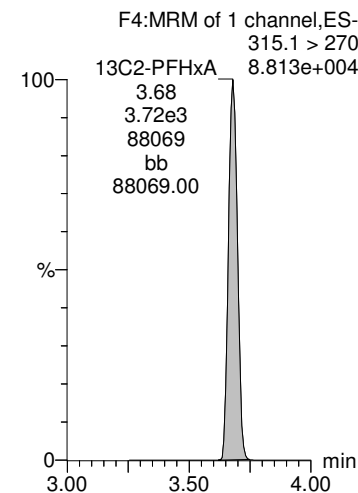
**PFTrDA**



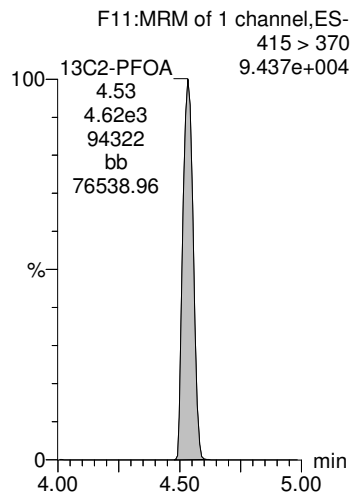
**PFTeDA**



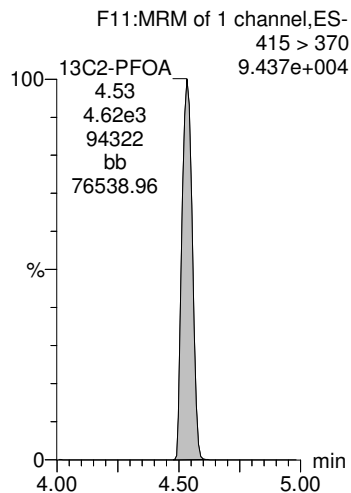
**13C2-PFHxA**



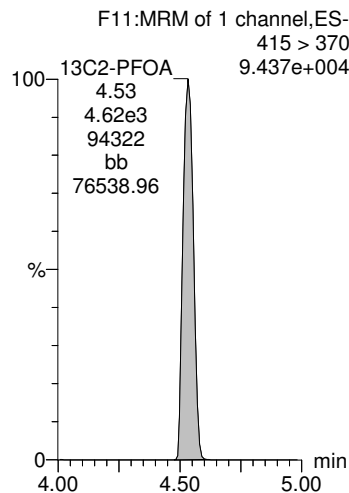
**13C2-PFOA**



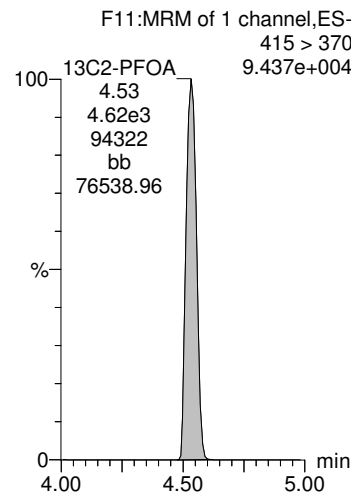
**13C2-PFOA**



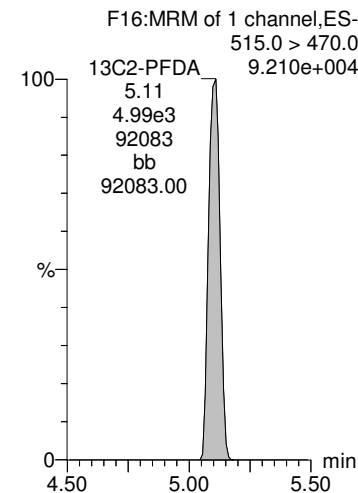
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



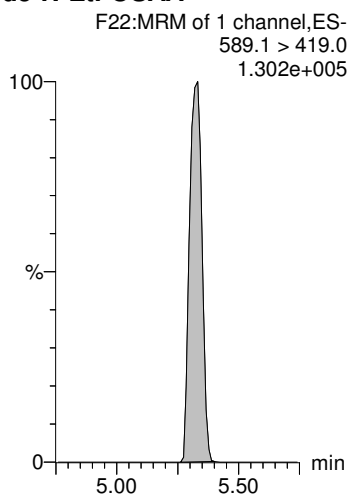
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Printed: Monday, December 17, 2018 12:52:48 Pacific Standard Time

Name: 181214P2\_76, Date: 15-Dec-2018, Time: 03:01:57, ID: 1803982-06 Shooting Range1-FB-120618 0.2478, Description: Shooting Range1-FB-120618

**d5-N-EtFOSAA**



Dataset: P:\PFAS.PRO\RESULTS\181214P2\1801214P2-77.qld

Last Altered: Tuesday, December 18, 2018 10:36:04 Pacific Standard Time

Printed: Tuesday, December 18, 2018 10:39:47 Pacific Standard Time

Name: 181214P2\_77, Date: 15-Dec-2018, Time: 03:13:07, ID: 1803982-07 Source Blank 0.23755, Description: Source Blank

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0		2175.755	0.238		3.36				
2	2 PFHxA	313.1 > 269.1		4921.095	0.238		3.68				
3	4 PFHpA	363 > 319		4921.095	0.238		4.15				
4	6 PFHxS	399 > 80.0		2175.755	0.238		4.26				
5	7 PFOA	413 > 369		4921.095	0.238		4.53				
6	24 13C4-PFOS	503.0 > 80	2175.755	2175.755	0.238	1.000	4.87	4.89	28.7	121	100.0
7	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
8	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
9	24 13C4-PFOS	503.0 > 80	2175.755	2175.755	0.238	1.000	4.87	4.89	28.7	121	100.0
10	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
11	-1										
12	8 PFNA	463 > 419		4921.095	0.238		4.85				
13	9 PFOS	498.9 > 80.0		2175.755	0.238		4.89				
14	11 PFDA	513 > 469		4921.095	0.238		5.11				
15	12 N-MeFOSAA	570 > 419.1		8962.057	0.238		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		8962.057	0.238		5.33				
17	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
18	24 13C4-PFOS	503.0 > 80	2175.755	2175.755	0.238	1.000	4.87	4.89	28.7	121	100.0
19	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	8962.057	8962.057	0.238	1.000	5.20	5.22	40.0	168	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	8962.057	8962.057	0.238	1.000	5.20	5.22	40.0	168	100.0
22	-1										
23	14 PFUnA	563 > 519		4921.095	0.238		5.35				
24	16 PFDaA	613 > 569		4921.095	0.238		5.55				
25	17 PFTTrDA	662.9 > 619		4921.095	0.238		5.71				
26	18 PFTeDA	712.9 > 669		4921.095	0.238		5.87				
27	19 13C2-PFHxA	315.1 > 270	3855.200	4921.095	0.238	0.759	3.68	3.68	7.83	43.5	103.3
28	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
29	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
30	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
31	23 13C2-PFOA	415 > 370	4921.095	4921.095	0.238	1.000	4.51	4.53	10.0	42.1	100.0
32	21 13C2-PFDA	515.0 > 470.0	5182.419	4921.095	0.238	1.052	5.12	5.11	10.5	42.2	100.1
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	6885.859	8962.057	0.238	0.831	5.33	5.33	30.7	156	92.5

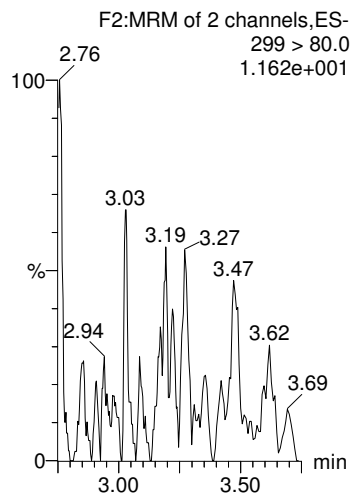
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Last Altered: Tuesday, December 18, 2018 10:36:04 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 10:39:47 Pacific Standard Time

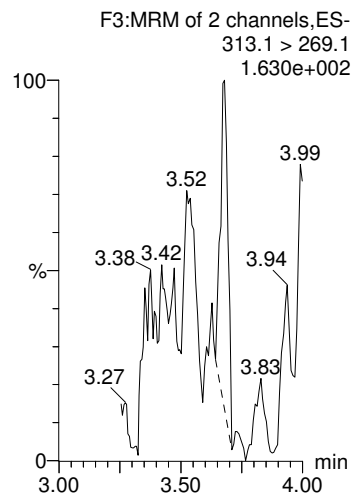
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Name: 181214P2\_77, Date: 15-Dec-2018, Time: 03:13:07, ID: 1803982-07 Source Blank 0.23755, Description: Source Blank

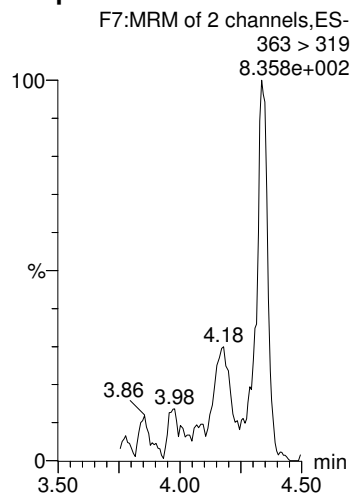
**PFBS**



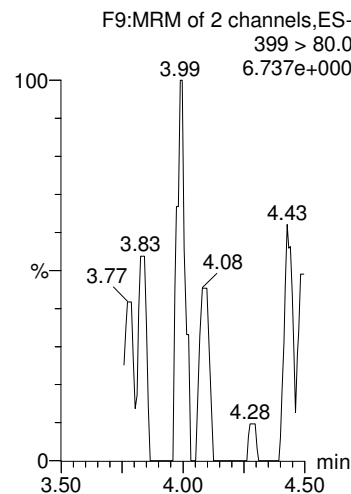
**PFHxA**



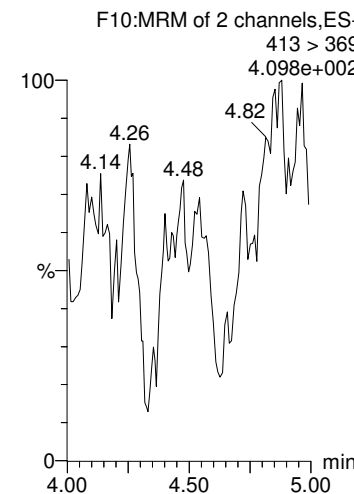
**PFHpA**



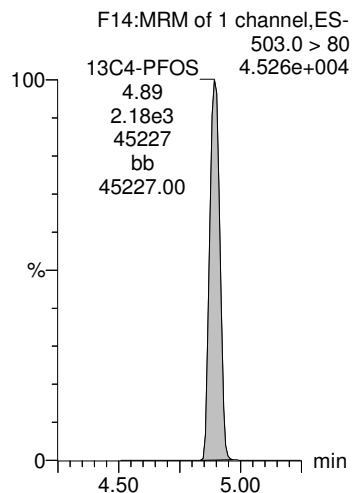
**PFHxS**



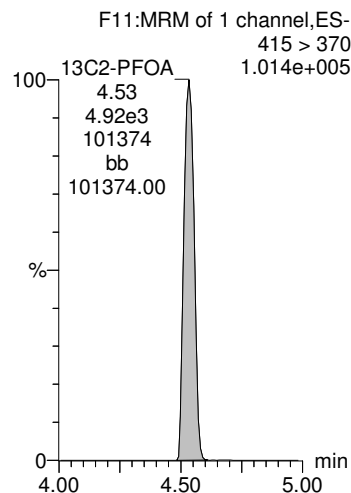
**PFOA**



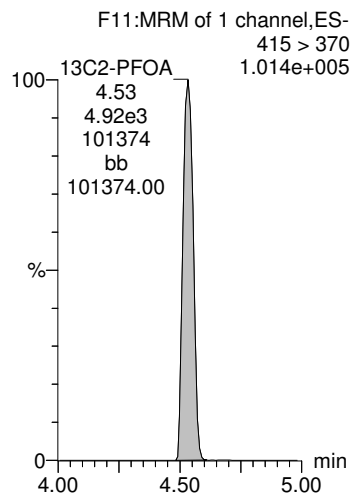
**13C4-PFOS**



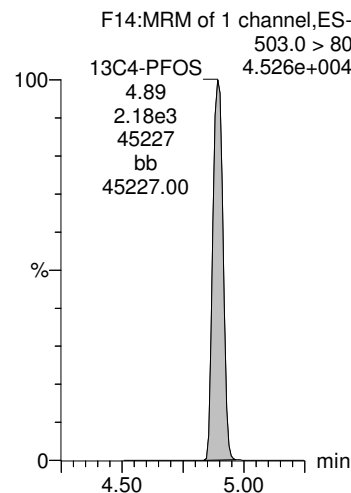
**13C2-PFOA**



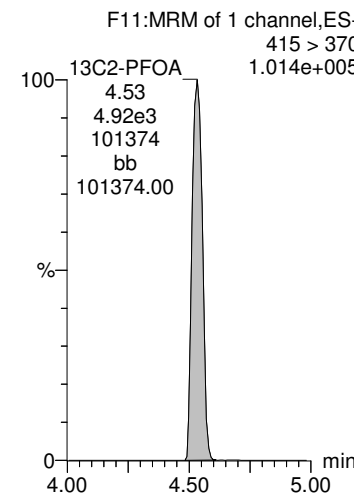
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

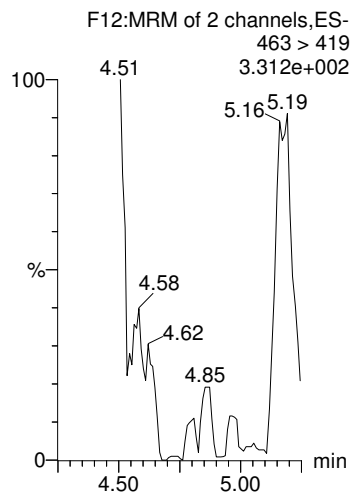


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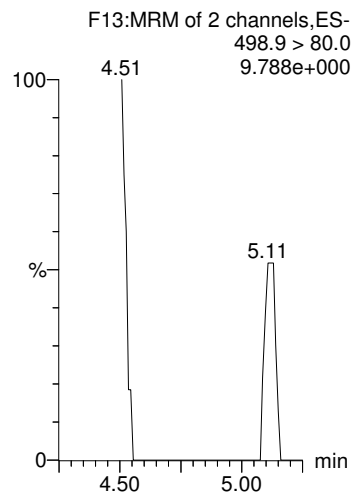
Last Altered: Tuesday, December 18, 2018 10:36:04 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 10:39:47 Pacific Standard Time

Name: 181214P2\_77, Date: 15-Dec-2018, Time: 03:13:07, ID: 1803982-07 Source Blank 0.23755, Description: Source Blank

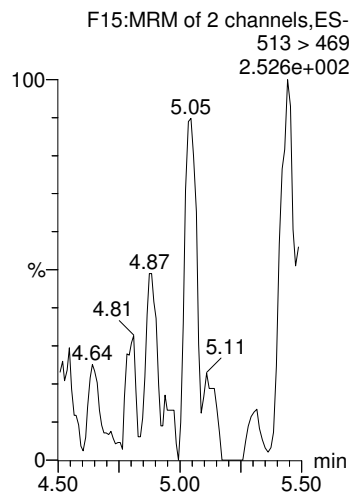
**PFNA**



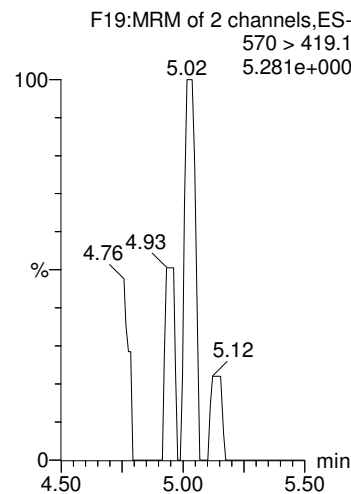
**PFOS**



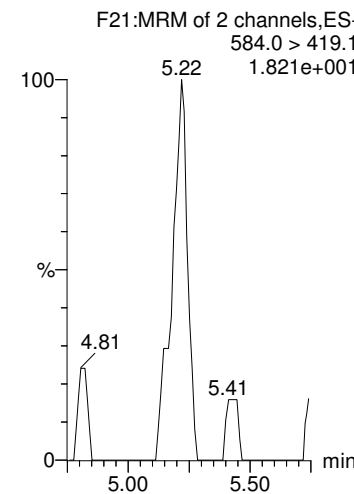
**PFDA**



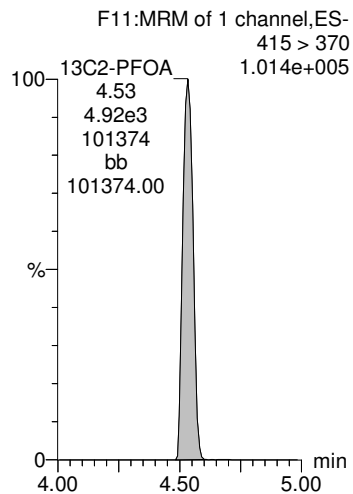
**N-MeFOSAA**



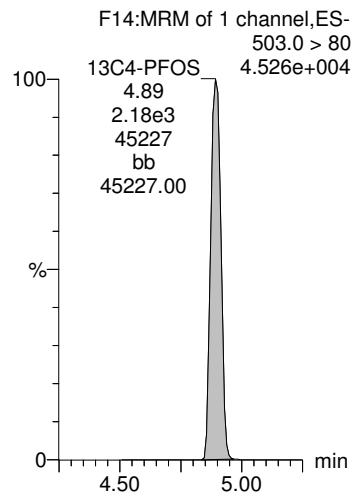
**N-EtFOSAA**



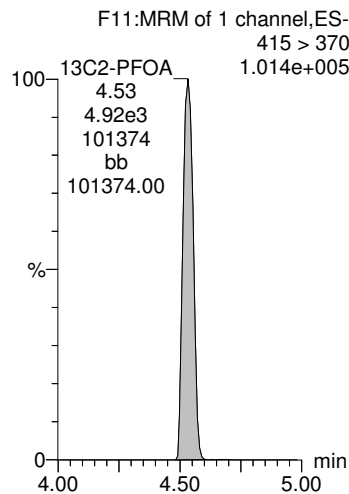
**13C2-PFOA**



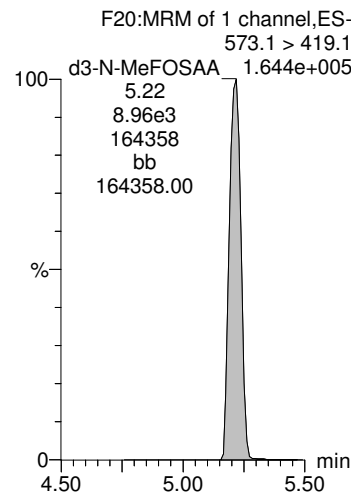
**13C4-PFOS**



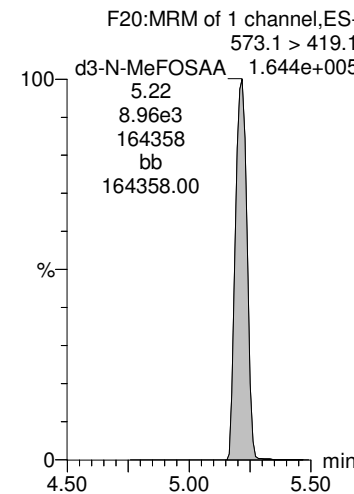
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

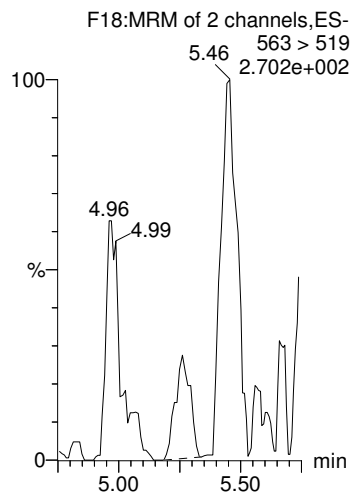


Dataset: P:\PFAS.PRO\RESULTS\181214P2\1801214P2-77.qld

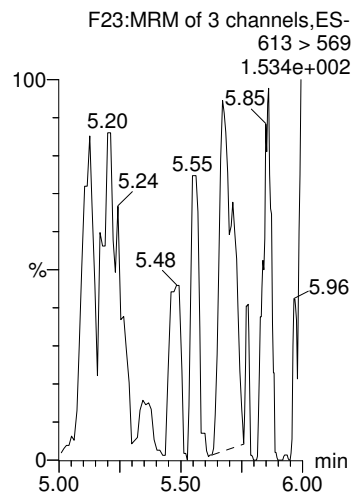
Last Altered: Tuesday, December 18, 2018 10:36:04 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 10:39:47 Pacific Standard Time

Name: 181214P2\_77, Date: 15-Dec-2018, Time: 03:13:07, ID: 1803982-07 Source Blank 0.23755, Description: Source Blank

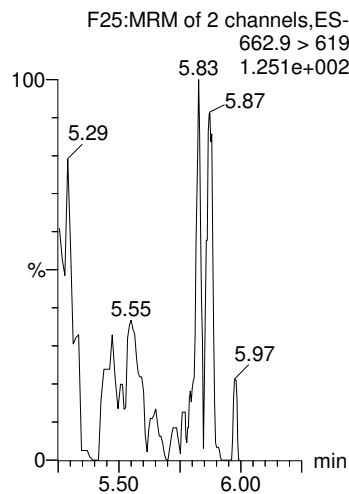
**PFUnA**



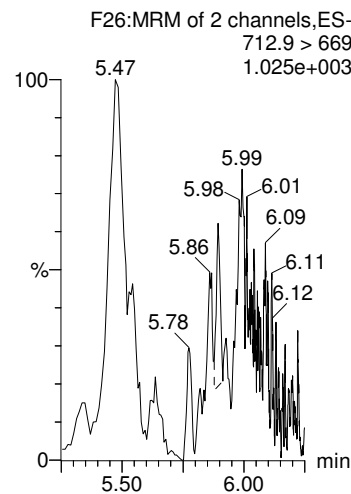
**PFDaA**



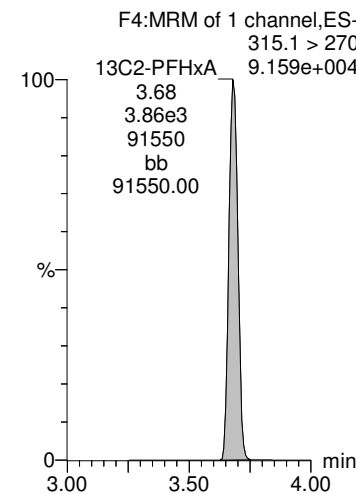
**PFTrDA**



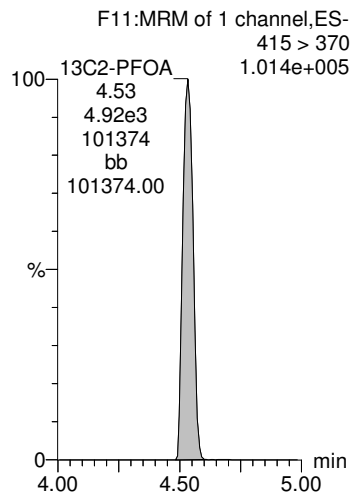
**PFTeDA**



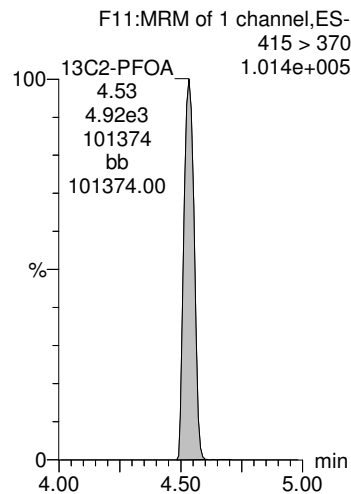
**13C2-PFHxA**



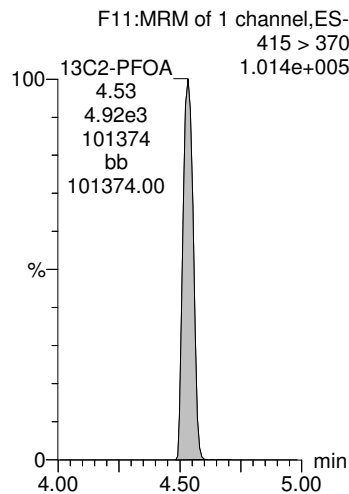
**13C2-PFOA**



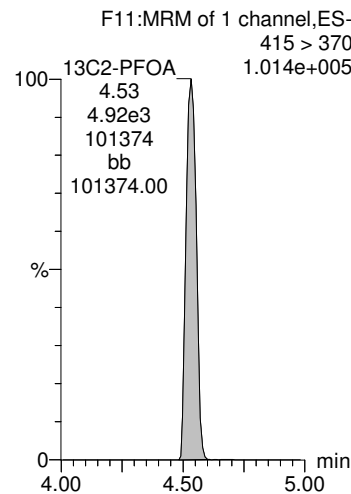
**13C2-PFOA**



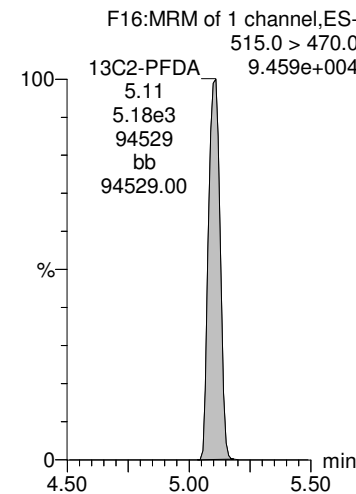
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



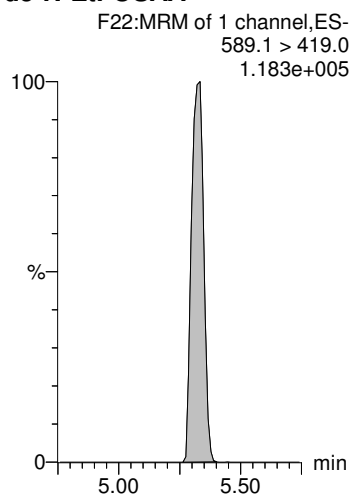


Dataset: P:\PFAS.PRO\RESULTS\181214P2\1801214P2-77.qld

Last Altered: Tuesday, December 18, 2018 10:36:04 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 10:39:47 Pacific Standard Time

Name: 181214P2\_77, Date: 15-Dec-2018, Time: 03:13:07, ID: 1803982-07 Source Blank 0.23755, Description: Source Blank

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-65.qld

Last Altered: Monday, December 17, 2018 09:39:25 Pacific Standard Time

Printed: Monday, December 17, 2018 09:40:59 Pacific Standard Time

Name: 181216P1\_65, Date: 16-Dec-2018, Time: 17:23:27, ID: 1803982-08 DUP-1 0.23495, Description: DUP-1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	620.834	2954.672	0.235		3.36	3.38	6.03	32.0	
2	2 PFHxA	313.1 > 269.1	19546.803	6369.063	0.235		3.68	3.68	30.7	194	
3	4 PFHpA	363 > 319	11294.667	6369.063	0.235		4.15	4.16	17.7	76.0	
4	6 PFHxS	399 > 80.0	6254.284	2954.672	0.235		4.26	4.27	60.8	299	
5	7 PFOA	413 > 369	28612.393	6369.063	0.235		4.53	4.53	44.9	185	
6	24 13C4-PFOS	503.0 > 80	2954.672	2954.672	0.235	1.000	4.87	4.89	28.7	122	100.0
7	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
8	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
9	24 13C4-PFOS	503.0 > 80	2954.672	2954.672	0.235	1.000	4.87	4.89	28.7	122	100.0
10	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
11	-1										
12	8 PFNA	463 > 419	2497.414	6369.063	0.235		4.85	4.84	3.92	15.7	
13	9 PFOS	498.9 > 80.0	5789.230	2954.672	0.235		4.89	4.89	56.2	268	
14	11 PFDA	513 > 469		6369.063	0.235		5.10				
15	12 N-MeFOSAA	570 > 419.1		13682.341	0.235		5.22				
16	13 N-EtFOSAA	584.0 > 419.1		13682.341	0.235		5.32				
17	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
18	24 13C4-PFOS	503.0 > 80	2954.672	2954.672	0.235	1.000	4.87	4.89	28.7	122	100.0
19	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	13682.341	13682.341	0.235	1.000	5.20	5.22	40.0	170	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	13682.341	13682.341	0.235	1.000	5.20	5.22	40.0	170	100.0
22	-1										
23	14 PFUnA	563 > 519		6369.063	0.235		5.35				
24	16 PFDaA	613 > 569		6369.063	0.235		5.55				
25	17 PFTTrDA	662.9 > 619		6369.063	0.235		5.71				
26	18 PFTeDA	712.9 > 669		6369.063	0.235		5.87				
27	19 13C2-PFHxA	315.1 > 270	5933.794	6369.063	0.235	0.942	3.68	3.68	9.32	42.1	98.9
28	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
29	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
30	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
31	23 13C2-PFOA	415 > 370	6369.063	6369.063	0.235	1.000	4.51	4.53	10.0	42.6	100.0
32	21 13C2-PFDA	515.0 > 470.0	7822.910	6369.063	0.235	1.301	5.12	5.10	12.3	40.2	94.4
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	13194.084	13682.341	0.235	1.070	5.33	5.32	38.6	153	90.1

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-65.qld

Last Altered: Monday, December 17, 2018 09:39:25 Pacific Standard Time

Printed: Monday, December 17, 2018 09:40:59 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181216P1\_65, Date: 16-Dec-2018, Time: 17:23:27, ID: 1803982-08 DUP-1 0.23495, Description: DUP-1

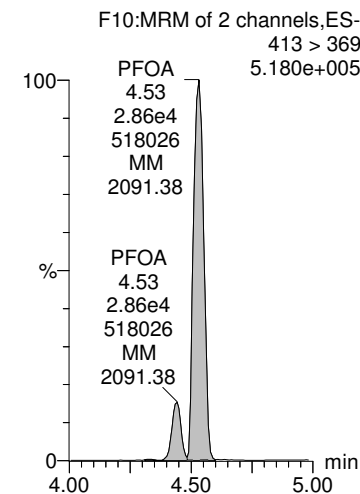
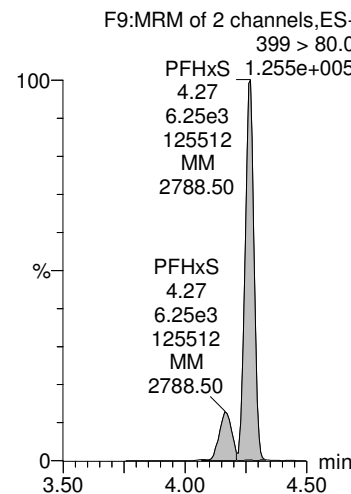
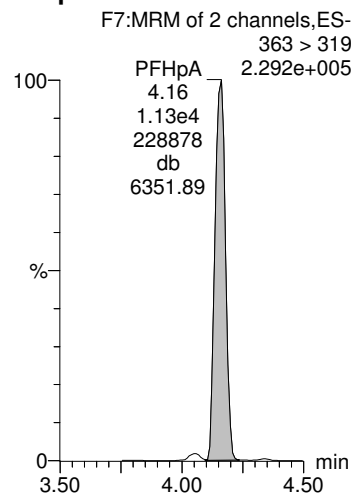
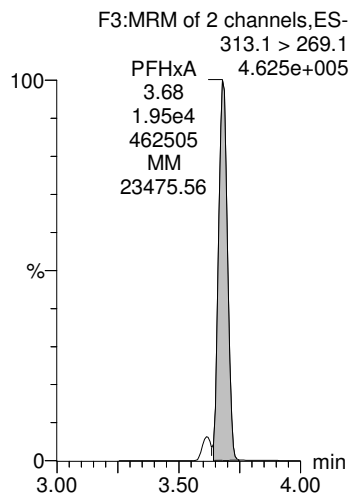
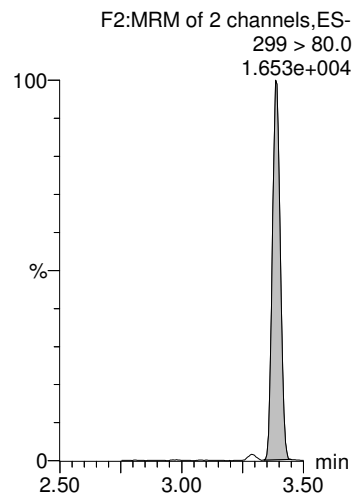
**PFBS**

**PFHxA**

**PFHpA**

**PFHxS**

**PFOA**



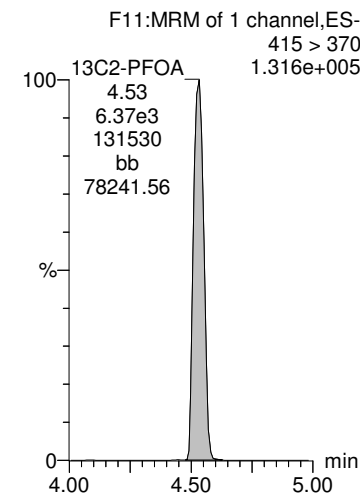
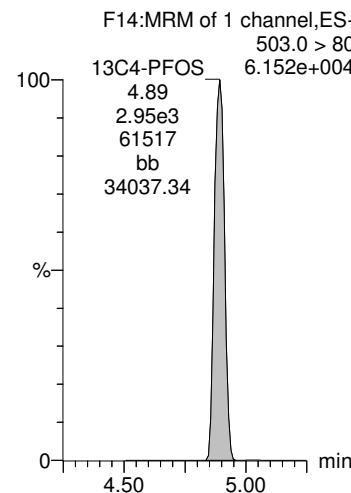
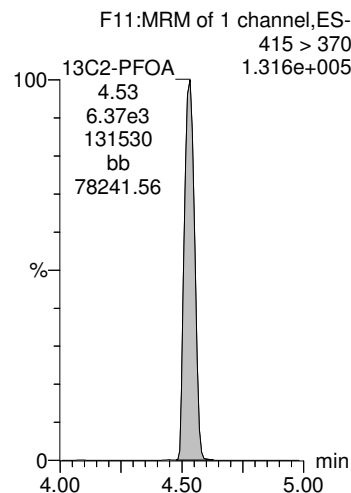
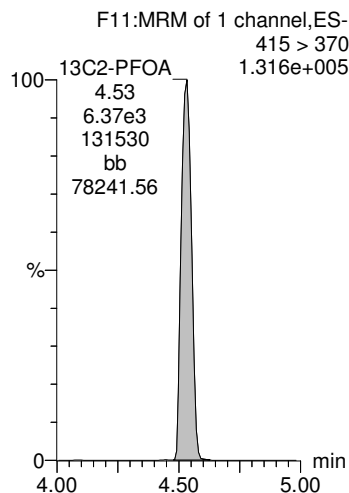
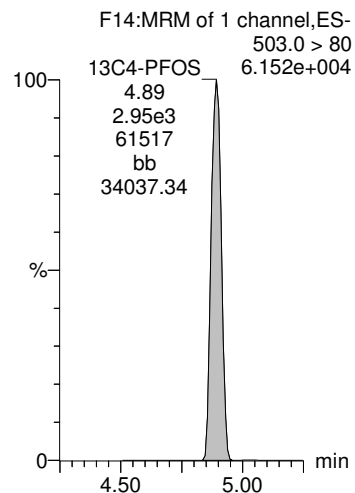
**13C4-PFOS**

**13C2-PFOA**

**13C2-PFOA**

**13C4-PFOS**

**13C2-PFOA**

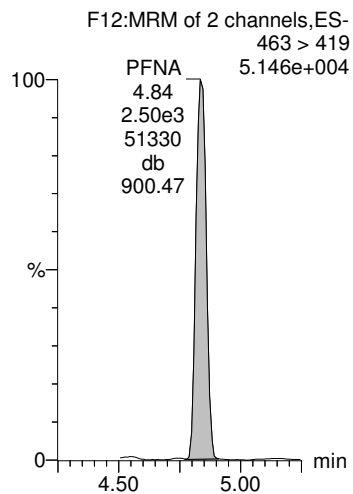


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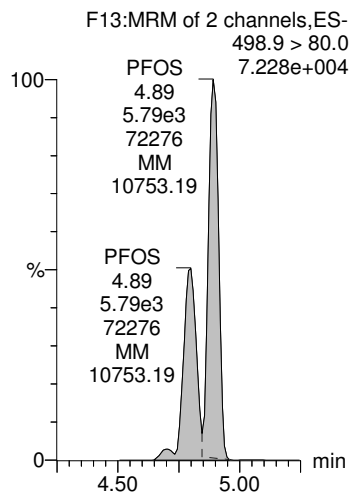
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Printed: Monday, December 17, 2018 09:40:59 Pacific Standard Time

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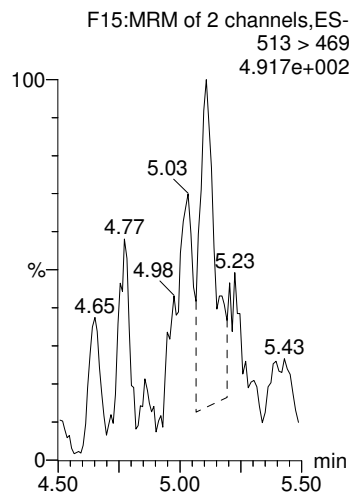
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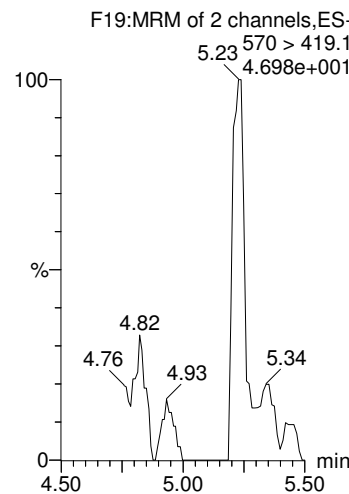
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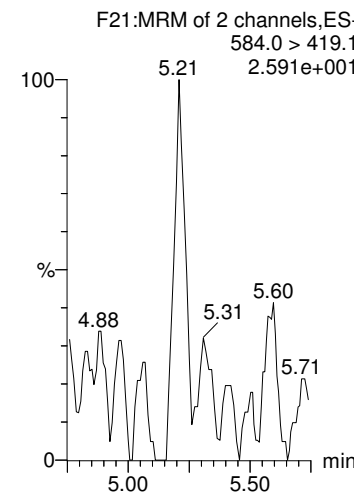
**PFDA**



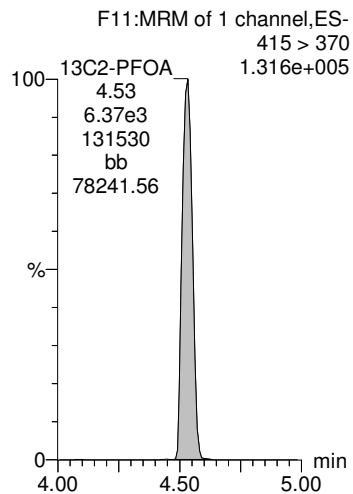
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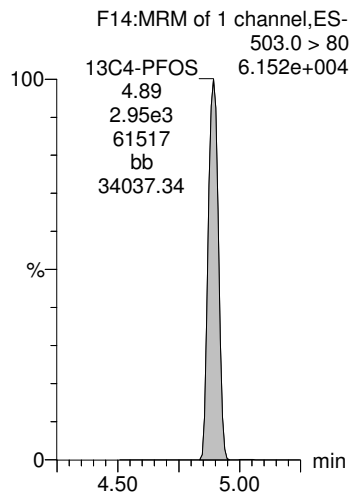
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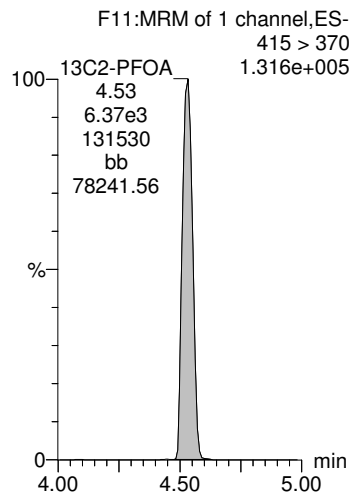
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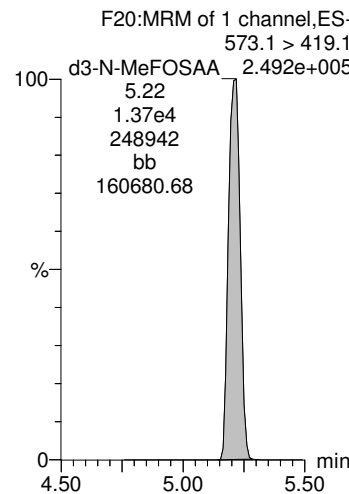
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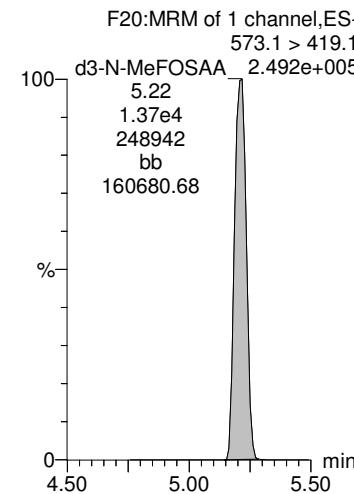
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

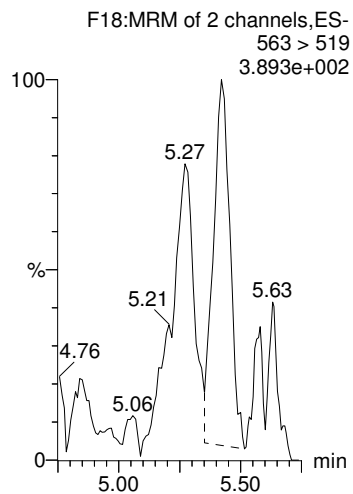


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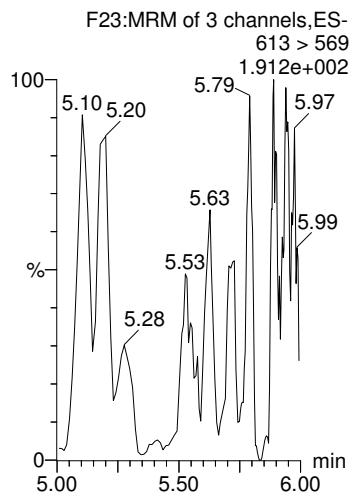
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Printed: Monday, December 17, 2018 09:40:59 Pacific Standard Time

Name: 181216P1\_65, Date: 16-Dec-2018, Time: 17:23:27, ID: 1803982-08 DUP-1 0.23495, Description: DUP-1

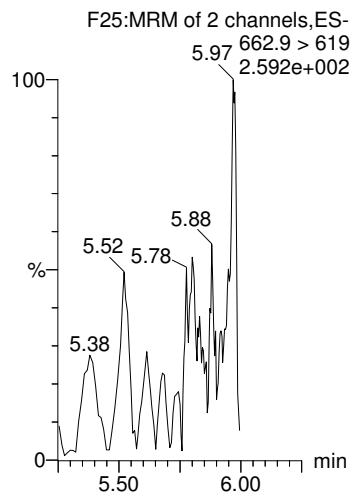
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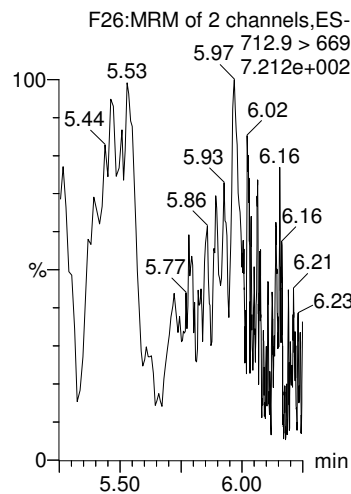
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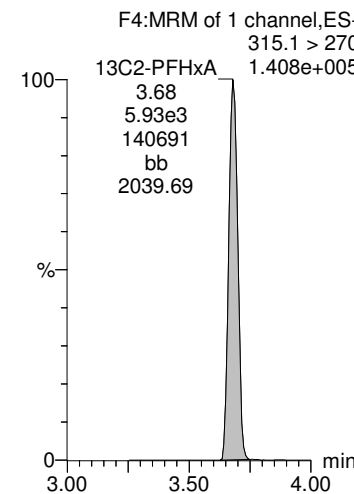
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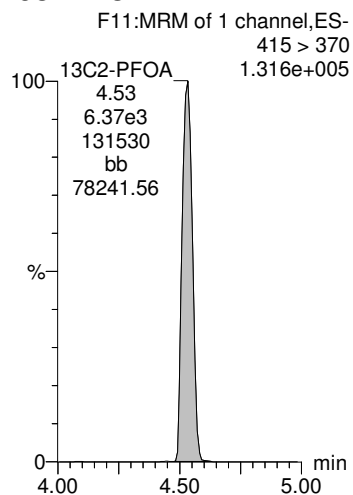
**PFTeDA**



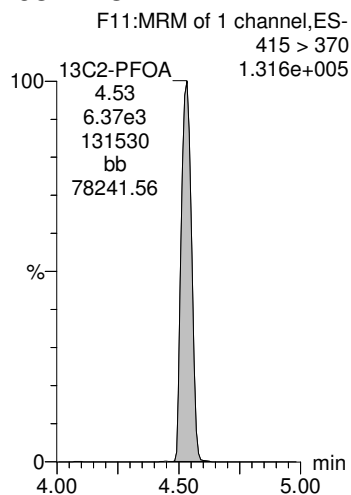
**13C2-PFHxA**



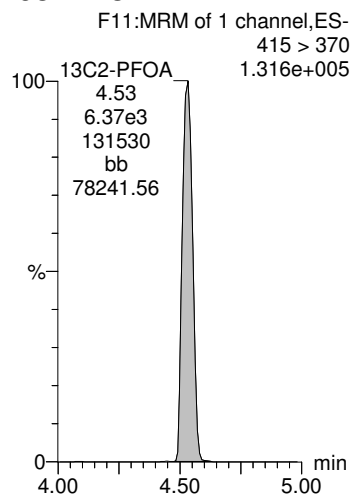
**13C2-PFOA**



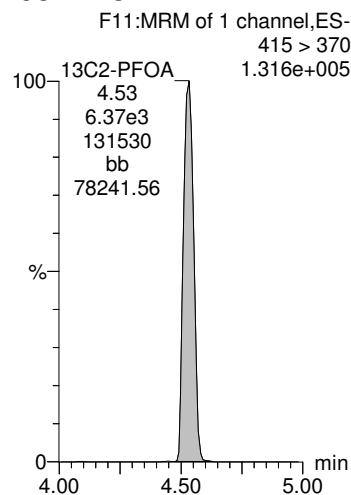
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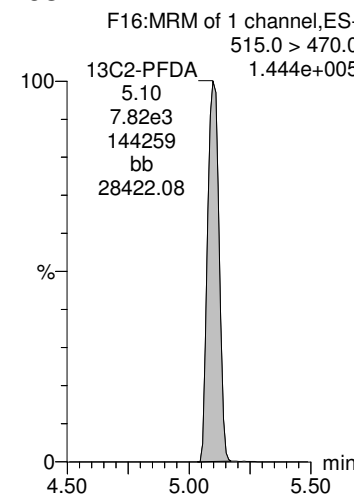
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



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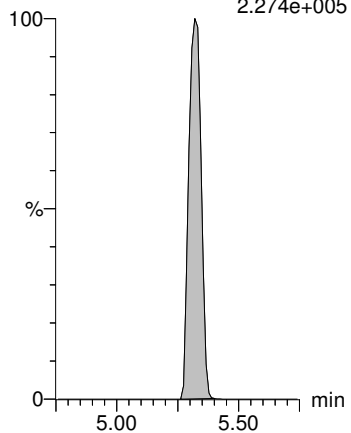
Last Altered: Monday, December 17, 2018 09:39:25 Pacific Standard Time

Printed: Monday, December 17, 2018 09:40:59 Pacific Standard Time

Name: 181216P1\_65, Date: 16-Dec-2018, Time: 17:23:27, ID: 1803982-08 DUP-1 0.23495, Description: DUP-1

**d5-N-EtFOSAA**

F22:MRM of 1 channel,ES-  
589.1 > 419.0  
2.274e+005



**INJECTION INTERNAL STANDARD (IIS) AREAS,  
AND  
CONTINUING CALIBRATION VERIFICATIONS (CCV)**

# ICAL

## Compound 23: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %	
1	IPA	181214P2_1	Analyte	10		5585.20	0.00	
2	ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Analyte	10	4.46	5911.95	5585.20	105.85
3	ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Analyte	10	4.51	5684.62	5585.20	101.78
4	ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Analyte	10	4.52	5210.43	5585.20	93.29
5	ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Analyte	10	4.53	5665.12	5585.20	101.43
6	ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Analyte	10	4.53	5615.40	5585.20	100.54
7	ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Analyte	10	4.53	5543.85	5585.20	99.26
8	ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Analyte	10	4.53	5688.92	5585.20	101.86
9	ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Analyte	10	4.53	5370.97	5585.20	96.16
10	ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Analyte	10	4.53	5522.65	5585.20	98.88
11	ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Analyte	10	4.53	5638.05	5585.20	100.95
12	IPA	181214P2_12	Analyte	10		5585.20	0.00	
13	ST181214P2-1 PFC ICV 537 18L1013	181214P2_13	Analyte	10	4.53	5915.03	5585.20	105.91
14	IPA	181214P2_14	Analyte	10		5585.20	0.00	
15	B8L0041-BS1 LFB 0.25	181214P2_15	Analyte	10	4.53	5226.29	5585.20	93.57
16	B8L0041-BSD1 LFBD 0.25	181214P2_16	Analyte	10	4.52	5617.64	5585.20	100.58
17	B8L0041-BLK1 LRB 0.25	181214P2_17	Analyte	10	4.53	5874.54	5585.20	105.18
18	1803878-01 WT1811300820MK 0.24527	181214P2_18	Analyte	10	4.53	5537.68	5585.20	99.15
19	1803878-02 WT1811300845MK 0.25171	181214P2_19	Analyte	10	4.53	5009.21	5585.20	89.69
20	1803878-03 WT1811300905MK 0.24661	181214P2_20	Analyte	10	4.53	5287.26	5585.20	94.67
21	1803878-04 WR1811300920MK 0.24349	181214P2_21	Analyte	10	4.53	4811.91	5585.20	86.15
22	1803878-05 WT1811300950MK 0.25023	181214P2_22	Analyte	10	4.53	5890.15	5585.20	105.46
23	1803878-06 WT1811301010MK 0.2468	181214P2_23	Analyte	10	4.53	5709.70	5585.20	102.23
24	1803878-07 WT1811301025MK 0.23971	181214P2_24	Analyte	10	4.53	5049.10	5585.20	90.40
25	1803878-08 WT1811301040MK 0.2446	181214P2_25	Analyte	10	4.53	5658.44	5585.20	101.31
26	1803878-09 FB1811301045MK 0.25516	181214P2_26	Analyte	10	4.53	4822.19	5585.20	86.34
27	1803878-10 WT1811301100MK 0.2446	181214P2_27	Analyte	10	4.53	5068.40	5585.20	90.75
28	1803878-11 WT1811301120MK 0.2477	181214P2_28	Analyte	10	4.53	5403.72	5585.20	96.75
29	IPA	181214P2_29	Analyte	10		5585.20	0.00	
30	ST181214P2-11 PFC CS1 537 18L1008	181214P2_30	Analyte	10	4.53	5646.00	5585.20	101.09



31	1803878-12	WT1811301140MK 0.24383	181214P2_31	Analyte	10	4.53	5336.76	5585.20	95.55
32	1803878-13	WT1811301150MK 0.24654	181214P2_32	Analyte	10	4.53	5291.46	5585.20	94.74
33	1803878-14	WT1811301315MK 0.25211	181214P2_33	Analyte	10	4.53	5303.75	5585.20	94.96
34	1803878-15	WT1811301330MK 0.24884	181214P2_34	Analyte	10	4.53	5467.86	5585.20	97.90
35	1803878-16	WR1811301345MK 0.25171	181214P2_35	Analyte	10	4.53	5273.13	5585.20	94.41
36	1803878-17	WT1811301400MK 0.24492	181214P2_36	Analyte	10	4.53	5732.49	5585.20	102.64
37	1803878-18	WT1811301415MK 0.24658	181214P2_37	Analyte	10	4.53	5260.92	5585.20	94.19
38	1803878-19	WSOFT1811301435MK 0.24926	181214P2_38	Analyte	10	4.53	4847.68	5585.20	86.80
39	1803878-20	WT1811301445MK 0.24626	181214P2_39	Analyte	10	4.53	5531.02	5585.20	99.03
40	B8L0013-BS1	LFB 0.25	181214P2_40	Analyte	10	4.53	5225.98	5585.20	93.57
41	B8L0013-BSD1	LFB 0.25	181214P2_41	Analyte	10	4.53	5092.27	5585.20	91.17
42	B8L0013-BLK1	LRB 0.25	181214P2_42	Analyte	10	4.53	5385.12	5585.20	96.42
43	1803817-01	GWNT1811280950KME 0.24493	181214P2_43	Analyte	10	4.53	5004.40	5585.20	89.60
44	IPA		181214P2_44	Analyte	10			5585.20	0.00
45	ST181214P2-12	PFC CS3 537 18KL1010	181214P2_45	Analyte	10	4.53	5538.98	5585.20	99.17
46	1803818-01	GWNT1811280800KME 0.24929	181214P2_46	Analyte	10	4.53	5183.46	5585.20	92.81
47	1803819-01	GWNT1811280820KME 0.24765	181214P2_47	Analyte	10	4.53	5013.14	5585.20	89.76
48	1803820-01	GWNT1811280915KME 0.25031	181214P2_48	Analyte	10	4.53	5329.54	5585.20	95.42
49	1803822-01	GWEF1811281305KME 0.24372	181214P2_49	Analyte	10	4.53	5498.72	5585.20	98.45
50	1803823-01	GWEF1811281335KME 0.2504	181214P2_50	Analyte	10	4.53	4835.00	5585.20	86.57
51	1803824-01	GWEF1811281400KME 0.24525	181214P2_51	Analyte	10	4.53	4905.34	5585.20	87.83
52	1803827-01	GWEF1811271130KER 0.2417	181214P2_52	Analyte	10	4.53	4663.98	5585.20	83.51
53	1803828-01	GWEF1811271310KER 0.25159	181214P2_53	Analyte	10	4.53	4778.68	5585.20	85.56
54	1803829-01	GWEF1811271350KER 0.24889	181214P2_54	Analyte	10	4.53	5002.37	5585.20	89.56
55	1803830-01	GWEF1811271420KER 0.24604	181214P2_55	Analyte	10	4.53	4471.79	5585.20	80.06
56	IPA		181214P2_56	Analyte	10			5585.20	0.00
57	ST181214P2-13	PFC CS-1 537 18L1006	181214P2_57	Analyte	10	4.53	5819.82	5585.20	104.20
58	1803831-01	GWEF1811280900KER 0.24827	181214P2_58	Analyte	10	4.53	5023.35	5585.20	89.94
59	1803832-01	GWEF1811280940KER 0.24557	181214P2_59	Analyte	10	4.53	4827.91	5585.20	86.44
60	1803833-01	GWEF1811281020KER 0.24841	181214P2_60	Analyte	10	4.53	4651.43	5585.20	83.28
61	1803834-01	GWNT1811281050KER 0.24175	181214P2_61	Analyte	10	4.53	4864.03	5585.20	87.09
62	1803835-01	GWEF1811281140KER 0.25161	181214P2_62	Analyte	10	4.53	4996.22	5585.20	89.45
63	1803836-01	GWEF1811281220KER 0.24895	181214P2_63	Analyte	10	4.53	5099.75	5585.20	91.31
64	1803837-01	GWEF1811281400KER 0.24721	181214P2_64	Analyte	10	4.53	5417.83	5585.20	97.00

65	IPA	181214P2_65	Analyte	10			5585.20	0.00
66	ST181214P2-14 PFC CS1 537 18L1008	181214P2_66	Analyte	10	4.53	5619.59	5585.20	100.62
67	B8L0076-BS1 LFB 0.25	181214P2_67	Analyte	10	4.53	4936.00	5585.20	88.38
68	B8L0076-MS1 LFSM 0.25052	181214P2_68	Analyte	10	4.53	4877.15	5585.20	87.32
69	B8L0076-MSD1 LFSMD 0.24755	181214P2_69	Analyte	10	4.53	4520.34	5585.20	80.93
70	B8L0076-BLK1 LRB 0.25	181214P2_70	Analyte	10	4.53	5470.45	5585.20	97.95
71	1803982-01 Big Field-DW-120618 0.25704	181214P2_71	Analyte	10	4.53	4880.87	5585.20	87.39
72	1803982-02 Big Field-FB-120618 0.2393	181214P2_72	Analyte	10	4.53	5041.23	5585.20	90.26
73	1803982-03 Behind the Base-DW-120618 0.25217	181214P2_73	Analyte	10	4.53	4884.11	5585.20	87.45
74	1803982-04 Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	10	4.53	5283.75	5585.20	94.60
75	1803982-05 Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	10	4.53	4862.09	5585.20	87.05
76	1803982-06 Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	10	4.53	4619.16	5585.20	82.70
77	1803982-07 Source Blank 0.23755	181214P2_77	Analyte	10	4.53	4921.10	5585.20	88.11
78	1803982-08 DUP-1 0.23495	181214P2_78	Analyte	10	4.53	5188.40	5585.20	92.90
79	IPA	181214P2_79	Analyte	10			5585.20	0.00
80	ST181214P2-15 PFC CS3 537 18KL1010	181214P2_80	Analyte	10	4.53	5145.24	5585.20	92.12

**Compound 24: 13C4-PFOS**

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %	
1	IPA	181214P2_1	Analyte	28.7		2427.97	0.00	
2	ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Analyte	28.7	4.83	2634.12	2427.97	108.49
3	ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Analyte	28.7	4.88	2474.21	2427.97	101.90
4	ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Analyte	28.7	4.89	2396.46	2427.97	98.70
5	ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Analyte	28.7	4.89	2542.02	2427.97	104.70
6	ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Analyte	28.7	4.89	2446.03	2427.97	100.74
7	ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Analyte	28.7	4.89	2327.42	2427.97	95.86
8	ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Analyte	28.7	4.89	2298.85	2427.97	94.68
9	ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Analyte	28.7	4.89	2279.04	2427.97	93.87
10	ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Analyte	28.7	4.89	2383.92	2427.97	98.19
11	ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Analyte	28.7	4.89	2497.65	2427.97	102.87
12	IPA	181214P2_12	Analyte	28.7			2427.97	0.00
13	ST181214P2-1 PFC ICV 537 18L1013	181214P2_13	Analyte	28.7	4.89	2399.27	2427.97	98.82

14 IPA	181214P2_14	Analyte	28.7			2427.97	0.00
15 B8L0041-BS1 LFB 0.25	181214P2_15	Analyte	28.7	4.89	2125.22	2427.97	87.53
16 B8L0041-BSD1 LFBD 0.25	181214P2_16	Analyte	28.7	4.89	2409.41	2427.97	99.24
17 B8L0041-BLK1 LRB 0.25	181214P2_17	Analyte	28.7	4.89	2363.64	2427.97	97.35
18 1803878-01 WT1811300820MK 0.24527	181214P2_18	Analyte	28.7	4.89	2428.64	2427.97	100.03
19 1803878-02 WT1811300845MK 0.25171	181214P2_19	Analyte	28.7	4.89	2126.41	2427.97	87.58
20 1803878-03 WT1811300905MK 0.24661	181214P2_20	Analyte	28.7	4.89	2356.19	2427.97	97.04
21 1803878-04 WR1811300920MK 0.24349	181214P2_21	Analyte	28.7	4.89	2048.85	2427.97	84.39
22 1803878-05 WT1811300950MK 0.25023	181214P2_22	Analyte	28.7	4.89	2376.65	2427.97	97.89
23 1803878-06 WT1811301010MK 0.2468	181214P2_23	Analyte	28.7	4.89	2296.95	2427.97	94.60
24 1803878-07 WT1811301025MK 0.23971	181214P2_24	Analyte	28.7	4.89	2118.64	2427.97	87.26
25 1803878-08 WT1811301040MK 0.2446	181214P2_25	Analyte	28.7	4.89	2421.06	2427.97	99.72
26 1803878-09 FB1811301045MK 0.25516	181214P2_26	Analyte	28.7	4.89	2015.51	2427.97	83.01
27 1803878-10 WT1811301100MK 0.2446	181214P2_27	Analyte	28.7	4.89	2095.58	2427.97	86.31
28 1803878-11 WT1811301120MK 0.2477	181214P2_28	Analyte	28.7	4.89	2308.14	2427.97	95.06
29 IPA	181214P2_29	Analyte	28.7			2427.97	0.00
30 ST181214P2-11 PFC CS1 537 18L1008	181214P2_30	Analyte	28.7	4.89	2442.44	2427.97	100.60
31 1803878-12 WT1811301140MK 0.24383	181214P2_31	Analyte	28.7	4.89	2233.16	2427.97	91.98
32 1803878-13 WT1811301150MK 0.24654	181214P2_32	Analyte	28.7	4.89	2045.90	2427.97	84.26
33 1803878-14 WT1811301315MK 0.25211	181214P2_33	Analyte	28.7	4.89	2239.89	2427.97	92.25
34 1803878-15 WT1811301330MK 0.24884	181214P2_34	Analyte	28.7	4.89	2315.54	2427.97	95.37
35 1803878-16 WR1811301345MK 0.25171	181214P2_35	Analyte	28.7	4.89	2305.55	2427.97	94.96
36 1803878-17 WT1811301400MK 0.24492	181214P2_36	Analyte	28.7	4.89	2301.16	2427.97	94.78
37 1803878-18 WT1811301415MK 0.24658	181214P2_37	Analyte	28.7	4.89	2099.52	2427.97	86.47
38 1803878-19 WSOFT1811301435MK 0.24926	181214P2_38	Analyte	28.7	4.89	2095.55	2427.97	86.31
39 1803878-20 WT1811301445MK 0.24626	181214P2_39	Analyte	28.7	4.89	2371.07	2427.97	97.66
40 B8L0013-BS1 LFB 0.25	181214P2_40	Analyte	28.7	4.9	1995.27	2427.97	82.18
41 B8L0013-BSD1 LFBD 0.25	181214P2_41	Analyte	28.7	4.89	2424.71	2427.97	99.87
42 B8L0013-BLK1 LRB 0.25	181214P2_42	Analyte	28.7	4.89	2234.81	2427.97	92.04
43 1803817-01 GWNT1811280950KME 0.24493	181214P2_43	Analyte	28.7	4.89	2205.92	2427.97	90.85
44 IPA	181214P2_44	Analyte	28.7			2427.97	0.00
45 ST181214P2-12 PFC CS3 537 18KL1010	181214P2_45	Analyte	28.7	4.89	2301.24	2427.97	94.78
46 1803818-01 GWNT1811280800KME 0.24929	181214P2_46	Analyte	28.7	4.89	2345.57	2427.97	96.61
47 1803819-01 GWNT1811280820KME 0.24765	181214P2_47	Analyte	28.7	4.89	2122.40	2427.97	87.41

48	1803820-01	GWNT1811280915KME 0.25031	181214P2_48	Analyte	28.7	4.89	2323.69	2427.97	95.70
49	1803822-01	GWEF1811281305KME 0.24372	181214P2_49	Analyte	28.7	4.89	2362.99	2427.97	97.32
50	1803823-01	GWEF1811281335KME 0.2504	181214P2_50	Analyte	28.7	4.89	2244.16	2427.97	92.43
51	1803824-01	GWEF1811281400KME 0.24525	181214P2_51	Analyte	28.7	4.89	2152.84	2427.97	88.67
52	1803827-01	GWEF1811271130KER 0.2417	181214P2_52	Analyte	28.7	4.9	1980.09	2427.97	81.55
53	1803828-01	GWEF1811271310KER 0.25159	181214P2_53	Analyte	28.7	4.89	2102.28	2427.97	86.59
54	1803829-01	GWEF1811271350KER 0.24889	181214P2_54	Analyte	28.7	4.89	2068.58	2427.97	85.20
55	1803830-01	GWEF1811271420KER 0.24604	181214P2_55	Analyte	28.7	4.89	1965.98	2427.97	80.97
56	IPA		181214P2_56	Analyte	28.7			2427.97	0.00
57	ST181214P2-13	PFC CS-1 537 18L1006	181214P2_57	Analyte	28.7	4.89	2342.73	2427.97	96.49
58	1803831-01	GWEF1811280900KER 0.24827	181214P2_58	Analyte	28.7	4.89	2283.05	2427.97	94.03
59	1803832-01	GWEF1811280940KER 0.24557	181214P2_59	Analyte	28.7	4.89	2050.23	2427.97	84.44
60	1803833-01	GWEF1811281020KER 0.24841	181214P2_60	Analyte	28.7	4.89	1922.97	2427.97	79.20
61	1803834-01	GWNT1811281050KER 0.24175	181214P2_61	Analyte	28.7	4.89	1766.54	2427.97	72.76
62	1803835-01	GWEF1811281140KER 0.25161	181214P2_62	Analyte	28.7	4.89	2319.96	2427.97	95.55
63	1803836-01	GWEF1811281220KER 0.24895	181214P2_63	Analyte	28.7	4.89	2176.98	2427.97	89.66
64	1803837-01	GWEF1811281400KER 0.24721	181214P2_64	Analyte	28.7	4.89	2406.51	2427.97	99.12
65	IPA		181214P2_65	Analyte	28.7			2427.97	0.00
66	ST181214P2-14	PFC CS1 537 18L1008	181214P2_66	Analyte	28.7	4.89	2502.48	2427.97	103.07
67	B8L0076-BS1	LFB 0.25	181214P2_67	Analyte	28.7	4.89	2131.33	2427.97	87.78
68	B8L0076-MS1	LFSM 0.25052	181214P2_68	Analyte	28.7	4.89	2096.82	2427.97	86.36
69	B8L0076-MSD1	LFSMD 0.24755	181214P2_69	Analyte	28.7	4.89	1972.86	2427.97	81.26
70	B8L0076-BLK1	LRB 0.25	181214P2_70	Analyte	28.7	4.89	2344.43	2427.97	96.56
71	1803982-01	Big Field-DW-120618 0.25704	181214P2_71	Analyte	28.7	4.89	2089.69	2427.97	86.07
72	1803982-02	Big Field-FB-120618 0.2393	181214P2_72	Analyte	28.7	4.89	2185.81	2427.97	90.03
73	1803982-03	Behind the Base-DW-120618 0.25217	181214P2_73	Analyte	28.7	4.89	1958.74	2427.97	80.67
74	1803982-04	Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	28.7	4.89	2069.11	2427.97	85.22
75	1803982-05	Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	28.7	4.89	2259.46	2427.97	93.06
76	1803982-06	Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	28.7	4.89	1981.12	2427.97	81.60
77	1803982-07	Source Blank 0.23755	181214P2_77	Analyte	28.7	4.89	2175.76	2427.97	89.61
78	1803982-08	DUP-1 0.23495	181214P2_78	Analyte	28.7	4.89	1743.59	2427.97	71.81
79	IPA		181214P2_79	Analyte	28.7			2427.97	0.00
80	ST181214P2-15	PFC CS3 537 18KL1010	181214P2_80	Analyte	28.7	4.89	2270.15	2427.97	93.50

**Compound 25: d3-N-MeFOSAA**

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %
1 IPA	181214P2_1	Analyte	40			10073.75	0.00
2 ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Analyte	40	5.15	10104.30	10073.75	100.30
3 ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Analyte	40	5.21	9958.87	10073.75	98.86
4 ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Analyte	40	5.21	9410.29	10073.75	93.41
5 ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Analyte	40	5.21	10550.82	10073.75	104.74
6 ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Analyte	40	5.21	10229.69	10073.75	101.55
7 ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Analyte	40	5.22	10503.69	10073.75	104.27
8 ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Analyte	40	5.22	10232.06	10073.75	101.57
9 ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Analyte	40	5.22	9633.88	10073.75	95.63
10 ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Analyte	40	5.22	9886.29	10073.75	98.14
11 ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Analyte	40	5.21	10227.56	10073.75	101.53
12 IPA	181214P2_12	Analyte	40			10073.75	0.00
13 ST181214P2-1 PFC ICV 537 18L1013	181214P2_13	Analyte	40	5.22	10273.15	10073.75	101.98
14 IPA	181214P2_14	Analyte	40			10073.75	0.00
15 B8L0041-BS1 LFB 0.25	181214P2_15	Analyte	40	5.21	9115.06	10073.75	90.48
16 B8L0041-BSD1 LFB 0.25	181214P2_16	Analyte	40	5.21	10610.99	10073.75	105.33
17 B8L0041-BLK1 LRB 0.25	181214P2_17	Analyte	40	5.22	10288.84	10073.75	102.14
18 1803878-01 WT1811300820MK 0.24527	181214P2_18	Analyte	40	5.22	9636.86	10073.75	95.66
19 1803878-02 WT1811300845MK 0.25171	181214P2_19	Analyte	40	5.22	9361.29	10073.75	92.93
20 1803878-03 WT1811300905MK 0.24661	181214P2_20	Analyte	40	5.21	10260.58	10073.75	101.85
21 1803878-04 WR1811300920MK 0.24349	181214P2_21	Analyte	40	5.22	9284.97	10073.75	92.17
22 1803878-05 WT1811300950MK 0.25023	181214P2_22	Analyte	40	5.22	10163.57	10073.75	100.89
23 1803878-06 WT1811301010MK 0.2468	181214P2_23	Analyte	40	5.22	9099.76	10073.75	90.33
24 1803878-07 WT1811301025MK 0.23971	181214P2_24	Analyte	40	5.22	9455.81	10073.75	93.87
25 1803878-08 WT1811301040MK 0.2446	181214P2_25	Analyte	40	5.22	10034.42	10073.75	99.61
26 1803878-09 FB1811301045MK 0.25516	181214P2_26	Analyte	40	5.22	8637.17	10073.75	85.74
27 1803878-10 WT1811301100MK 0.2446	181214P2_27	Analyte	40	5.22	9137.50	10073.75	90.71
28 1803878-11 WT1811301120MK 0.2477	181214P2_28	Analyte	40	5.22	10062.50	10073.75	99.89
29 IPA	181214P2_29	Analyte	40			10073.75	0.00
30 ST181214P2-11 PFC CS1 537 18L1008	181214P2_30	Analyte	40	5.22	10105.24	10073.75	100.31

31	1803878-12	WT1811301140MK 0.24383	181214P2_31	Analyte	40	5.22	9196.99	10073.75	91.30
32	1803878-13	WT1811301150MK 0.24654	181214P2_32	Analyte	40	5.22	8914.84	10073.75	88.50
33	1803878-14	WT1811301315MK 0.25211	181214P2_33	Analyte	40	5.22	10048.46	10073.75	99.75
34	1803878-15	WT1811301330MK 0.24884	181214P2_34	Analyte	40	5.22	10086.91	10073.75	100.13
35	1803878-16	WR1811301345MK 0.25171	181214P2_35	Analyte	40	5.22	9863.04	10073.75	97.91
36	1803878-17	WT1811301400MK 0.24492	181214P2_36	Analyte	40	5.22	9882.39	10073.75	98.10
37	1803878-18	WT1811301415MK 0.24658	181214P2_37	Analyte	40	5.22	8840.44	10073.75	87.76
38	1803878-19	WSOFT1811301435MK 0.24926	181214P2_38	Analyte	40	5.22	7971.14	10073.75	79.13
39	1803878-20	WT1811301445MK 0.24626	181214P2_39	Analyte	40	5.22	9869.17	10073.75	97.97
40	B8L0013-BS1	LFB 0.25	181214P2_40	Analyte	40	5.22	9035.29	10073.75	89.69
41	B8L0013-BSD1	LFB 0.25	181214P2_41	Analyte	40	5.22	9982.30	10073.75	99.09
42	B8L0013-BLK1	LRB 0.25	181214P2_42	Analyte	40	5.22	10380.13	10073.75	103.04
43	1803817-01	GWNT1811280950KME 0.24493	181214P2_43	Analyte	40	5.22	9294.44	10073.75	92.26
44	IPA		181214P2_44	Analyte	40			10073.75	0.00
45	ST181214P2-12	PFC CS3 537 18KL1010	181214P2_45	Analyte	40	5.22	10381.91	10073.75	103.06
46	1803818-01	GWNT1811280800KME 0.24929	181214P2_46	Analyte	40	5.22	9738.68	10073.75	96.67
47	1803819-01	GWNT1811280820KME 0.24765	181214P2_47	Analyte	40	5.22	9209.04	10073.75	91.42
48	1803820-01	GWNT1811280915KME 0.25031	181214P2_48	Analyte	40	5.22	9492.97	10073.75	94.23
49	1803822-01	GWEF1811281305KME 0.24372	181214P2_49	Analyte	40	5.22	9703.97	10073.75	96.33
50	1803823-01	GWEF1811281335KME 0.2504	181214P2_50	Analyte	40	5.22	9528.81	10073.75	94.59
51	1803824-01	GWEF1811281400KME 0.24525	181214P2_51	Analyte	40	5.22	9912.99	10073.75	98.40
52	1803827-01	GWEF1811271130KER 0.2417	181214P2_52	Analyte	40	5.22	8355.82	10073.75	82.95
53	1803828-01	GWEF1811271310KER 0.25159	181214P2_53	Analyte	40	5.22	9159.32	10073.75	90.92
54	1803829-01	GWEF1811271350KER 0.24889	181214P2_54	Analyte	40	5.22	9376.98	10073.75	93.08
55	1803830-01	GWEF1811271420KER 0.24604	181214P2_55	Analyte	40	5.22	8137.15	10073.75	80.78
56	IPA		181214P2_56	Analyte	40			10073.75	0.00
57	ST181214P2-13	PFC CS-1 537 18L1006	181214P2_57	Analyte	40	5.22	11037.77	10073.75	109.57
58	1803831-01	GWEF1811280900KER 0.24827	181214P2_58	Analyte	40	5.22	9411.75	10073.75	93.43
59	1803832-01	GWEF1811280940KER 0.24557	181214P2_59	Analyte	40	5.22	9473.37	10073.75	94.04
60	1803833-01	GWEF1811281020KER 0.24841	181214P2_60	Analyte	40	5.22	8610.31	10073.75	85.47
61	1803834-01	GWNT1811281050KER 0.24175	181214P2_61	Analyte	40	5.22	8353.20	10073.75	82.92
62	1803835-01	GWEF1811281140KER 0.25161	181214P2_62	Analyte	40	5.22	9474.66	10073.75	94.05
63	1803836-01	GWEF1811281220KER 0.24895	181214P2_63	Analyte	40	5.22	9559.01	10073.75	94.89
64	1803837-01	GWEF1811281400KER 0.24721	181214P2_64	Analyte	40	5.22	9774.84	10073.75	97.03

65 IPA	181214P2_65	Analyte	40			10073.75	0.00
66 ST181214P2-14 PFC CS1 537 18L1008	181214P2_66	Analyte	40	5.22	10007.45	10073.75	99.34
67 B8L0076-BS1 LFB 0.25	181214P2_67	Analyte	40	5.22	9193.47	10073.75	91.26
68 B8L0076-MS1 LFSM 0.25052	181214P2_68	Analyte	40	5.22	9498.71	10073.75	94.29
69 B8L0076-MSD1 LFSMD 0.24755	181214P2_69	Analyte	40	5.22	8158.90	10073.75	80.99
70 B8L0076-BLK1 LRB 0.25	181214P2_70	Analyte	40	5.22	9723.78	10073.75	96.53
71 1803982-01 Big Field-DW-120618 0.25704	181214P2_71	Analyte	40	5.22	8802.44	10073.75	87.38
72 1803982-02 Big Field-FB-120618 0.2393	181214P2_72	Analyte	40	5.22	9362.02	10073.75	92.93
73 1803982-03 Behind the Base-DW-120618 0.25217	181214P2_73	Analyte	40	5.22	8603.45	10073.75	85.40
74 1803982-04 Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	40	5.22	9847.01	10073.75	97.75
75 1803982-05 Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	40	5.22	9216.67	10073.75	91.49
76 1803982-06 Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	40	5.22	8885.12	10073.75	88.20
77 1803982-07 Source Blank 0.23755	181214P2_77	Analyte	40	5.22	8962.06	10073.75	88.96
78 1803982-08 DUP-1 0.23495	181214P2_78	Analyte	40	5.22	9635.11	10073.75	95.65
79 IPA	181214P2_79	Analyte	40			10073.75	0.00
80 ST181214P2-15 PFC CS3 537 18KL1010	181214P2_80	Analyte	40	5.22	10239.01	10073.75	101.64

## CCAL

### Compound 23: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %
29 IPA	181214P2_29	Analyte	10			5646.00	0.00
<b>30 ST181214P2-11 PFC CS1 537 18L1008</b>	<b>181214P2_30</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>5646.00</b>	<b>5646.00</b>	<b>100.00</b>
31 1803878-12 WT1811301140MK 0.24383	181214P2_31	Analyte	10	4.53	5336.76	5646.00	94.52
32 1803878-13 WT1811301150MK 0.24654	181214P2_32	Analyte	10	4.53	5291.46	5646.00	93.72
33 1803878-14 WT1811301315MK 0.25211	181214P2_33	Analyte	10	4.53	5303.75	5646.00	93.94
34 1803878-15 WT1811301330MK 0.24884	181214P2_34	Analyte	10	4.53	5467.86	5646.00	96.84
35 1803878-16 WR1811301345MK 0.25171	181214P2_35	Analyte	10	4.53	5273.13	5646.00	93.40
36 1803878-17 WT1811301400MK 0.24492	181214P2_36	Analyte	10	4.53	5732.49	5646.00	101.53
37 1803878-18 WT1811301415MK 0.24658	181214P2_37	Analyte	10	4.53	5260.92	5646.00	93.18
38 1803878-19 WSOFT1811301435MK 0.24926	181214P2_38	Analyte	10	4.53	4847.68	5646.00	85.86
39 1803878-20 WT1811301445MK 0.24626	181214P2_39	Analyte	10	4.53	5531.02	5646.00	97.96
40 B8L0013-BS1 LFB 0.25	181214P2_40	Analyte	10	4.53	5225.98	5646.00	92.56

41	B8L0013-BSD1 LFB D 0.25	181214P2_41	Analyte	10	4.53	5092.27	5646.00	90.19
42	B8L0013-BLK1 LRB 0.25	181214P2_42	Analyte	10	4.53	5385.12	5646.00	95.38
43	1803817-01 GWNT1811280950KME 0.24493	181214P2_43	Analyte	10	4.53	5004.40	5646.00	88.64
44	IPA	181214P2_44	Analyte	10			5646.00	0.00
45	ST181214P2-12 PFC CS3 537 18KL1010	181214P2_45	Analyte	10	4.53	5538.98	5646.00	98.10
<b>45</b>	<b>ST181214P2-12 PFC CS3 537 18KL1010</b>	<b>181214P2_45</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>5538.98</b>	<b>5538.98</b>	<b>100.00</b>
46	1803818-01 GWNT1811280800KME 0.24929	181214P2_46	Analyte	10	4.53	5183.46	5538.98	93.58
47	1803819-01 GWNT1811280820KME 0.24765	181214P2_47	Analyte	10	4.53	5013.14	5538.98	90.51
48	1803820-01 GWNT1811280915KME 0.25031	181214P2_48	Analyte	10	4.53	5329.54	5538.98	96.22
49	1803822-01 GWEF1811281305KME 0.24372	181214P2_49	Analyte	10	4.53	5498.72	5538.98	99.27
50	1803823-01 GWEF1811281335KME 0.2504	181214P2_50	Analyte	10	4.53	4835.00	5538.98	87.29
51	1803824-01 GWEF1811281400KME 0.24525	181214P2_51	Analyte	10	4.53	4905.34	5538.98	88.56
52	1803827-01 GWEF1811271130KER 0.2417	181214P2_52	Analyte	10	4.53	4663.98	5538.98	84.20
53	1803828-01 GWEF1811271310KER 0.25159	181214P2_53	Analyte	10	4.53	4778.68	5538.98	86.27
54	1803829-01 GWEF1811271350KER 0.24889	181214P2_54	Analyte	10	4.53	5002.37	5538.98	90.31
55	1803830-01 GWEF1811271420KER 0.24604	181214P2_55	Analyte	10	4.53	4471.79	5538.98	80.73
56	IPA	181214P2_56	Analyte	10			5538.98	0.00
57	ST181214P2-13 PFC CS-1 537 18L1006	181214P2_57	Analyte	10	4.53	5819.82	5538.98	105.07
<b>57</b>	<b>ST181214P2-13 PFC CS-1 537 18L1006</b>	<b>181214P2_57</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>5819.82</b>	<b>5819.82</b>	<b>100.00</b>
58	1803831-01 GWEF1811280900KER 0.24827	181214P2_58	Analyte	10	4.53	5023.35	5819.82	86.31
59	1803832-01 GWEF1811280940KER 0.24557	181214P2_59	Analyte	10	4.53	4827.91	5819.82	82.96
60	1803833-01 GWEF1811281020KER 0.24841	181214P2_60	Analyte	10	4.53	4651.43	5819.82	79.92
61	1803834-01 GWNT1811281050KER 0.24175	181214P2_61	Analyte	10	4.53	4864.03	5819.82	83.58
62	1803835-01 GWEF1811281140KER 0.25161	181214P2_62	Analyte	10	4.53	4996.22	5819.82	85.85
63	1803836-01 GWEF1811281220KER 0.24895	181214P2_63	Analyte	10	4.53	5099.75	5819.82	87.63
64	1803837-01 GWEF1811281400KER 0.24721	181214P2_64	Analyte	10	4.53	5417.83	5819.82	93.09
65	IPA	181214P2_65	Analyte	10			5819.82	0.00
66	ST181214P2-14 PFC CS1 537 18L1008	181214P2_66	Analyte	10	4.53	5619.59	5819.82	96.56
<b>66</b>	<b>ST181214P2-14 PFC CS1 537 18L1008</b>	<b>181214P2_66</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>5619.59</b>	<b>5619.59</b>	<b>100.00</b>
67	B8L0076-BS1 LFB 0.25	181214P2_67	Analyte	10	4.53	4936.00	5619.59	87.84
68	B8L0076-MS1 LFSM 0.25052	181214P2_68	Analyte	10	4.53	4877.15	5619.59	86.79



69	B8L0076-MSD1 LFSMD 0.24755	181214P2_69	Analyte	10	4.53	4520.34	5619.59	80.44
70	B8L0076-BLK1 LRB 0.25	181214P2_70	Analyte	10	4.53	5470.45	5619.59	97.35
71	1803982-01 Big Field-DW-120618 0.25704	181214P2_71	Analyte	10	4.53	4880.87	5619.59	86.85
72	1803982-02 Big Field-FB-120618 0.2393	181214P2_72	Analyte	10	4.53	5041.23	5619.59	89.71
73	1803982-03 Behind the Base-DW-120618 0.25217	181214P2_73	Analyte	10	4.53	4884.11	5619.59	86.91
74	1803982-04 Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	10	4.53	5283.75	5619.59	94.02
75	1803982-05 Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	10	4.53	4862.09	5619.59	86.52
76	1803982-06 Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	10	4.53	4619.16	5619.59	82.20
77	1803982-07 Source Blank 0.23755	181214P2_77	Analyte	10	4.53	4921.10	5619.59	87.57
78	1803982-08 DUP-1 0.23495	181214P2_78	Analyte	10	4.53	5188.40	5619.59	92.33
79	IPA	181214P2_79	Analyte	10			5619.59	0.00
80	ST181214P2-15 PFC CS3 537 18KL1010	181214P2_80	Analyte	10	4.53	5145.24	5619.59	91.56

**Compound 24: 13C4-PFOS**

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %	
29	IPA	181214P2_29	Analyte	28.7		2442.44	0.00	
<b>30</b>	<b>ST181214P2-11 PFC CS1 537 18L1008</b>	<b>181214P2_30</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>2442.44</b>	<b>2442.44</b>	<b>100.00</b>
31	1803878-12 WT1811301140MK 0.24383	181214P2_31	Analyte	28.7	4.89	2233.16	2442.44	91.43
32	1803878-13 WT1811301150MK 0.24654	181214P2_32	Analyte	28.7	4.89	2045.90	2442.44	83.76
33	1803878-14 WT1811301315MK 0.25211	181214P2_33	Analyte	28.7	4.89	2239.89	2442.44	91.71
34	1803878-15 WT1811301330MK 0.24884	181214P2_34	Analyte	28.7	4.89	2315.54	2442.44	94.80
35	1803878-16 WR1811301345MK 0.25171	181214P2_35	Analyte	28.7	4.89	2305.55	2442.44	94.40
36	1803878-17 WT1811301400MK 0.24492	181214P2_36	Analyte	28.7	4.89	2301.16	2442.44	94.22
37	1803878-18 WT1811301415MK 0.24658	181214P2_37	Analyte	28.7	4.89	2099.52	2442.44	85.96
38	1803878-19 WSOFT1811301435MK 0.24926	181214P2_38	Analyte	28.7	4.89	2095.55	2442.44	85.80
39	1803878-20 WT1811301445MK 0.24626	181214P2_39	Analyte	28.7	4.89	2371.07	2442.44	97.08
40	B8L0013-BS1 LFB 0.25	181214P2_40	Analyte	28.7	4.9	1995.27	2442.44	81.69
41	B8L0013-BSD1 LFB 0.25	181214P2_41	Analyte	28.7	4.89	2424.71	2442.44	99.27
42	B8L0013-BLK1 LRB 0.25	181214P2_42	Analyte	28.7	4.89	2234.81	2442.44	91.50
43	1803817-01 GWNT1811280950KME 0.24493	181214P2_43	Analyte	28.7	4.89	2205.92	2442.44	90.32
44	IPA	181214P2_44	Analyte	28.7			2442.44	0.00
45	ST181214P2-12 PFC CS3 537 18KL1010	181214P2_45	Analyte	28.7	4.89	2301.24	2442.44	94.22

<b>45 ST181214P2-12 PFC CS3 537 18KL1010</b>	<b>181214P2_45 Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>2301.24</b>	<b>2301.24</b>	<b>100.00</b>
46 1803818-01 GWNT1811280800KME 0.24929	181214P2_46 Analyte	28.7	4.89	2345.57	2301.24	101.93
47 1803819-01 GWNT1811280820KME 0.24765	181214P2_47 Analyte	28.7	4.89	2122.40	2301.24	92.23
48 1803820-01 GWNT1811280915KME 0.25031	181214P2_48 Analyte	28.7	4.89	2323.69	2301.24	100.98
49 1803822-01 GWEF1811281305KME 0.24372	181214P2_49 Analyte	28.7	4.89	2362.99	2301.24	102.68
50 1803823-01 GWEF1811281335KME 0.2504	181214P2_50 Analyte	28.7	4.89	2244.16	2301.24	97.52
51 1803824-01 GWEF1811281400KME 0.24525	181214P2_51 Analyte	28.7	4.89	2152.84	2301.24	93.55
52 1803827-01 GWEF1811271130KER 0.2417	181214P2_52 Analyte	28.7	4.9	1980.09	2301.24	86.04
53 1803828-01 GWEF1811271310KER 0.25159	181214P2_53 Analyte	28.7	4.89	2102.28	2301.24	91.35
54 1803829-01 GWEF1811271350KER 0.24889	181214P2_54 Analyte	28.7	4.89	2068.58	2301.24	89.89
55 1803830-01 GWEF1811271420KER 0.24604	181214P2_55 Analyte	28.7	4.89	1965.98	2301.24	85.43
56 IPA	181214P2_56 Analyte	28.7			2301.24	0.00
57 ST181214P2-13 PFC CS-1 537 18L1006	181214P2_57 Analyte	28.7	4.89	2342.73	2301.24	101.80
<b>57 ST181214P2-13 PFC CS-1 537 18L1006</b>	<b>181214P2_57 Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>2342.73</b>	<b>2342.73</b>	<b>100.00</b>
58 1803831-01 GWEF1811280900KER 0.24827	181214P2_58 Analyte	28.7	4.89	2283.05	2342.73	97.45
59 1803832-01 GWEF1811280940KER 0.24557	181214P2_59 Analyte	28.7	4.89	2050.23	2342.73	87.51
60 1803833-01 GWEF1811281020KER 0.24841	181214P2_60 Analyte	28.7	4.89	1922.97	2342.73	82.08
61 1803834-01 GWNT1811281050KER 0.24175	181214P2_61 Analyte	28.7	4.89	1766.54	2342.73	75.41
62 1803835-01 GWEF1811281140KER 0.25161	181214P2_62 Analyte	28.7	4.89	2319.96	2342.73	99.03
63 1803836-01 GWEF1811281220KER 0.24895	181214P2_63 Analyte	28.7	4.89	2176.98	2342.73	92.92
64 1803837-01 GWEF1811281400KER 0.24721	181214P2_64 Analyte	28.7	4.89	2406.51	2342.73	102.72
65 IPA	181214P2_65 Analyte	28.7			2342.73	0.00
66 ST181214P2-14 PFC CS1 537 18L1008	181214P2_66 Analyte	28.7	4.89	2502.48	2342.73	106.82
<b>66 ST181214P2-14 PFC CS1 537 18L1008</b>	<b>181214P2_66 Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>2502.48</b>	<b>2502.48</b>	<b>100.00</b>
67 B8L0076-BS1 LFB 0.25	181214P2_67 Analyte	28.7	4.89	2131.33	2502.48	85.17
68 B8L0076-MS1 LFSM 0.25052	181214P2_68 Analyte	28.7	4.89	2096.82	2502.48	83.79
69 B8L0076-MSD1 LFSMD 0.24755	181214P2_69 Analyte	28.7	4.89	1972.86	2502.48	78.84
70 B8L0076-BLK1 LRB 0.25	181214P2_70 Analyte	28.7	4.89	2344.43	2502.48	93.68
71 1803982-01 Big Field-DW-120618 0.25704	181214P2_71 Analyte	28.7	4.89	2089.69	2502.48	83.50
72 1803982-02 Big Field-FB-120618 0.2393	181214P2_72 Analyte	28.7	4.89	2185.81	2502.48	87.35
73 1803982-03 Behind the Base-DW-120618 0.25217	181214P2_73 Analyte	28.7	4.89	1958.74	2502.48	78.27

74	1803982-04 Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	28.7	4.89	2069.11	2502.48	82.68
75	1803982-05 Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	28.7	4.89	2259.46	2502.48	90.29
76	1803982-06 Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	28.7	4.89	1981.12	2502.48	79.17
77	1803982-07 Source Blank 0.23755	181214P2_77	Analyte	28.7	4.89	2175.76	2502.48	86.94
78	1803982-08 DUP-1 0.23495	181214P2_78	Analyte	28.7	4.89	1743.59	2502.48	69.67
79	IPA	181214P2_79	Analyte	28.7			2502.48	0.00
80	ST181214P2-15 PFC CS3 537 18KL1010	181214P2_80	Analyte	28.7	4.89	2270.15	2502.48	90.72

**Compound 25: d3-N-MeFOSAA**

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %	
29	IPA	181214P2_29	Analyte	40		10105.24	0.00	
<b>30</b>	<b>ST181214P2-11 PFC CS1 537 18L1008</b>	<b>181214P2_30</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>10105.24</b>	<b>10105.24</b>	<b>100.00</b>
31	1803878-12 WT1811301140MK 0.24383	181214P2_31	Analyte	40	5.22	9196.99	10105.24	91.01
32	1803878-13 WT1811301150MK 0.24654	181214P2_32	Analyte	40	5.22	8914.84	10105.24	88.22
33	1803878-14 WT1811301315MK 0.25211	181214P2_33	Analyte	40	5.22	10048.46	10105.24	99.44
34	1803878-15 WT1811301330MK 0.24884	181214P2_34	Analyte	40	5.22	10086.91	10105.24	99.82
35	1803878-16 WR1811301345MK 0.25171	181214P2_35	Analyte	40	5.22	9863.04	10105.24	97.60
36	1803878-17 WT1811301400MK 0.24492	181214P2_36	Analyte	40	5.22	9882.39	10105.24	97.79
37	1803878-18 WT1811301415MK 0.24658	181214P2_37	Analyte	40	5.22	8840.44	10105.24	87.48
38	1803878-19 WSOFT1811301435MK 0.24926	181214P2_38	Analyte	40	5.22	7971.14	10105.24	78.88
39	1803878-20 WT1811301445MK 0.24626	181214P2_39	Analyte	40	5.22	9869.17	10105.24	97.66
40	B8L0013-BS1 LFB 0.25	181214P2_40	Analyte	40	5.22	9035.29	10105.24	89.41
41	B8L0013-BSD1 LFB 0.25	181214P2_41	Analyte	40	5.22	9982.30	10105.24	98.78
42	B8L0013-BLK1 LRB 0.25	181214P2_42	Analyte	40	5.22	10380.13	10105.24	102.72
43	1803817-01 GWNT1811280950KME 0.24493	181214P2_43	Analyte	40	5.22	9294.44	10105.24	91.98
44	IPA	181214P2_44	Analyte	40			10105.24	0.00
45	ST181214P2-12 PFC CS3 537 18KL1010	181214P2_45	Analyte	40	5.22	10381.91	10105.24	102.74
<b>45</b>	<b>ST181214P2-12 PFC CS3 537 18KL1010</b>	<b>181214P2_45</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>10381.91</b>	<b>10381.91</b>	<b>100.00</b>
46	1803818-01 GWNT1811280800KME 0.24929	181214P2_46	Analyte	40	5.22	9738.68	10381.91	93.80
47	1803819-01 GWNT1811280820KME 0.24765	181214P2_47	Analyte	40	5.22	9209.04	10381.91	88.70
48	1803820-01 GWNT1811280915KME 0.25031	181214P2_48	Analyte	40	5.22	9492.97	10381.91	91.44

49	1803822-01 GWEF1811281305KME 0.24372	181214P2_49	Analyte	40	5.22	9703.97	10381.91	93.47
50	1803823-01 GWEF1811281335KME 0.2504	181214P2_50	Analyte	40	5.22	9528.81	10381.91	91.78
51	1803824-01 GWEF1811281400KME 0.24525	181214P2_51	Analyte	40	5.22	9912.99	10381.91	95.48
52	1803827-01 GWEF1811271130KER 0.2417	181214P2_52	Analyte	40	5.22	8355.82	10381.91	80.48
53	1803828-01 GWEF1811271310KER 0.25159	181214P2_53	Analyte	40	5.22	9159.32	10381.91	88.22
54	1803829-01 GWEF1811271350KER 0.24889	181214P2_54	Analyte	40	5.22	9376.98	10381.91	90.32
55	1803830-01 GWEF1811271420KER 0.24604	181214P2_55	Analyte	40	5.22	8137.15	10381.91	78.38
56	IPA	181214P2_56	Analyte	40			10381.91	0.00
57	ST181214P2-13 PFC CS-1 537 18L1006	181214P2_57	Analyte	40	5.22	11037.77	10381.91	106.32
<b>57</b>	<b>ST181214P2-13 PFC CS-1 537 18L1006</b>	<b>181214P2_57</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>11037.77</b>	<b>11037.77</b>	<b>100.00</b>
58	1803831-01 GWEF1811280900KER 0.24827	181214P2_58	Analyte	40	5.22	9411.75	11037.77	85.27
59	1803832-01 GWEF1811280940KER 0.24557	181214P2_59	Analyte	40	5.22	9473.37	11037.77	85.83
60	1803833-01 GWEF1811281020KER 0.24841	181214P2_60	Analyte	40	5.22	8610.31	11037.77	78.01
61	1803834-01 GWNT1811281050KER 0.24175	181214P2_61	Analyte	40	5.22	8353.20	11037.77	75.68
62	1803835-01 GWEF1811281140KER 0.25161	181214P2_62	Analyte	40	5.22	9474.66	11037.77	85.84
63	1803836-01 GWEF1811281220KER 0.24895	181214P2_63	Analyte	40	5.22	9559.01	11037.77	86.60
64	1803837-01 GWEF1811281400KER 0.24721	181214P2_64	Analyte	40	5.22	9774.84	11037.77	88.56
65	IPA	181214P2_65	Analyte	40			11037.77	0.00
66	ST181214P2-14 PFC CS1 537 18L1008	181214P2_66	Analyte	40	5.22	10007.45	11037.77	90.67
<b>66</b>	<b>ST181214P2-14 PFC CS1 537 18L1008</b>	<b>181214P2_66</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>10007.45</b>	<b>10007.45</b>	<b>100.00</b>
67	B8L0076-BS1 LFB 0.25	181214P2_67	Analyte	40	5.22	9193.47	10007.45	91.87
68	B8L0076-MS1 LFSM 0.25052	181214P2_68	Analyte	40	5.22	9498.71	10007.45	94.92
69	B8L0076-MSD1 LFSMD 0.24755	181214P2_69	Analyte	40	5.22	8158.90	10007.45	81.53
70	B8L0076-BLK1 LRB 0.25	181214P2_70	Analyte	40	5.22	9723.78	10007.45	97.17
71	1803982-01 Big Field-DW-120618 0.25704	181214P2_71	Analyte	40	5.22	8802.44	10007.45	87.96
72	1803982-02 Big Field-FB-120618 0.2393	181214P2_72	Analyte	40	5.22	9362.02	10007.45	93.55
73	1803982-03 Behind the Base-DW-120618 0.25217	181214P2_73	Analyte	40	5.22	8603.45	10007.45	85.97
74	1803982-04 Behind the Base-FB-120618 0.25284	181214P2_74	Analyte	40	5.22	9847.01	10007.45	98.40
75	1803982-05 Shooting Range1-DW-120618 0.23899	181214P2_75	Analyte	40	5.22	9216.67	10007.45	92.10
76	1803982-06 Shooting Range1-FB-120618 0.2478	181214P2_76	Analyte	40	5.22	8885.12	10007.45	88.79
77	1803982-07 Source Blank 0.23755	181214P2_77	Analyte	40	5.22	8962.06	10007.45	89.55
78	1803982-08 DUP-1 0.23495	181214P2_78	Analyte	40	5.22	9635.11	10007.45	96.28

79 IPA	181214P2_79 Analyte	40			10007.45	0.00
80 ST181214P2-15 PFC CS3 537 18KL1010	181214P2_80 Analyte	40	5.22	10239.01	10007.45	102.31

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-66.qld

Last Altered: Saturday, December 15, 2018 11:58:58 Pacific Standard Time

Printed: Saturday, December 15, 2018 11:59:30 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_66, Date: 15-Dec-2018, Time: 01:10:09, ID: ST181214P2-14 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

*Jan  
12/16/18*

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	5.58e2	2.50e3	1.00		3.36	3.38	6.39	8.34	94.3
2	2 PFHxA	313.1 > 269.1	3.28e3	5.62e3	1.00		3.68	3.68	5.84	10.1	101.4
3	3 HFPO-DA	329>285	4.08e2	5.62e3	1.00		3.81	3.84	0.726	10.2	102.0
4	4 PFHpA	363 > 319	5.00e3	5.62e3	1.00		4.15	4.16	8.90	9.65	96.5
5	5 ADONA	377.1>251	6.30e3	5.62e3	1.00		4.20	4.23	11.2	9.13	91.3
6	6 PFHxS	399 > 80.0	6.40e2	2.50e3	1.00		4.26	4.27	7.35	8.03	88.1
7	7 PFOA	413 > 369	4.98e3	5.62e3	1.00		4.53	4.53	8.86	9.63	96.3
8	8 PFNA	463 > 419	4.33e3	5.62e3	1.00		4.85	4.84	7.71	9.20	92.0
9	9 PFOS	498.9 >80.0	6.08e2	2.50e3	1.00		4.89	4.89	6.97	7.75	83.9
10	10 9CI-PF3ONS	531.1>351.1	2.86e3	2.50e3	1.00		5.03	5.05	32.8	10.3	102.7
11	11 PFDA	513 > 469	4.38e3	5.62e3	1.00		5.11	5.11	7.80	9.37	93.7
12	12 N-MeFOSAA	570 > 419.1	2.05e3	1.00e4	1.00		5.22	5.22	8.20	9.03	90.3
13	13 N-EtFOSAA	584.0 >419.1	1.27e3	1.00e4	1.00		5.33	5.33	5.06	9.06	90.6
14	14 PFUnA	563 > 519	3.72e3	5.62e3	1.00		5.35	5.33	6.62	7.66	76.6
15	15 11CI-PF3OUdS	631.1>451.1	2.02e3	2.50e3	1.00		5.46	5.47	23.2	8.82	88.2
16	16 PFDoA	613 > 569	6.70e3	5.62e3	1.00		5.55	5.53	11.9	9.69	96.9
17	17 PFTrDA	662.9 > 619	6.89e3	5.62e3	1.00		5.71	5.70	12.3	9.24	92.4
18	18 PFTeDA	712.9 > 669	6.87e3	5.62e3	1.00		5.87	5.85	12.2	9.21	92.1
19	19 13C2-PFHxA	315.1 > 270	4.20e3	5.62e3	1.00	0.759	3.68	3.68	7.47	9.85	98.5
20	20 13C3-HFPO-DA	332>287	4.04e2	5.62e3	1.00	0.070	3.81	3.84	0.718	10.2	102.2
21	21 13C2-PFDA	515.0 > 470.0	5.70e3	5.62e3	1.00	1.052	5.12	5.11	10.1	9.65	96.5
22	22 d5-N-EtFOSAA	589.1 > 419.0	8.81e3	1.00e4	1.00	0.831	5.33	5.33	35.2	42.4	105.9
23	23 13C2-PFOA	415 > 370	5.62e3	5.62e3	1.00	1.000	4.51	4.53	10.0	10.0	100.0
24	24 13C4-PFOS	503.0 > 80	2.50e3	2.50e3	1.00	1.000	4.87	4.89	28.7	28.7	100.0
25	25 d3-N-MeFOSAA	573.1 > 419.1	1.00e4	1.00e4	1.00	1.000	5.20	5.22	40.0	40.0	100.0

*70-130%*  
↓

*12/15/18*

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

Last Altered: Saturday, December 15, 2018 12:08:21 Pacific Standard Time  
 Printed: Saturday, December 15, 2018 12:08:57 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181214P2_1	IPA	14-Dec-18	12:15:34
2	2 181214P2_2	ST181214P2-1 PFC CS-4 537 18L1003	14-Dec-18	12:26:47
3	3 181214P2_3	ST181214P2-2 PFC CS-3 537 18L1004	14-Dec-18	12:37:57
4	4 181214P2_4	ST181214P2-3 PFC CS-2 537 18L1005	14-Dec-18	12:49:08
5	5 181214P2_5	ST181214P2-4 PFC CS-1 537 18L1006	14-Dec-18	13:00:27
6	6 181214P2_6	ST181214P2-5 PFC CS0 537 18L1007	14-Dec-18	13:11:39
7	7 181214P2_7	ST181214P2-6 PFC CS1 537 18L1008	14-Dec-18	13:22:50
8	8 181214P2_8	ST181214P2-7 PFC CS2 537 18L1009	14-Dec-18	13:34:01
9	9 181214P2_9	ST181214P2-8 PFC CS3 537 18L1010	14-Dec-18	13:45:12
10	10 181214P2_10	ST181214P2-9 PFC CS4 537 18L1011	14-Dec-18	13:56:22
11	11 181214P2_11	ST181214P2-10 PFC CS5 537 18L1012	14-Dec-18	14:07:33
12	12 181214P2_12	IPA	14-Dec-18	14:18:43
13	13 181214P2_13	ST181214P2-1 PFC ICV 537 18L1013	14-Dec-18	14:29:54
14	14 181214P2_14	IPA	14-Dec-18	15:18:41
15	15 181214P2_15	B8L0041-BS1 LFB 0.25	14-Dec-18	15:30:07
16	16 181214P2_16	B8L0041-BSD1 LFB 0.25	14-Dec-18	15:45:30
17	17 181214P2_17	B8L0041-BLK1 LRB 0.25	14-Dec-18	15:56:47
18	18 181214P2_18	1803878-01 WT1811300820MK 0.24527	14-Dec-18	16:07:57
19	19 181214P2_19	1803878-02 WT1811300845MK 0.25171	14-Dec-18	16:19:16
20	20 181214P2_20	1803878-03 WT1811300905MK 0.24661	14-Dec-18	16:30:27
21	21 181214P2_21	1803878-04 WR1811300920MK 0.24349	14-Dec-18	16:41:47
22	22 181214P2_22	1803878-05 WT1811300950MK 0.25023	14-Dec-18	16:52:59
23	23 181214P2_23	1803878-06 WT1811301010MK 0.2468	14-Dec-18	17:04:10
24	24 181214P2_24	1803878-07 WT1811301025MK 0.23971	14-Dec-18	17:15:20
25	25 181214P2_25	1803878-08 WT1811301040MK 0.2446	14-Dec-18	17:26:31
26	26 181214P2_26	1803878-09 FB1811301045MK 0.25516	14-Dec-18	17:37:49
27	27 181214P2_27	1803878-10 WT1811301100MK 0.2446	14-Dec-18	17:49:01
28	28 181214P2_28	1803878-11 WT1811301120MK 0.2477	14-Dec-18	18:00:12
29	29 181214P2_29	IPA	14-Dec-18	18:11:22
30	30 181214P2_30	ST181214P2-11 PFC CS1 537 18L1008	14-Dec-18	18:23:06
31	31 181214P2_31	1803878-12 WT1811301140MK 0.24383	14-Dec-18	18:34:17
32	32 181214P2_32	1803878-13 WT1811301150MK 0.24654	14-Dec-18	18:45:35

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

Last Altered: Saturday, December 15, 2018 12:08:21 Pacific Standard Time

Printed: Saturday, December 15, 2018 12:08:57 Pacific Standard Time

Compound name: PFBS

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33	33 181214P2_33	1803878-14 WT1811301315MK 0.25211	14-Dec-18	18:56:47
34	34 181214P2_34	1803878-15 WT1811301330MK 0.24884	14-Dec-18	19:08:05
35	35 181214P2_35	1803878-16 WR1811301345MK 0.25171	14-Dec-18	19:21:16
36	36 181214P2_36	1803878-17 WT1811301400MK 0.24492	14-Dec-18	19:32:29
37	37 181214P2_37	1803878-18 WT1811301415MK 0.24658	14-Dec-18	19:43:39
38	38 181214P2_38	1803878-19 WSOFT1811301435MK 0.24926	14-Dec-18	19:54:50
39	39 181214P2_39	1803878-20 WT1811301445MK 0.24626	14-Dec-18	20:06:01
40	40 181214P2_40	B8L0013-BS1 LFB 0.25	14-Dec-18	20:17:20
41	41 181214P2_41	B8L0013-BS1 LFB 0.25	14-Dec-18	20:28:31
42	42 181214P2_42	B8L0013-BLK1 LRB 0.25	14-Dec-18	20:39:50
43	43 181214P2_43	1803817-01 GWNT1811280950KME 0.24493	14-Dec-18	20:51:02
44	44 181214P2_44	IPA	14-Dec-18	21:02:20
45	45 181214P2_45	ST181214P2-12 PFC CS3 537 18KL1010	14-Dec-18	21:13:49
46	46 181214P2_46	1803818-01 GWNT1811280800KME 0.24929	14-Dec-18	21:25:00
47	47 181214P2_47	1803819-01 GWNT1811280820KME 0.24765	14-Dec-18	21:36:10
48	48 181214P2_48	1803820-01 GWNT1811280915KME 0.25031	14-Dec-18	21:47:29
49	49 181214P2_49	1803822-01 GWEF1811281305KME 0.24372	14-Dec-18	21:58:41
50	50 181214P2_50	1803823-01 GWEF1811281335KME 0.2504	14-Dec-18	22:09:52
51	51 181214P2_51	1803824-01 GWEF1811281400KME 0.24525	14-Dec-18	22:21:03
52	52 181214P2_52	1803827-01 GWEF1811271130KER 0.2417	14-Dec-18	22:32:22
53	53 181214P2_53	1803828-01 GWEF1811271310KER 0.25159	14-Dec-18	22:43:33
54	54 181214P2_54	1803829-01 GWEF1811271350KER 0.24889	14-Dec-18	22:54:52
55	55 181214P2_55	1803830-01 GWEF1811271420KER 0.24604	14-Dec-18	23:06:04
56	56 181214P2_56	IPA	14-Dec-18	23:17:15
57	57 181214P2_57	ST181214P2-13 PFC CS-1 537 18L1006	14-Dec-18	23:28:41
58	58 181214P2_58	1803831-01 GWEF1811280900KER 0.24827	14-Dec-18	23:39:52
59	59 181214P2_59	1803832-01 GWEF1811280940KER 0.24557	14-Dec-18	23:51:11
60	60 181214P2_60	1803833-01 GWEF1811281020KER 0.24841	15-Dec-18	00:02:30
61	61 181214P2_61	1803834-01 GWNT1811281050KER 0.24175	15-Dec-18	00:13:42
62	62 181214P2_62	1803835-01 GWEF1811281140KER 0.25161	15-Dec-18	00:25:00
63	63 181214P2_63	1803836-01 GWEF1811281220KER 0.24895	15-Dec-18	00:36:12
64	64 181214P2_64	1803837-01 GWEF1811281400KER 0.24721	15-Dec-18	00:47:31
65	65 181214P2_65	IPA	15-Dec-18	00:58:42
66	66 181214P2_66	ST181214P2-14 PFC CS1 537 18L1008	15-Dec-18	01:10:09
67	67 181214P2_67	B8L0076-BS1 LFB 0.25	15-Dec-18	01:21:20
68	68 181214P2_68	B8L0076-MS1 LFSM 0.25052	15-Dec-18	01:32:30



Vista Analytical Laboratory

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

Last Altered: Saturday, December 15, 2018 12:08:21 Pacific Standard Time

Printed: Saturday, December 15, 2018 12:08:57 Pacific Standard Time

Compound name: PFBS

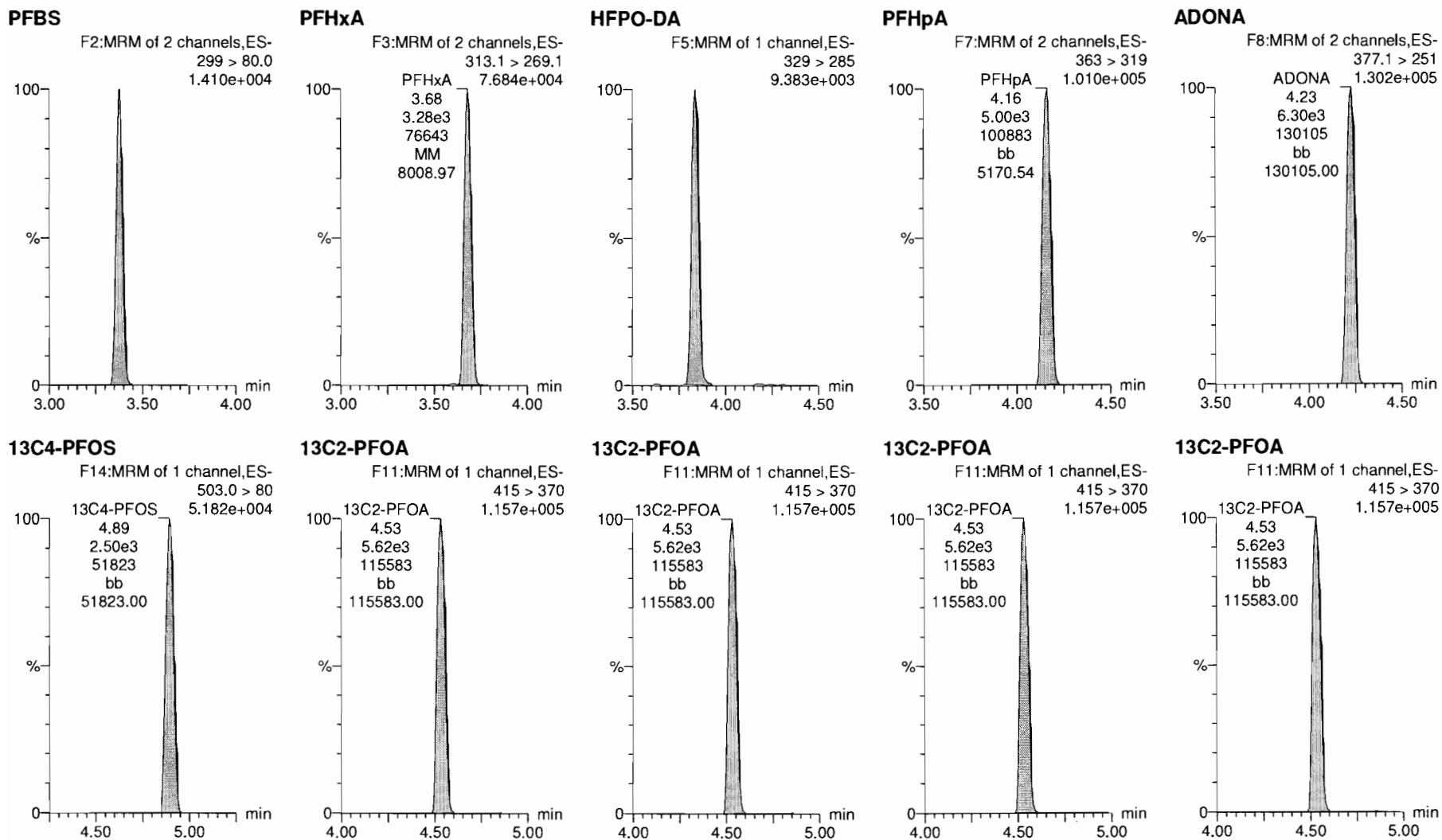
#	Name	ID	Acq.Date	Acq.Time
69	69 181214P2_69	B8L0076-MSD1 LFSMD 0.24755	15-Dec-18	01:43:41
70	70 181214P2_70	B8L0076-BLK1 LRB 0.25	15-Dec-18	01:54:52
71	71 181214P2_71	1803982-01 Big Field-DW-120618 0.25704	15-Dec-18	02:06:03
72	72 181214P2_72	1803982-02 Big Field-FB-120618 0.2393	15-Dec-18	02:17:13
73	73 181214P2_73	1803982-03 Behind the Base-DW-120618 0.25217	15-Dec-18	02:28:24
74	74 181214P2_74	1803982-04 Behind the Base-FB-120618 0.25284	15-Dec-18	02:39:35
75	75 181214P2_75	1803982-05 Shooting Range1-DW-120618 0.23899	15-Dec-18	02:50:46
76	76 181214P2_76	1803982-06 Shooting Range1-FB-120618 0.2478	15-Dec-18	03:01:57
77	77 181214P2_77	1803982-07 Source Blank 0.23755	15-Dec-18	03:13:07
78	78 181214P2_78	1803982-08 DUP-1 0.23495	15-Dec-18	03:24:18
79	79 181214P2_79	IPA	15-Dec-18	03:35:28
80	80 181214P2_80	ST181214P2-15 PFC CS3 537 18KL1010	15-Dec-18	03:46:39

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-66.qld

Last Altered: Saturday, December 15, 2018 11:58:58 Pacific Standard Time  
Printed: Saturday, December 15, 2018 11:59:30 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_66, Date: 15-Dec-2018, Time: 01:10:09, ID: ST181214P2-14 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008



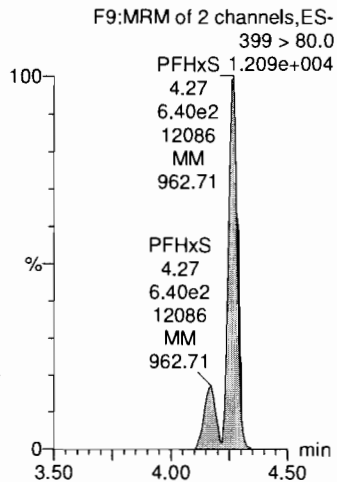
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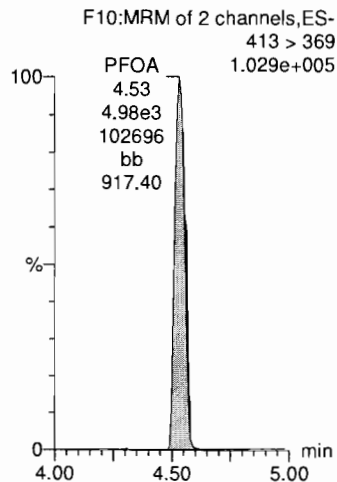
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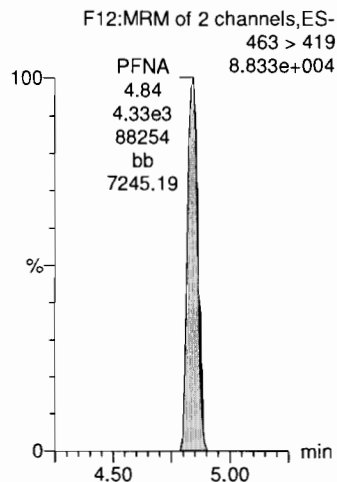
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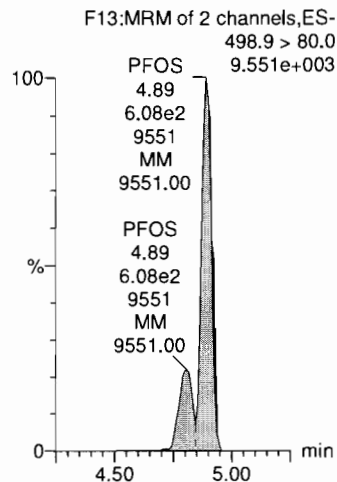
**PFOA**



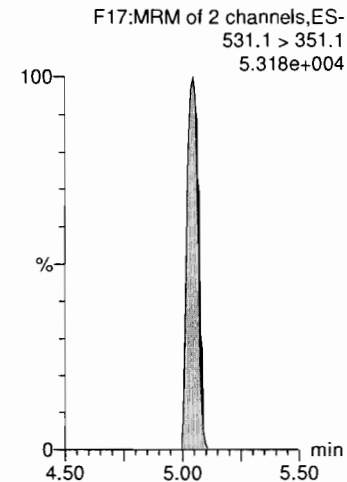
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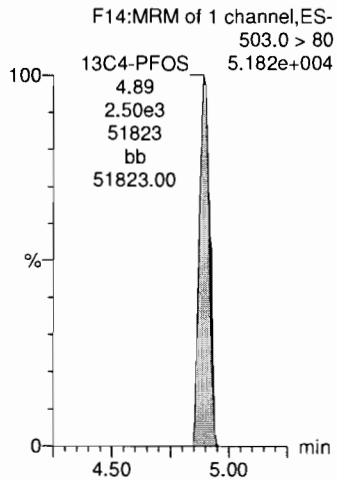
**PFOS**



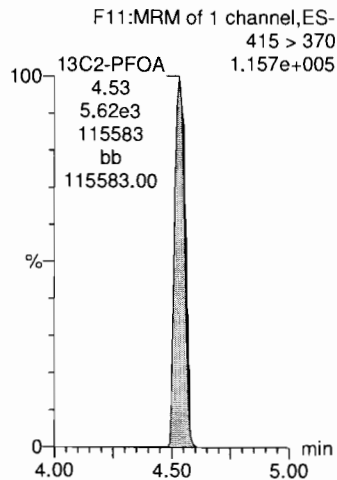
**9CI-PF3ONS**



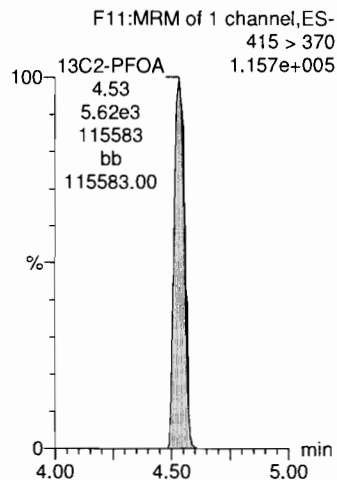
**13C4-PFOS**



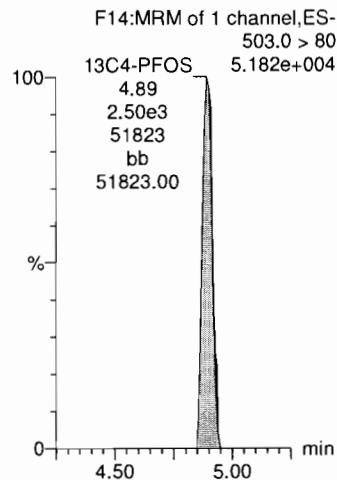
**13C2-PFOA**



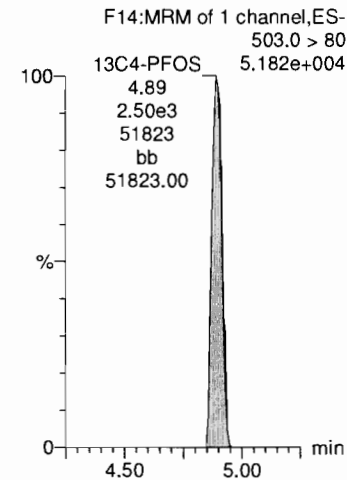
**13C2-PFOA**



**13C4-PFOS**



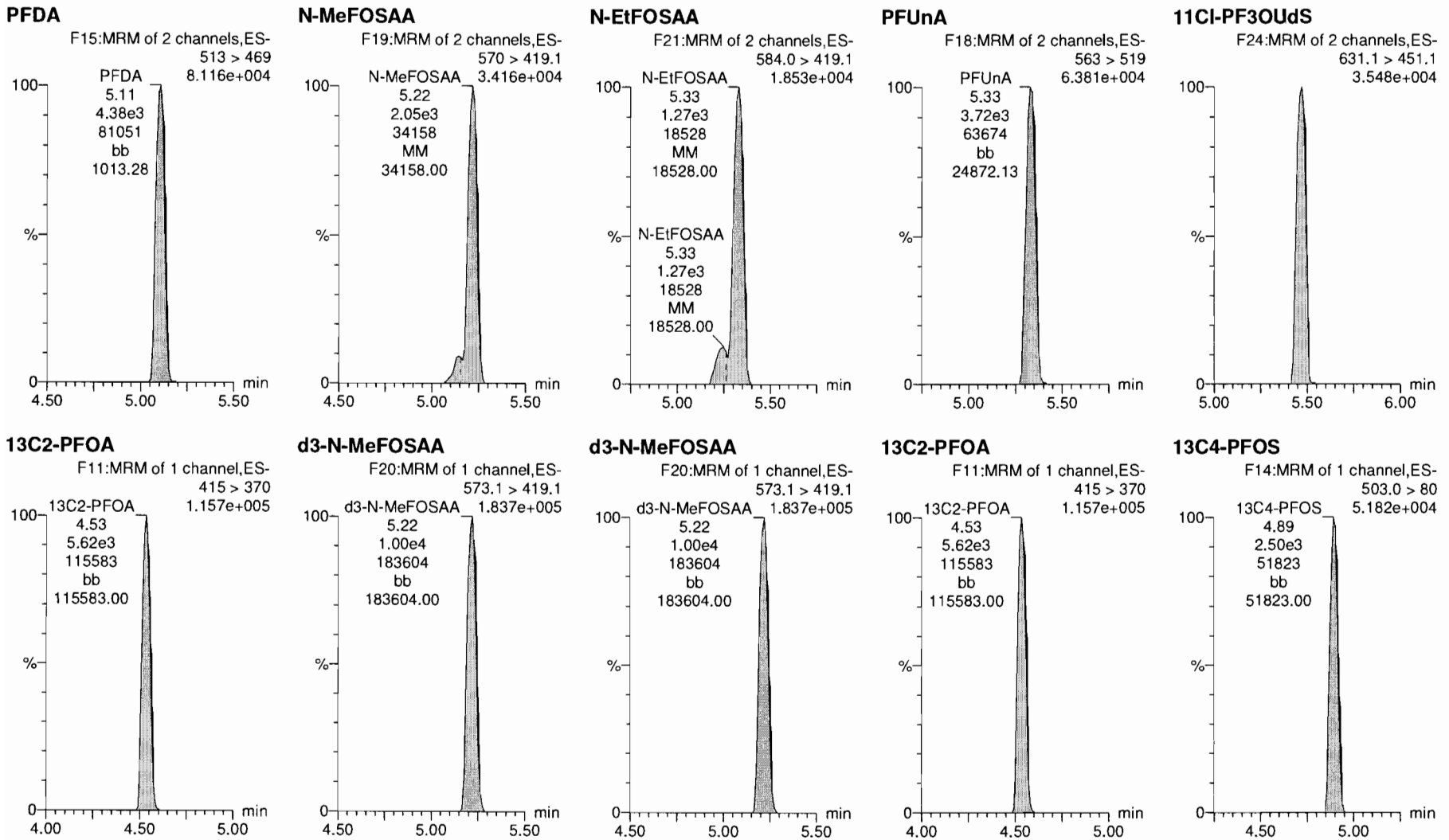
**13C4-PFOS**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-66.qld

Last Altered: Saturday, December 15, 2018 11:58:58 Pacific Standard Time  
Printed: Saturday, December 15, 2018 11:59:30 Pacific Standard Time

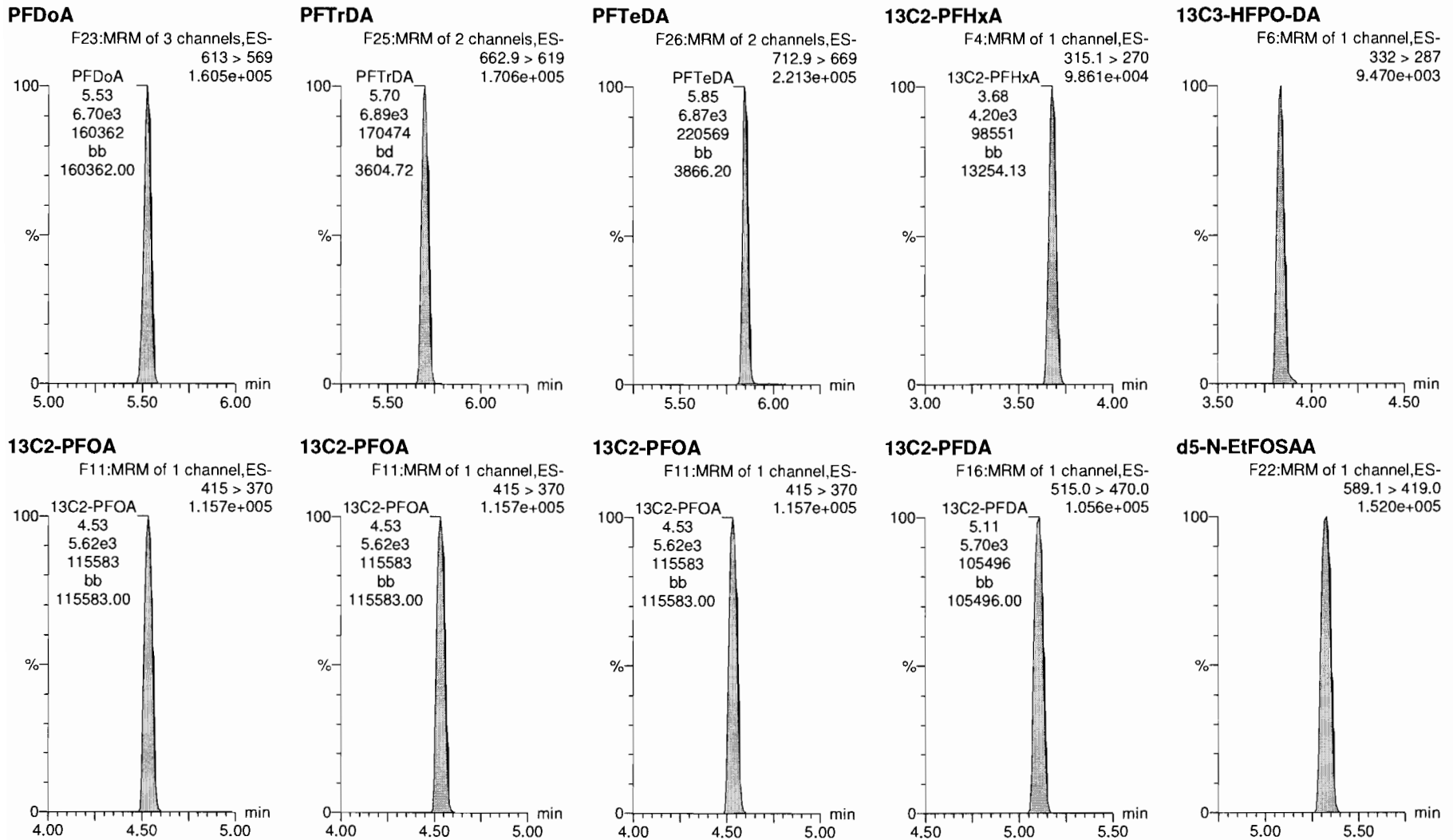
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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-66.qld

Last Altered: Saturday, December 15, 2018 11:58:58 Pacific Standard Time  
Printed: Saturday, December 15, 2018 11:59:30 Pacific Standard Time

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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-80.qld

Last Altered: Saturday, December 15, 2018 12:00:42 Pacific Standard Time

Printed: Saturday, December 15, 2018 12:01:03 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

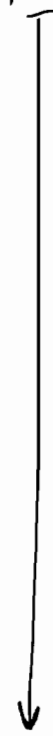
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*✓ Jm 12/14/18*

*70-130%*

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	2.86e3	2.27e3	1.00		3.36	3.38	36.2	47.1	106.7
2	2 PFHxA	313.1 > 269.1	1.60e4	5.15e3	1.00		3.68	3.68	31.1	54.1	108.1
3	3 HFPO-DA	329>285	2.18e3	5.15e3	1.00		3.81	3.84	4.24	55.4	110.7
4	4 PFHpA	363 > 319	2.49e4	5.15e3	1.00		4.15	4.16	48.3	52.4	104.8
5	5 ADONA	377.1>251	3.25e4	5.15e3	1.00		4.20	4.23	63.1	51.3	102.6
6	6 PFHxS	399 > 80.0	3.23e3	2.27e3	1.00		4.26	4.27	40.9	45.6	100.1
7	7 PFOA	413 > 369	2.51e4	5.15e3	1.00		4.53	4.53	48.9	53.1	106.2
8	8 PFNA	463 > 419	2.27e4	5.15e3	1.00		4.85	4.84	44.2	52.7	105.5
9	9 PFOS	498.9>80.0	3.46e3	2.27e3	1.00		4.89	4.89	43.7	48.5	105.1
10	10 9CI-PF3ONS	531.1>351.1	1.33e4	2.27e3	1.00		5.03	5.05	168	52.6	105.2
11	11 PFDA	513 > 469	2.22e4	5.15e3	1.00		5.11	5.11	43.2	52.5	105.0
12	12 N-MeFOSAA	570 > 419.1	1.12e4	1.02e4	1.00		5.22	5.22	43.9	50.0	100.0
13	13 N-EtFOSAA	584.0 > 419.1	7.63e3	1.02e4	1.00		5.33	5.33	29.8	46.1	92.2
14	14 PFUnA	563 > 519	2.36e4	5.15e3	1.00		5.35	5.33	45.8	53.0	106.0
15	15 11CI-PF3OUdS	631.1>451.1	1.12e4	2.27e3	1.00		5.46	5.47	141	53.6	107.3
16	16 PFDoA	613 > 569	3.20e4	5.15e3	1.00		5.55	5.53	62.2	50.6	101.1
17	17 PFTrDA	662.9 > 619	3.25e4	5.15e3	1.00		5.71	5.70	63.2	47.6	95.2
18	18 PFTeDA	712.9 > 669	3.55e4	5.15e3	1.00		5.87	5.85	69.0	52.0	104.0
19	19 13C2-PFHxA	315.1 > 270	4.24e3	5.15e3	1.00	0.759	3.68	3.68	8.25	10.9	108.7
20	20 13C3-HFPO-DA	332>287	3.84e2	5.15e3	1.00	0.070	3.81	3.84	0.747	10.6	106.3
21	21 13C2-PFDA	515.0 > 470.0	5.71e3	5.15e3	1.00	1.052	5.12	5.11	11.1	10.6	105.6
22	22 d5-N-EtFOSAA	589.1 > 419.0	8.10e3	1.02e4	1.00	0.831	5.33	5.33	31.7	38.1	95.2
23	23 13C2-PFOA	415 > 370	5.15e3	5.15e3	1.00	1.000	4.51	4.53	10.0	10.0	100.0
24	24 13C4-PFOS	503.0 > 80	2.27e3	2.27e3	1.00	1.000	4.87	4.89	28.7	28.7	100.0
25	25 d3-N-MeFOSAA	573.1 > 419.1	1.02e4	1.02e4	1.00	1.000	5.20	5.22	40.0	40.0	100.0



*✓ Jm 12/15/18*

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

Last Altered: Saturday, December 15, 2018 12:08:21 Pacific Standard Time

Printed: Saturday, December 15, 2018 12:08:57 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181214P2_1	IPA	14-Dec-18	12:15:34
2	2 181214P2_2	ST181214P2-1 PFC CS-4 537 18L1003	14-Dec-18	12:26:47
3	3 181214P2_3	ST181214P2-2 PFC CS-3 537 18L1004	14-Dec-18	12:37:57
4	4 181214P2_4	ST181214P2-3 PFC CS-2 537 18L1005	14-Dec-18	12:49:08
5	5 181214P2_5	ST181214P2-4 PFC CS-1 537 18L1006	14-Dec-18	13:00:27
6	6 181214P2_6	ST181214P2-5 PFC CS0 537 18L1007	14-Dec-18	13:11:39
7	7 181214P2_7	ST181214P2-6 PFC CS1 537 18L1008	14-Dec-18	13:22:50
8	8 181214P2_8	ST181214P2-7 PFC CS2 537 18L1009	14-Dec-18	13:34:01
9	9 181214P2_9	ST181214P2-8 PFC CS3 537 18L1010	14-Dec-18	13:45:12
10	10 181214P2_10	ST181214P2-9 PFC CS4 537 18L1011	14-Dec-18	13:56:22
11	11 181214P2_11	ST181214P2-10 PFC CS5 537 18L1012	14-Dec-18	14:07:33
12	12 181214P2_12	IPA	14-Dec-18	14:18:43
13	13 181214P2_13	ST181214P2-1 PFC ICV 537 18L1013	14-Dec-18	14:29:54
14	14 181214P2_14	IPA	14-Dec-18	15:18:41
15	15 181214P2_15	B8L0041-BS1 LFB 0.25	14-Dec-18	15:30:07
16	16 181214P2_16	B8L0041-BSD1 LFB 0.25	14-Dec-18	15:45:30
17	17 181214P2_17	B8L0041-BLK1 LRB 0.25	14-Dec-18	15:56:47
18	18 181214P2_18	1803878-01 WT1811300820MK 0.24527	14-Dec-18	16:07:57
19	19 181214P2_19	1803878-02 WT1811300845MK 0.25171	14-Dec-18	16:19:16
20	20 181214P2_20	1803878-03 WT1811300905MK 0.24661	14-Dec-18	16:30:27
21	21 181214P2_21	1803878-04 WR1811300920MK 0.24349	14-Dec-18	16:41:47
22	22 181214P2_22	1803878-05 WT1811300950MK 0.25023	14-Dec-18	16:52:59
23	23 181214P2_23	1803878-06 WT1811301010MK 0.2468	14-Dec-18	17:04:10
24	24 181214P2_24	1803878-07 WT1811301025MK 0.23971	14-Dec-18	17:15:20
25	25 181214P2_25	1803878-08 WT1811301040MK 0.2446	14-Dec-18	17:26:31
26	26 181214P2_26	1803878-09 FB1811301045MK 0.25516	14-Dec-18	17:37:49
27	27 181214P2_27	1803878-10 WT1811301100MK 0.2446	14-Dec-18	17:49:01
28	28 181214P2_28	1803878-11 WT1811301120MK 0.2477	14-Dec-18	18:00:12
29	29 181214P2_29	IPA	14-Dec-18	18:11:22
30	30 181214P2_30	ST181214P2-11 PFC CS1 537 18L1008	14-Dec-18	18:23:06
31	31 181214P2_31	1803878-12 WT1811301140MK 0.24383	14-Dec-18	18:34:17
32	32 181214P2_32	1803878-13 WT1811301150MK 0.24654	14-Dec-18	18:45:35

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

Last Altered: Saturday, December 15, 2018 12:08:21 Pacific Standard Time  
 Printed: Saturday, December 15, 2018 12:08:57 Pacific Standard Time

Compound name: PFBS

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33	33 181214P2_33	1803878-14 WT1811301315MK 0.25211	14-Dec-18	18:56:47
34	34 181214P2_34	1803878-15 WT1811301330MK 0.24884	14-Dec-18	19:08:05
35	35 181214P2_35	1803878-16 WR1811301345MK 0.25171	14-Dec-18	19:21:16
36	36 181214P2_36	1803878-17 WT1811301400MK 0.24492	14-Dec-18	19:32:29
37	37 181214P2_37	1803878-18 WT1811301415MK 0.24658	14-Dec-18	19:43:39
38	38 181214P2_38	1803878-19 WSOFT1811301435MK 0.24926	14-Dec-18	19:54:50
39	39 181214P2_39	1803878-20 WT1811301445MK 0.24626	14-Dec-18	20:06:01
40	40 181214P2_40	B8L0013-BS1 LFB 0.25	14-Dec-18	20:17:20
41	41 181214P2_41	B8L0013-BSD1 LFBD 0.25	14-Dec-18	20:28:31
42	42 181214P2_42	B8L0013-BLK1 LRB 0.25	14-Dec-18	20:39:50
43	43 181214P2_43	1803817-01 GWNT1811280950KME 0.24493	14-Dec-18	20:51:02
44	44 181214P2_44	IPA	14-Dec-18	21:02:20
45	45 181214P2_45	ST181214P2-12 PFC CS3 537 18KL1010	14-Dec-18	21:13:49
46	46 181214P2_46	1803818-01 GWNT1811280800KME 0.24929	14-Dec-18	21:25:00
47	47 181214P2_47	1803819-01 GWNT1811280820KME 0.24765	14-Dec-18	21:36:10
48	48 181214P2_48	1803820-01 GWNT1811280915KME 0.25031	14-Dec-18	21:47:29
49	49 181214P2_49	1803822-01 GWEF1811281305KME 0.24372	14-Dec-18	21:58:41
50	50 181214P2_50	1803823-01 GWEF1811281335KME 0.2504	14-Dec-18	22:09:52
51	51 181214P2_51	1803824-01 GWEF1811281400KME 0.24525	14-Dec-18	22:21:03
52	52 181214P2_52	1803827-01 GWEF1811271130KER 0.2417	14-Dec-18	22:32:22
53	53 181214P2_53	1803828-01 GWEF1811271310KER 0.25159	14-Dec-18	22:43:33
54	54 181214P2_54	1803829-01 GWEF1811271350KER 0.24889	14-Dec-18	22:54:52
55	55 181214P2_55	1803830-01 GWEF1811271420KER 0.24604	14-Dec-18	23:06:04
56	56 181214P2_56	IPA	14-Dec-18	23:17:15
57	57 181214P2_57	ST181214P2-13 PFC CS-1 537 18L1006	14-Dec-18	23:28:41
58	58 181214P2_58	1803831-01 GWEF1811280900KER 0.24827	14-Dec-18	23:39:52
59	59 181214P2_59	1803832-01 GWEF1811280940KER 0.24557	14-Dec-18	23:51:11
60	60 181214P2_60	1803833-01 GWEF1811281020KER 0.24841	15-Dec-18	00:02:30
61	61 181214P2_61	1803834-01 GWNT1811281050KER 0.24175	15-Dec-18	00:13:42
62	62 181214P2_62	1803835-01 GWEF1811281140KER 0.25161	15-Dec-18	00:25:00
63	63 181214P2_63	1803836-01 GWEF1811281220KER 0.24895	15-Dec-18	00:36:12
64	64 181214P2_64	1803837-01 GWEF1811281400KER 0.24721	15-Dec-18	00:47:31
65	65 181214P2_65	IPA	15-Dec-18	00:58:42
66	66 181214P2_66	ST181214P2-14 PFC CS1 537 18L1008	15-Dec-18	01:10:09
67	67 181214P2_67	B8L0076-BS1 LFB 0.25	15-Dec-18	01:21:20
68	68 181214P2_68	B8L0076-MS1 LFSM 0.25052	15-Dec-18	01:32:30



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-IIS AREAS.qld

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Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
69	69 181214P2_69	B8L0076-MSD1 LFSMD 0.24755	15-Dec-18	01:43:41
70	70 181214P2_70	B8L0076-BLK1 LRB 0.25	15-Dec-18	01:54:52
71	71 181214P2_71	1803982-01 Big Field-DW-120618 0.25704	15-Dec-18	02:06:03
72	72 181214P2_72	1803982-02 Big Field-FB-120618 0.2393	15-Dec-18	02:17:13
73	73 181214P2_73	1803982-03 Behind the Base-DW-120618 0.25217	15-Dec-18	02:28:24
74	74 181214P2_74	1803982-04 Behind the Base-FB-120618 0.25284	15-Dec-18	02:39:35
75	75 181214P2_75	1803982-05 Shooting Range1-DW-120618 0.23899	15-Dec-18	02:50:46
76	76 181214P2_76	1803982-06 Shooting Range1-FB-120618 0.2478	15-Dec-18	03:01:57
77	77 181214P2_77	1803982-07 Source Blank 0.23755	15-Dec-18	03:13:07
78	78 181214P2_78	1803982-08 DUP-1 0.23495	15-Dec-18	03:24:18
79	79 181214P2_79	IPA	15-Dec-18	03:35:28
80	80 181214P2_80	ST181214P2-15 PFC CS3 537 18KL1010	15-Dec-18	03:46:39

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-80.qld

Last Altered: Saturday, December 15, 2018 12:00:42 Pacific Standard Time

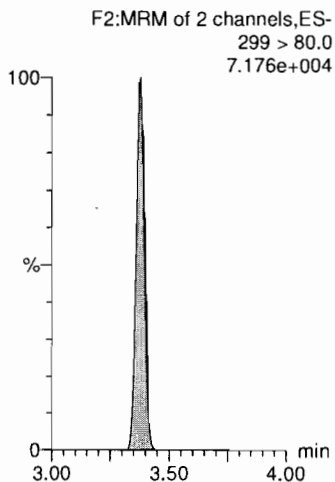
Printed: Saturday, December 15, 2018 12:01:03 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

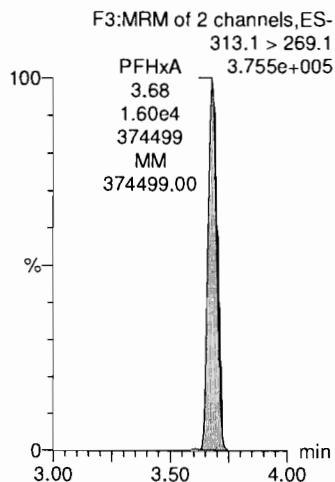
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Name: 181214P2\_80, Date: 15-Dec-2018, Time: 03:46:39, ID: ST181214P2-15 PFC CS3 537 18KL1010, Description: PFC CS3 537 18KL1010

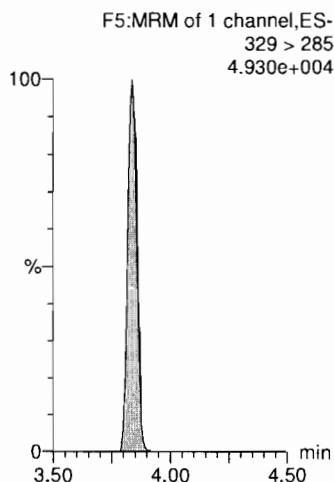
**PFBS**



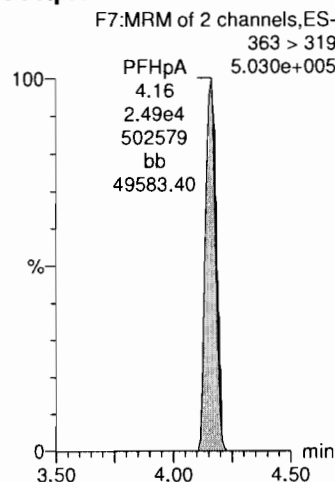
**PFHxA**



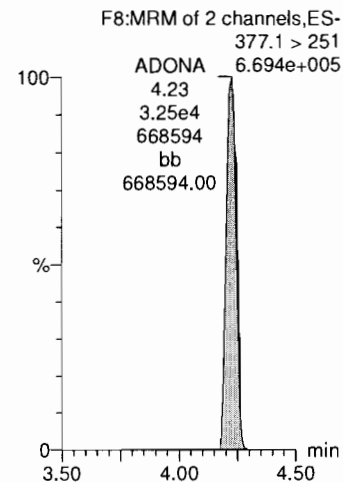
**HFPO-DA**



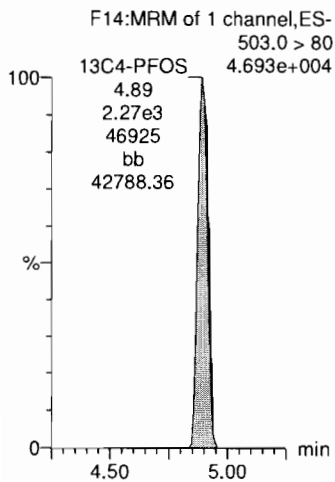
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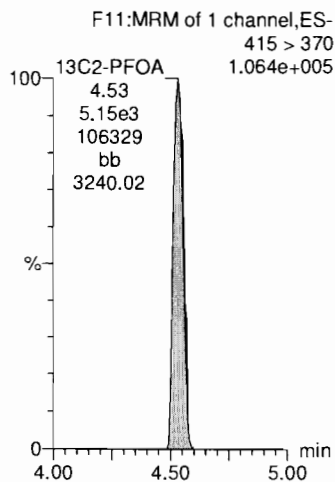
**ADONA**



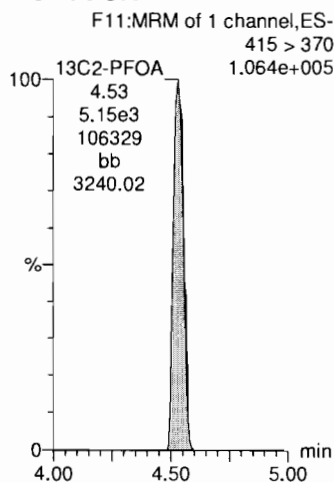
**13C4-PFOS**



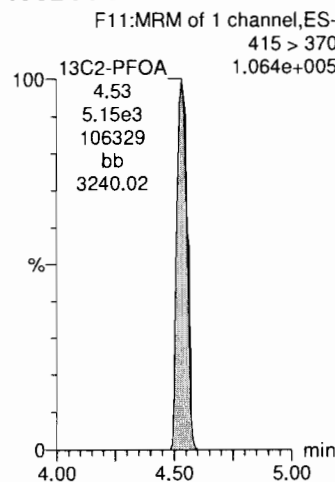
**13C2-PFOA**



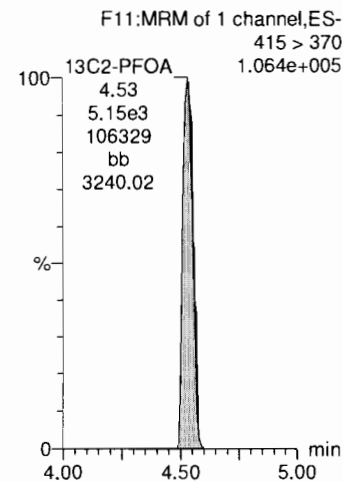
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**



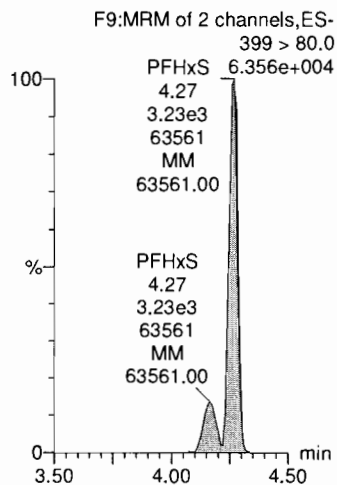
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Last Altered: Saturday, December 15, 2018 12:00:42 Pacific Standard Time

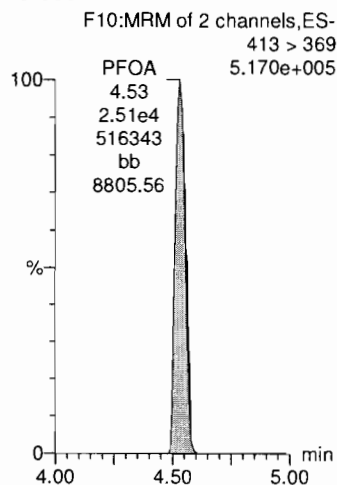
Printed: Saturday, December 15, 2018 12:01:03 Pacific Standard Time

Name: 181214P2\_80, Date: 15-Dec-2018, Time: 03:46:39, ID: ST181214P2-15 PFC CS3 537 18KL1010, Description: PFC CS3 537 18KL1010

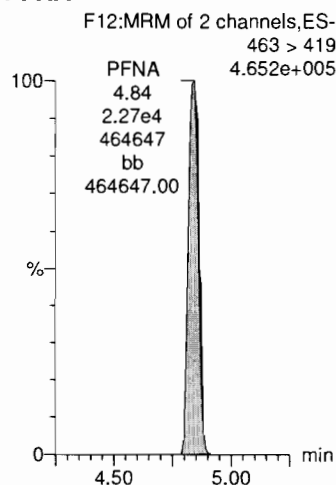
**PFHxS**



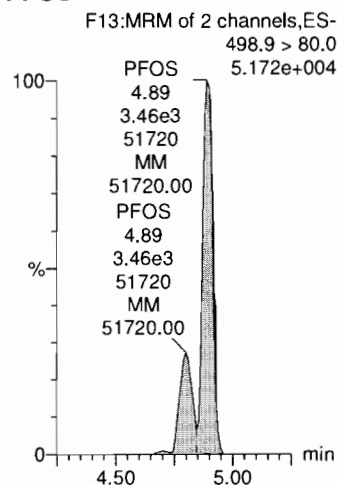
**PFOA**



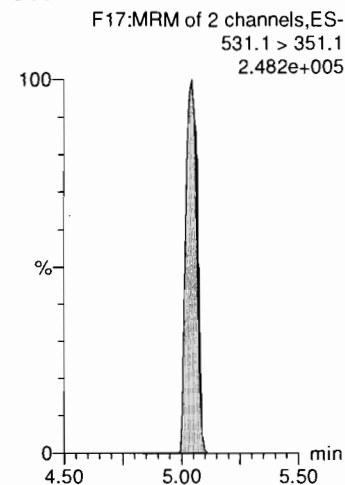
**PFNA**



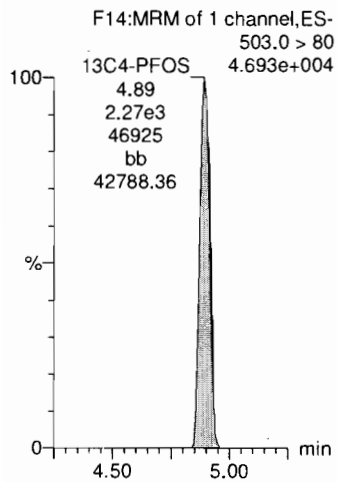
**PFOS**



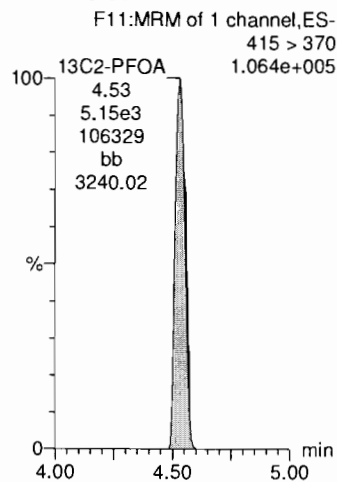
**9CI-PF3ONS**



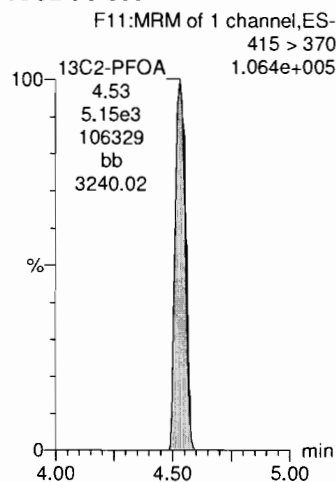
**13C4-PFOS**



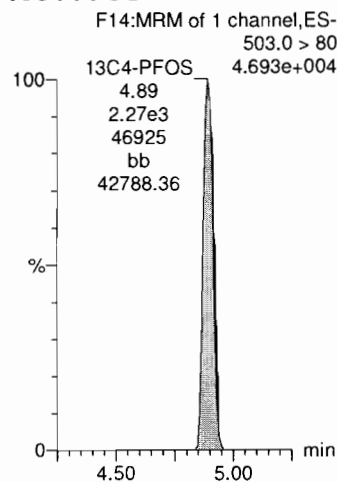
**13C2-PFOA**



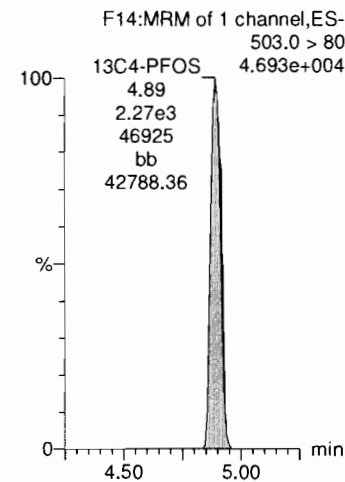
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**



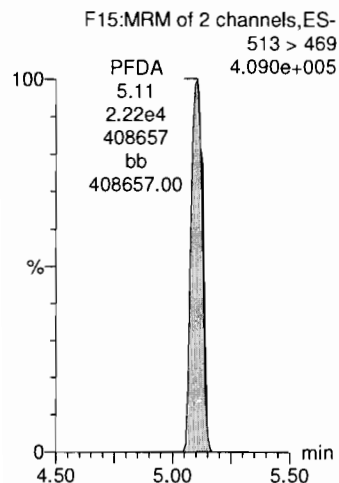
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-80.qld

Last Altered: Saturday, December 15, 2018 12:00:42 Pacific Standard Time

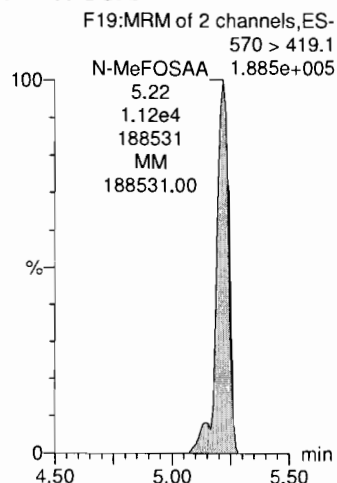
Printed: Saturday, December 15, 2018 12:01:03 Pacific Standard Time

Name: 181214P2\_80, Date: 15-Dec-2018, Time: 03:46:39, ID: ST181214P2-15 PFC CS3 537 18KL1010, Description: PFC CS3 537 18KL1010

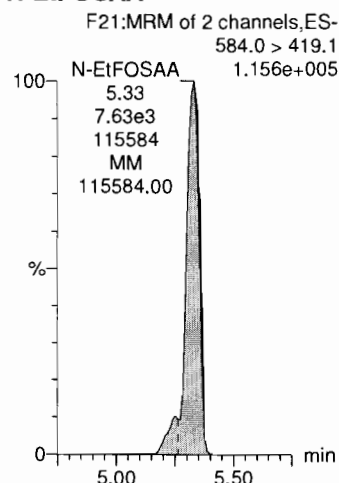
**PFDA**



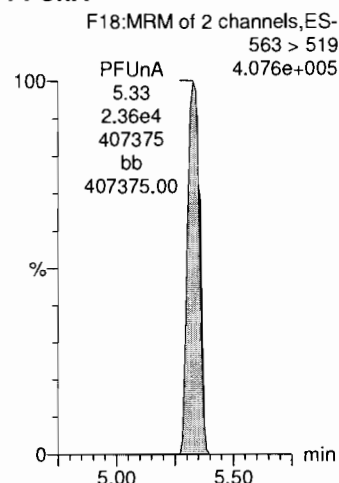
**N-MeFOSAA**



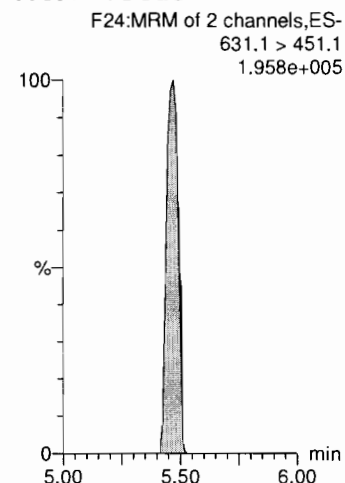
**N-EtFOSAA**



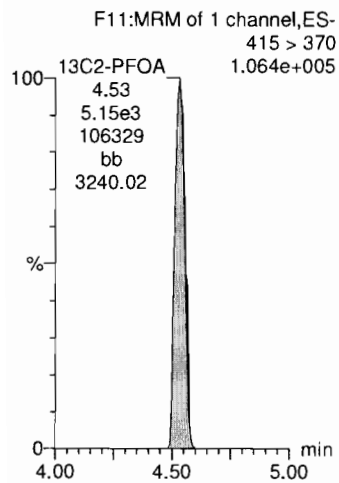
**PFUnA**



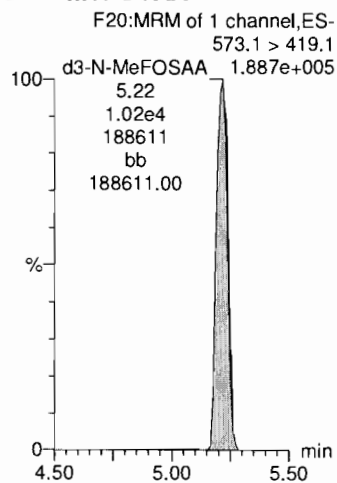
**11CI-PF3OUds**



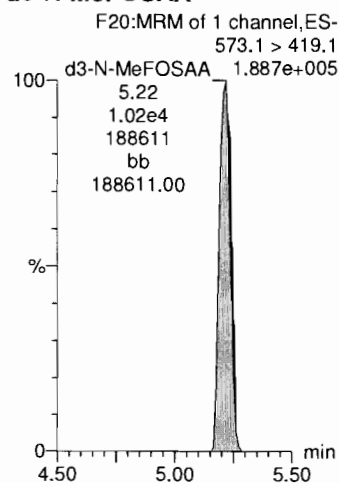
**13C2-PFOA**



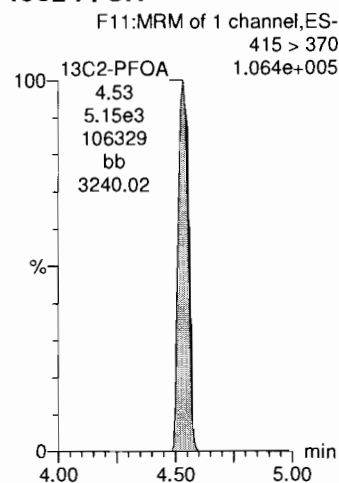
**d3-N-MeFOSAA**



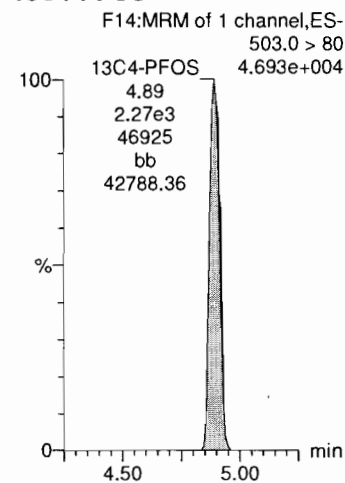
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



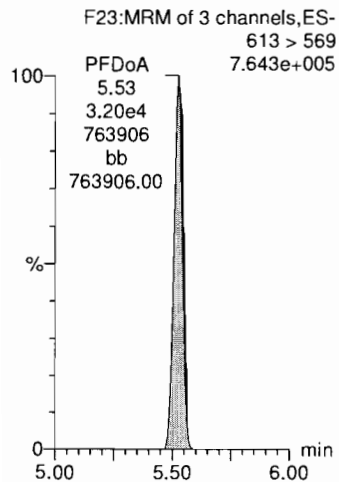
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Last Altered: Saturday, December 15, 2018 12:00:42 Pacific Standard Time

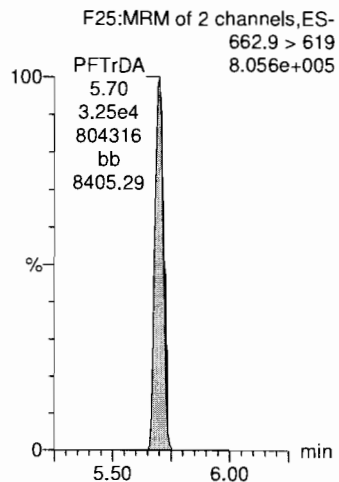
Printed: Saturday, December 15, 2018 12:01:03 Pacific Standard Time

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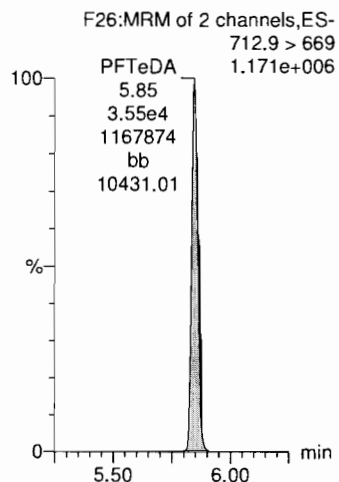
**PFDoA**



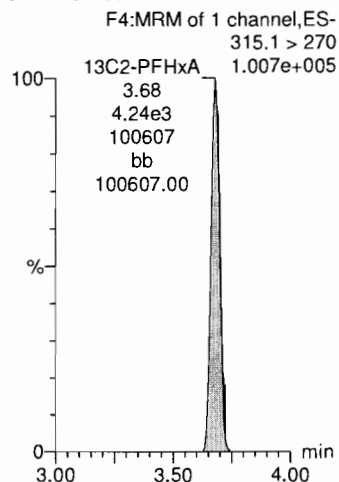
**PFTrDA**



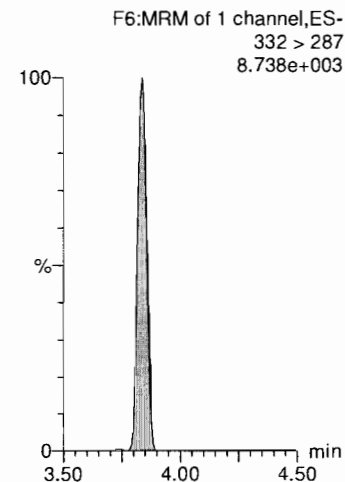
**PFTeDA**



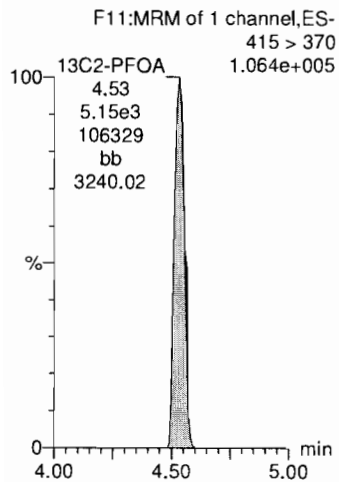
**13C2-PFHxA**



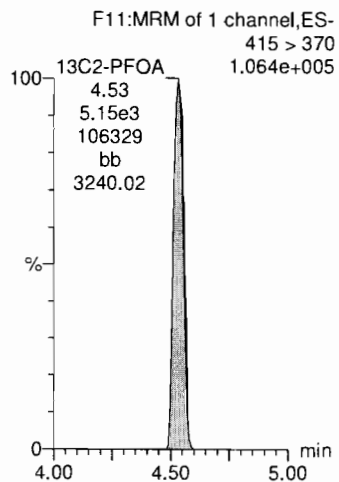
**13C3-HFPO-DA**



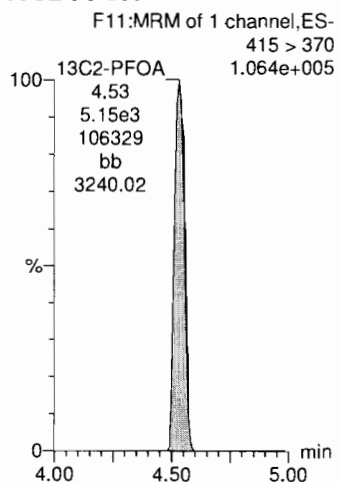
**13C2-PFOA**



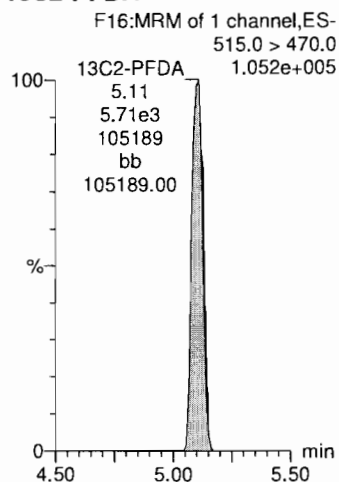
**13C2-PFOA**



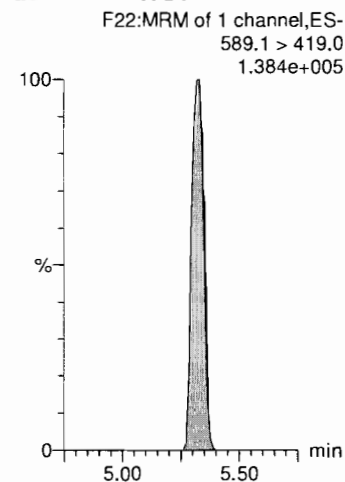
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**



# ICAL

## Compound 23: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %
1 1803982-08 DUP-1 0.23495	181216P1_65	Analyte		10 4.53	6369.06	7179.65	88.71
2 B8L0040-BS1 LFB 0.25	181216P1_15	Analyte		10 4.53	6253.89	7179.65	87.11
3 B8L0040-MS1 LFSM 0.24632	181216P1_16	Analyte		10 4.53	6140.69	7179.65	85.53
4 B8L0040-MSD1 LFSMD 0.24541	181216P1_17	Analyte		10 4.53	5922.60	7179.65	82.49
5 B8L0040-BLK1 LRB 0.25	181216P1_18	Analyte		10 4.53	6896.47	7179.65	96.06
6 1803880-01 WT1812031015RL 0.25121	181216P1_19	Analyte		10 4.53	7018.25	7179.65	97.75
7 1803880-02 WT1812031045RL 0.24764	181216P1_20	Analyte		10 4.53	6905.48	7179.65	96.18
8 1803880-03 WT1812031105RL 0.24809	181216P1_21	Analyte		10 4.53	6136.31	7179.65	85.47
9 1803880-04 WT1812031135RL 0.24029	181216P1_22	Analyte		10 4.53	6923.08	7179.65	96.43
10 1803880-05 WT1812031150RL 0.23672	181216P1_23	Analyte		10 4.53	7162.71	7179.65	99.76
11 1803880-06 WT1812031155RL-FD 0.24196	181216P1_24	Analyte		10 4.53	5490.72	7179.65	76.48
12 1803880-07 WT1812031210RL 0.24346	181216P1_25	Analyte		10 4.53	6293.71	7179.65	87.66
13 1803880-08 WT1812031220RL 0.25142	181216P1_26	Analyte		10 4.53	6616.27	7179.65	92.15
14 1803880-09 WT1812031350RL 0.24833	181216P1_27	Analyte		10 4.53	6704.12	7179.65	93.38
15 IPA	181216P1_29	Analyte		10			
16 ST181216P1-11 PFC CS1 537 18L1008	181216P1_30	Analyte		10 4.53	6657.87	7179.65	92.73
17 1803880-10 WT1812031410RL 0.24629	181216P1_28	Analyte		10 4.53	6824.30	7179.65	95.05
18 1803880-11 WT1812031425RL 0.24475	181216P1_31	Analyte		10 4.53	7157.75	7179.65	99.69
19 1803880-12 WT1812031455RL 0.2461	181216P1_32	Analyte		10 4.53	6363.31	7179.65	88.63
20 1803885-01 GWNT1811300900GGA 0.24942	181216P1_33	Analyte		10 4.53	6437.33	7179.65	89.66
21 1803886-01 GWNT1811301100GGA 0.24619	181216P1_34	Analyte		10 4.53	6619.70	7179.65	92.20
22 1803887-01 GWNT1811301500GGA 0.25105	181216P1_35	Analyte		10 4.53	6199.88	7179.65	86.35
23 1803888-01 GWNT1811301600GGA 0.2509	181216P1_36	Analyte		10 4.53	6172.73	7179.65	85.98
24 B8L0055-BS1 LFB 0.25	181216P1_37	Analyte		10 4.53	6883.42	7179.65	95.87
25 B8L0055-MS1 LFSM 0.25176	181216P1_38	Analyte		10 4.53	6139.92	7179.65	85.52
26 B8L0055-MSD1 LFSMD 0.24514	181216P1_39	Analyte		10 4.53	6809.96	7179.65	94.85
27 B8L0055-BLK1 LRB 0.25	181216P1_40	Analyte		10 4.53	6685.01	7179.65	93.11
28 1803908-01 GWEF1811300920KER 0.24876	181216P1_41	Analyte		10 4.53	6253.67	7179.65	87.10
29 1803910-01 WT1811301505MK 0.249	181216P1_42	Analyte		10 4.53	6864.09	7179.65	95.60
30 1803910-02 WT1811301525MK 0.25273	181216P1_43	Analyte		10 4.53	6698.17	7179.65	93.29
31 IPA	181216P1_45	Analyte		10			

32	ST181216P1-12 PFC CS3 537 18KL1010	181216P1_46	Analyte	10	4.53	6966.53	7179.65	97.03
33	1803910-03 WT1811301600MK 0.25043	181216P1_44	Analyte	10	4.53	7173.92	7179.65	99.92
34	1803910-04 WT1811301605MK 0.25048	181216P1_47	Analyte	10	4.53	7113.63	7179.65	99.08
35	1803910-05 WT1811301635MK 0.24785	181216P1_48	Analyte	10	4.53	5711.91	7179.65	79.56
36	1803910-06 WR1811301700MK 0.25783	181216P1_49	Analyte	10	4.53	6904.54	7179.65	96.17
37	1803910-07 WR1811301715MK 0.25038	181216P1_50	Analyte	10	4.53	6715.07	7179.65	93.53
38	1803911-01 GWEF1811300945KER 0.25486	181216P1_51	Analyte	10	4.53	6333.84	7179.65	88.22
39	1803912-01 GWEF1811301110KER 0.25299	181216P1_52	Analyte	10	4.53	5976.70	7179.65	83.24
40	1803913-01 GWEF1812030930KER 0.25245	181216P1_53	Analyte	10	4.53	6859.56	7179.65	95.54
41	1803914-01 GWEF1812031030KER 0.2546	181216P1_54	Analyte	10	4.53	6356.81	7179.65	88.54
42	1803915-01 GWEF1812031100KER 0.25251	181216P1_55	Analyte	10	4.53	6774.76	7179.65	94.36
43	IPA	181216P1_57	Analyte	10				
44	ST181215P2-13 PFC CS-1 537 18L1006	181216P1_58	Analyte	10	4.53	7345.84	7179.65	102.31
45	1803916-01 GWNT1812031130KER 0.24821	181216P1_56	Analyte	10	4.53	5950.17	7179.65	82.88
46	1803917-01 GWNT1812031200KER 0.24347	181216P1_59	Analyte	10	4.53	6834.14	7179.65	95.19
47	1803918-01 GWEF1812031300KER 0.24784	181216P1_60	Analyte	10	4.53	6644.32	7179.65	92.54
48	1803920-01 GWEF1811301010KER 0.24563	181216P1_61	Analyte	10	4.53	6649.34	7179.65	92.61
49	1803920-02 GWEF1811301020KER 0.24888	181216P1_62	Analyte	10	4.53	6486.74	7179.65	90.35
50	1803920-03 GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	10	4.53	6123.95	7179.65	85.30
51	1803920-04 FB1811301050KER 0.24822	181216P1_64	Analyte	10	4.53	6555.71	7179.65	91.31
52	IPA	181216P1_66	Analyte	10				
53	ST181216P1-14 PFC CS1 537 18L1008	181216P1_67	Analyte	10	4.53	6706.82	7179.65	93.41

**Compound 24: 13C4-PFOS**

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %	
1	1803982-08 DUP-1 0.23495	181216P1_65	Analyte	28.7	4.89	2954.67	3306.04	89.37
2	B8L0040-BS1 LFB 0.25	181216P1_15	Analyte	28.7	4.89	2822.50	3306.04	85.37
3	B8L0040-MS1 LFSM 0.24632	181216P1_16	Analyte	28.7	4.89	2913.19	3306.04	88.12
4	B8L0040-MSD1 LFSMD 0.24541	181216P1_17	Analyte	28.7	4.89	2670.14	3306.04	80.77
5	B8L0040-BLK1 LRB 0.25	181216P1_18	Analyte	28.7	4.89	3111.26	3306.04	94.11
6	1803880-01 WT1812031015RL 0.25121	181216P1_19	Analyte	28.7	4.89	3417.29	3306.04	103.37
7	1803880-02 WT1812031045RL 0.24764	181216P1_20	Analyte	28.7	4.89	3262.97	3306.04	98.70

8	1803880-03 WT1812031105RL 0.24809	181216P1_21	Analyte	28.7	4.89	2885.22	3306.04	87.27
9	1803880-04 WT1812031135RL 0.24029	181216P1_22	Analyte	28.7	4.89	3094.13	3306.04	93.59
10	1803880-05 WT1812031150RL 0.23672	181216P1_23	Analyte	28.7	4.89	3201.82	3306.04	96.85
11	1803880-06 WT1812031155RL-FD 0.24196	181216P1_24	Analyte	28.7	4.89	2386.50	3306.04	72.19
12	1803880-07 WT1812031210RL 0.24346	181216P1_25	Analyte	28.7	4.89	2708.20	3306.04	81.92
13	1803880-08 WT1812031220RL 0.25142	181216P1_26	Analyte	28.7	4.89	2938.04	3306.04	88.87
14	1803880-09 WT1812031350RL 0.24833	181216P1_27	Analyte	28.7	4.90	3214.84	3306.04	97.24
15	IPA	181216P1_29	Analyte	28.7				
16	ST181216P1-11 PFC CS1 537 18L1008	181216P1_30	Analyte	28.7	4.89	3402.61	3306.04	102.92
17	1803880-10 WT1812031410RL 0.24629	181216P1_28	Analyte	28.7	4.89	3358.39	3306.04	101.58
18	1803880-11 WT1812031425RL 0.24475	181216P1_31	Analyte	28.7	4.89	3334.50	3306.04	100.86
19	1803880-12 WT1812031455RL 0.2461	181216P1_32	Analyte	28.7	4.89	3049.89	3306.04	92.25
20	1803885-01 GWNT1811300900GGA 0.24942	181216P1_33	Analyte	28.7	4.89	2780.82	3306.04	84.11
21	1803886-01 GWNT1811301100GGA 0.24619	181216P1_34	Analyte	28.7	4.89	2908.48	3306.04	87.97
22	1803887-01 GWNT1811301500GGA 0.25105	181216P1_35	Analyte	28.7	4.89	2919.35	3306.04	88.30
23	1803888-01 GWNT1811301600GGA 0.2509	181216P1_36	Analyte	28.7	4.89	3110.44	3306.04	94.08
24	B8L0055-BS1 LFB 0.25	181216P1_37	Analyte	28.7	4.89	2939.30	3306.04	88.91
25	B8L0055-MS1 LFSM 0.25176	181216P1_38	Analyte	28.7	4.89	2894.70	3306.04	87.56
26	B8L0055-MSD1 LFSMD 0.24514	181216P1_39	Analyte	28.7	4.89	3255.83	3306.04	98.48
27	B8L0055-BLK1 LRB 0.25	181216P1_40	Analyte	28.7	4.89	3224.24	3306.04	97.53
28	1803908-01 GWEF1811300920KER 0.24876	181216P1_41	Analyte	28.7	4.89	2856.95	3306.04	86.42
29	1803910-01 WT1811301505MK 0.249	181216P1_42	Analyte	28.7	4.89	3088.73	3306.04	93.43
30	1803910-02 WT1811301525MK 0.25273	181216P1_43	Analyte	28.7	4.89	3168.07	3306.04	95.83
31	IPA	181216P1_45	Analyte	28.7				
32	ST181216P1-12 PFC CS3 537 18KL1010	181216P1_46	Analyte	28.7	4.89	3196.43	3306.04	96.68
33	1803910-03 WT1811301600MK 0.25043	181216P1_44	Analyte	28.7	4.89	3379.28	3306.04	102.22
34	1803910-04 WT1811301605MK 0.25048	181216P1_47	Analyte	28.7	4.89	3366.03	3306.04	101.81
35	1803910-05 WT1811301635MK 0.24785	181216P1_48	Analyte	28.7	4.89	2766.99	3306.04	83.70
36	1803910-06 WR1811301700MK 0.25783	181216P1_49	Analyte	28.7	4.89	2992.93	3306.04	90.53
37	1803910-07 WR1811301715MK 0.25038	181216P1_50	Analyte	28.7	4.89	3286.18	3306.04	99.40
38	1803911-01 GWEF1811300945KER 0.25486	181216P1_51	Analyte	28.7	4.89	2922.13	3306.04	88.39
39	1803912-01 GWEF1811301110KER 0.25299	181216P1_52	Analyte	28.7	4.89	2876.08	3306.04	86.99
40	1803913-01 GWEF1812030930KER 0.25245	181216P1_53	Analyte	28.7	4.89	3077.16	3306.04	93.08
41	1803914-01 GWEF1812031030KER 0.2546	181216P1_54	Analyte	28.7	4.89	2876.86	3306.04	87.02



42	1803915-01	GWEF1812031100KER 0.25251	181216P1_55	Analyte	28.7	4.89	3007.67	3306.04	90.98
43	IPA		181216P1_57	Analyte	28.7				
44	ST181215P2-13	PFC CS-1 537 18L1006	181216P1_58	Analyte	28.7	4.89	3380.41	3306.04	102.25
45	1803916-01	GWNT1812031130KER 0.24821	181216P1_56	Analyte	28.7	4.89	2741.81	3306.04	82.93
46	1803917-01	GWNT1812031200KER 0.24347	181216P1_59	Analyte	28.7	4.89	3149.72	3306.04	95.27
47	1803918-01	GWEF1812031300KER 0.24784	181216P1_60	Analyte	28.7	4.89	3114.82	3306.04	94.22
48	1803920-01	GWEF1811301010KER 0.24563	181216P1_61	Analyte	28.7	4.89	3043.51	3306.04	92.06
49	1803920-02	GWEF1811301020KER 0.24888	181216P1_62	Analyte	28.7	4.89	2880.69	3306.04	87.13
50	1803920-03	GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	28.7	4.89	2963.13	3306.04	89.63
51	1803920-04	FB1811301050KER 0.24822	181216P1_64	Analyte	28.7	4.89	2958.92	3306.04	89.50
52	IPA		181216P1_66	Analyte	28.7				
53	ST181216P1-14	PFC CS1 537 18L1008	181216P1_67	Analyte	28.7	4.89	3179.79	3306.04	96.18

#### Compound 25: d3-N-MeFOSAA

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area %	
1	1803982-08 DUP-1 0.23495	181216P1_65	Analyte	40	5.22	13682.34	15074.67	90.76
2	B8L0040-BS1 LFB 0.25	181216P1_15	Analyte	40	5.21	12914.75	15074.67	85.67
3	B8L0040-MS1 LFSM 0.24632	181216P1_16	Analyte	40	5.21	14028.22	15074.67	93.06
4	B8L0040-MSD1 LFSMD 0.24541	181216P1_17	Analyte	40	5.22	12253.90	15074.67	81.29
5	B8L0040-BLK1 LRB 0.25	181216P1_18	Analyte	40	5.21	14187.09	15074.67	94.11
6	1803880-01 WT1812031015RL 0.25121	181216P1_19	Analyte	40	5.22	14536.18	15074.67	96.43
7	1803880-02 WT1812031045RL 0.24764	181216P1_20	Analyte	40	5.21	14925.84	15074.67	99.01
8	1803880-03 WT1812031105RL 0.24809	181216P1_21	Analyte	40	5.22	12561.38	15074.67	83.33
9	1803880-04 WT1812031135RL 0.24029	181216P1_22	Analyte	40	5.22	14792.81	15074.67	98.13
10	1803880-05 WT1812031150RL 0.23672	181216P1_23	Analyte	40	5.22	15095.69	15074.67	100.14
11	1803880-06 WT1812031155RL-FD 0.24196	181216P1_24	Analyte	40	5.22	11848.52	15074.67	78.60
12	1803880-07 WT1812031210RL 0.24346	181216P1_25	Analyte	40	5.22	12970.89	15074.67	86.04
13	1803880-08 WT1812031220RL 0.25142	181216P1_26	Analyte	40	5.22	14076.73	15074.67	93.38
14	1803880-09 WT1812031350RL 0.24833	181216P1_27	Analyte	40	5.22	14350.82	15074.67	95.20
15	IPA	181216P1_29	Analyte	40				
16	ST181216P1-11 PFC CS1 537 18L1008	181216P1_30	Analyte	40	5.22	15287.08	15074.67	101.41
17	1803880-10 WT1812031410RL 0.24629	181216P1_28	Analyte	40	5.22	15388.76	15074.67	102.08

18	1803880-11	WT1812031425RL 0.24475	181216P1_31	Analyte	40	5.22	14767.83	15074.67	97.96
19	1803880-12	WT1812031455RL 0.2461	181216P1_32	Analyte	40	5.22	13052.25	15074.67	86.58
20	1803885-01	GWNT1811300900GGA 0.24942	181216P1_33	Analyte	40	5.22	13167.43	15074.67	87.35
21	1803886-01	GWNT1811301100GGA 0.24619	181216P1_34	Analyte	40	5.22	14060.50	15074.67	93.27
22	1803887-01	GWNT1811301500GGA 0.25105	181216P1_35	Analyte	40	5.22	12409.76	15074.67	82.32
23	1803888-01	GWNT1811301600GGA 0.2509	181216P1_36	Analyte	40	5.22	12788.97	15074.67	84.84
24	B8L0055-BS1	LFB 0.25	181216P1_37	Analyte	40	5.22	13769.03	15074.67	91.34
25	B8L0055-MS1	LFSM 0.25176	181216P1_38	Analyte	40	5.22	13781.86	15074.67	91.42
26	B8L0055-MSD1	LFSMD 0.24514	181216P1_39	Analyte	40	5.22	14714.50	15074.67	97.61
27	B8L0055-BLK1	LRB 0.25	181216P1_40	Analyte	40	5.21	14179.21	15074.67	94.06
28	1803908-01	GWEF1811300920KER 0.24876	181216P1_41	Analyte	40	5.22	12605.98	15074.67	83.62
29	1803910-01	WT1811301505MK 0.249	181216P1_42	Analyte	40	5.22	14744.17	15074.67	97.81
30	1803910-02	WT1811301525MK 0.25273	181216P1_43	Analyte	40	5.22	14841.76	15074.67	98.45
31	IPA		181216P1_45	Analyte	40				
32	ST181216P1-12	PFC CS3 537 18KL1010	181216P1_46	Analyte	40	5.22	14456.60	15074.67	95.90
33	1803910-03	WT1811301600MK 0.25043	181216P1_44	Analyte	40	5.22	14823.44	15074.67	98.33
34	1803910-04	WT1811301605MK 0.25048	181216P1_47	Analyte	40	5.22	14906.44	15074.67	98.88
35	1803910-05	WT1811301635MK 0.24785	181216P1_48	Analyte	40	5.22	12949.55	15074.67	85.90
36	1803910-06	WR1811301700MK 0.25783	181216P1_49	Analyte	40	5.22	13440.90	15074.67	89.16
37	1803910-07	WR1811301715MK 0.25038	181216P1_50	Analyte	40	5.22	14747.31	15074.67	97.83
38	1803911-01	GWEF1811300945KER 0.25486	181216P1_51	Analyte	40	5.22	13268.44	15074.67	88.02
39	1803912-01	GWEF1811301110KER 0.25299	181216P1_52	Analyte	40	5.22	12912.54	15074.67	85.66
40	1803913-01	GWEF1812030930KER 0.25245	181216P1_53	Analyte	40	5.22	14332.89	15074.67	95.08
41	1803914-01	GWEF1812031030KER 0.2546	181216P1_54	Analyte	40	5.22	13814.63	15074.67	91.64
42	1803915-01	GWEF1812031100KER 0.25251	181216P1_55	Analyte	40	5.22	15157.96	15074.67	100.55
43	IPA		181216P1_57	Analyte	40				
44	ST181215P2-13	PFC CS-1 537 18L1006	181216P1_58	Analyte	40	5.22	15009.51	15074.67	99.57
45	1803916-01	GWNT1812031130KER 0.24821	181216P1_56	Analyte	40	5.22	13205.39	15074.67	87.60
46	1803917-01	GWNT1812031200KER 0.24347	181216P1_59	Analyte	40	5.22	14799.91	15074.67	98.18
47	1803918-01	GWEF1812031300KER 0.24784	181216P1_60	Analyte	40	5.22	14344.06	15074.67	95.15
48	1803920-01	GWEF1811301010KER 0.24563	181216P1_61	Analyte	40	5.22	13370.34	15074.67	88.69
49	1803920-02	GWEF1811301020KER 0.24888	181216P1_62	Analyte	40	5.22	12668.87	15074.67	84.04
50	1803920-03	GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	40	5.22	13751.66	15074.67	91.22
51	1803920-04	FB1811301050KER 0.24822	181216P1_64	Analyte	40	5.22	13805.90	15074.67	91.58

52	IPA	181216P1_66	Analyte	40				
53	ST181216P1-14 PFC CS1 537 18L1008	181216P1_67	Analyte	40	5.22	14391.33	15074.67	40.00

## CCAL

### Compound 23: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %	
<b>16</b>	<b>ST181216P1-11 PFC CS1 537 18L1008</b>	<b>181216P1_30</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>6657.87</b>	<b>6657.87</b>	<b>100.00</b>
17	1803880-10 WT1812031410RL 0.24629	181216P1_28	Analyte	10	4.53	6824.30	6657.87	102.50
18	1803880-11 WT1812031425RL 0.24475	181216P1_31	Analyte	10	4.53	7157.75	6657.87	107.51
19	1803880-12 WT1812031455RL 0.2461	181216P1_32	Analyte	10	4.53	6363.31	6657.87	95.58
20	1803885-01 GWNT1811300900GGA 0.24942	181216P1_33	Analyte	10	4.53	6437.33	6657.87	96.69
21	1803886-01 GWNT1811301100GGA 0.24619	181216P1_34	Analyte	10	4.53	6619.70	6657.87	99.43
22	1803887-01 GWNT1811301500GGA 0.25105	181216P1_35	Analyte	10	4.53	6199.88	6657.87	93.12
23	1803888-01 GWNT1811301600GGA 0.2509	181216P1_36	Analyte	10	4.53	6172.73	6657.87	92.71
24	B8L0055-BS1 LFB 0.25	181216P1_37	Analyte	10	4.53	6883.42	6657.87	103.39
25	B8L0055-MS1 LFSM 0.25176	181216P1_38	Analyte	10	4.53	6139.92	6657.87	92.22
26	B8L0055-MSD1 LFSMD 0.24514	181216P1_39	Analyte	10	4.53	6809.96	6657.87	102.28
27	B8L0055-BLK1 LRB 0.25	181216P1_40	Analyte	10	4.53	6685.01	6657.87	100.41
28	1803908-01 GWEF1811300920KER 0.24876	181216P1_41	Analyte	10	4.53	6253.67	6657.87	93.93
29	1803910-01 WT1811301505MK 0.249	181216P1_42	Analyte	10	4.53	6864.09	6657.87	103.10
30	1803910-02 WT1811301525MK 0.25273	181216P1_43	Analyte	10	4.53	6698.17	6657.87	100.61
31	IPA	181216P1_45	Analyte	10				
32	ST181216P1-12 PFC CS3 537 18KL1010	181216P1_46	Analyte	10	4.53	6966.53	6657.87	104.64
<b>32</b>	<b>ST181216P1-12 PFC CS3 537 18KL1010</b>	<b>181216P1_46</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>6966.53</b>	<b>6966.53</b>	<b>100.00</b>
33	1803910-03 WT1811301600MK 0.25043	181216P1_44	Analyte	10	4.53	7173.92	6966.53	102.98
34	1803910-04 WT1811301605MK 0.25048	181216P1_47	Analyte	10	4.53	7113.63	6966.53	102.11
35	1803910-05 WT1811301635MK 0.24785	181216P1_48	Analyte	10	4.53	5711.91	6966.53	81.99
36	1803910-06 WR1811301700MK 0.25783	181216P1_49	Analyte	10	4.53	6904.54	6966.53	99.11
37	1803910-07 WR1811301715MK 0.25038	181216P1_50	Analyte	10	4.53	6715.07	6966.53	96.39
38	1803911-01 GWEF1811300945KER 0.25486	181216P1_51	Analyte	10	4.53	6333.84	6966.53	90.92
39	1803912-01 GWEF1811301110KER 0.25299	181216P1_52	Analyte	10	4.53	5976.70	6966.53	85.79
40	1803913-01 GWEF1812030930KER 0.25245	181216P1_53	Analyte	10	4.53	6859.56	6966.53	98.46

41	1803914-01	GWEF1812031030KER 0.2546	181216P1_54	Analyte	10	4.53	6356.81	6966.53	91.25
42	1803915-01	GWEF1812031100KER 0.25251	181216P1_55	Analyte	10	4.53	6774.76	6966.53	97.25
43	IPA		181216P1_57	Analyte	10				
44	ST181215P2-13	PFC CS-1 537 18L1006	181216P1_58	Analyte	10	4.53	7345.84	6966.53	105.44
<b>44</b>	<b>ST181215P2-13</b>	<b>PFC CS-1 537 18L1006</b>	<b>181216P1_58</b>	<b>Analyte</b>	<b>10</b>	<b>4.53</b>	<b>7345.84</b>	<b>7345.84</b>	<b>100.00</b>
45	1803916-01	GWNT1812031130KER 0.24821	181216P1_56	Analyte	10	4.53	5950.17	7345.84	81.00
46	1803917-01	GWNT1812031200KER 0.24347	181216P1_59	Analyte	10	4.53	6834.14	7345.84	93.03
47	1803918-01	GWEF1812031300KER 0.24784	181216P1_60	Analyte	10	4.53	6644.32	7345.84	90.45
48	1803920-01	GWEF1811301010KER 0.24563	181216P1_61	Analyte	10	4.53	6649.34	7345.84	90.52
49	1803920-02	GWEF1811301020KER 0.24888	181216P1_62	Analyte	10	4.53	6486.74	7345.84	88.30
50	1803920-03	GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	10	4.53	6123.95	7345.84	83.37
51	1803920-04	FB1811301050KER 0.24822	181216P1_64	Analyte	10	4.53	6555.71	7345.84	89.24
52	IPA		181216P1_66	Analyte	10				
53	ST181216P1-14	PFC CS1 537 18L1008	181216P1_67	Analyte	10	4.53	6706.82	7345.84	91.30

#### Compound 24: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %		
<b>16</b>	<b>ST181216P1-11</b>	<b>PFC CS1 537 18L1008</b>	<b>181216P1_30</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>3402.61</b>	<b>3402.61</b>	<b>100.00</b>
17	1803880-10	WT1812031410RL 0.24629	181216P1_28	Analyte	28.7	4.89	3358.39	3402.61	98.70
18	1803880-11	WT1812031425RL 0.24475	181216P1_31	Analyte	28.7	4.89	3334.50	3402.61	98.00
19	1803880-12	WT1812031455RL 0.2461	181216P1_32	Analyte	28.7	4.89	3049.89	3402.61	89.63
20	1803885-01	GWNT1811300900GGA 0.24942	181216P1_33	Analyte	28.7	4.89	2780.82	3402.61	81.73
21	1803886-01	GWNT1811301100GGA 0.24619	181216P1_34	Analyte	28.7	4.89	2908.48	3402.61	85.48
22	1803887-01	GWNT1811301500GGA 0.25105	181216P1_35	Analyte	28.7	4.89	2919.35	3402.61	85.80
23	1803888-01	GWNT1811301600GGA 0.2509	181216P1_36	Analyte	28.7	4.89	3110.44	3402.61	91.41
24	B8L0055-BS1	LFB 0.25	181216P1_37	Analyte	28.7	4.89	2939.30	3402.61	86.38
25	B8L0055-MS1	LFSM 0.25176	181216P1_38	Analyte	28.7	4.89	2894.70	3402.61	85.07
26	B8L0055-MSD1	LFSMD 0.24514	181216P1_39	Analyte	28.7	4.89	3255.83	3402.61	95.69
27	B8L0055-BLK1	LRB 0.25	181216P1_40	Analyte	28.7	4.89	3224.24	3402.61	94.76
28	1803908-01	GWEF1811300920KER 0.24876	181216P1_41	Analyte	28.7	4.89	2856.95	3402.61	83.96
29	1803910-01	WT1811301505MK 0.249	181216P1_42	Analyte	28.7	4.89	3088.73	3402.61	90.78

30	1803910-02 WT1811301525MK 0.25273	181216P1_43	Analyte	28.7	4.89	3168.07	3402.61	93.11
31	IPA	181216P1_45	Analyte	28.7				
32	ST181216P1-12 PFC CS3 537 18KL1010	181216P1_46	Analyte	28.7	4.89	3196.43	3402.61	93.94
<b>32</b>	<b>ST181216P1-12 PFC CS3 537 18KL1010</b>	<b>181216P1_46</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>3196.43</b>	<b>3196.43</b>	<b>100.00</b>
33	1803910-03 WT1811301600MK 0.25043	181216P1_44	Analyte	28.7	4.89	3379.28	3196.43	105.72
34	1803910-04 WT1811301605MK 0.25048	181216P1_47	Analyte	28.7	4.89	3366.03	3196.43	105.31
35	1803910-05 WT1811301635MK 0.24785	181216P1_48	Analyte	28.7	4.89	2766.99	3196.43	86.57
36	1803910-06 WR1811301700MK 0.25783	181216P1_49	Analyte	28.7	4.89	2992.93	3196.43	93.63
37	1803910-07 WR1811301715MK 0.25038	181216P1_50	Analyte	28.7	4.89	3286.18	3196.43	102.81
38	1803911-01 GWEF1811300945KER 0.25486	181216P1_51	Analyte	28.7	4.89	2922.13	3196.43	91.42
39	1803912-01 GWEF1811301110KER 0.25299	181216P1_52	Analyte	28.7	4.89	2876.08	3196.43	89.98
40	1803913-01 GWEF1812030930KER 0.25245	181216P1_53	Analyte	28.7	4.89	3077.16	3196.43	96.27
41	1803914-01 GWEF1812031030KER 0.2546	181216P1_54	Analyte	28.7	4.89	2876.86	3196.43	90.00
42	1803915-01 GWEF1812031100KER 0.25251	181216P1_55	Analyte	28.7	4.89	3007.67	3196.43	94.09
43	IPA	181216P1_57	Analyte	28.7				
44	ST181215P2-13 PFC CS-1 537 18L1006	181216P1_58	Analyte	28.7	4.89	3380.41	3196.43	105.76
<b>44</b>	<b>ST181215P2-13 PFC CS-1 537 18L1006</b>	<b>181216P1_58</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.89</b>	<b>3380.41</b>	<b>3380.41</b>	<b>100.00</b>
45	1803916-01 GWNT1812031130KER 0.24821	181216P1_56	Analyte	28.7	4.89	2741.81	3380.41	81.11
46	1803917-01 GWNT1812031200KER 0.24347	181216P1_59	Analyte	28.7	4.89	3149.72	3380.41	93.18
47	1803918-01 GWEF1812031300KER 0.24784	181216P1_60	Analyte	28.7	4.89	3114.82	3380.41	92.14
48	1803920-01 GWEF1811301010KER 0.24563	181216P1_61	Analyte	28.7	4.89	3043.51	3380.41	90.03
49	1803920-02 GWEF1811301020KER 0.24888	181216P1_62	Analyte	28.7	4.89	2880.69	3380.41	85.22
50	1803920-03 GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	28.7	4.89	2963.13	3380.41	87.66
51	1803920-04 FB1811301050KER 0.24822	181216P1_64	Analyte	28.7	4.89	2958.92	3380.41	87.53
52	IPA	181216P1_66	Analyte	28.7				
53	ST181216P1-14 PFC CS1 537 18L1008	181216P1_67	Analyte	28.7	4.89	3179.79	3380.41	94.07

**Compound 25: d3-N-MeFOSAA**

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area %	
16	ST181216P1-11 PFC CS1 537 18L1008	181216P1_30	Analyte	40	5.22	15287.08	15287.08	100.00

17	1803880-10	WT1812031410RL 0.24629	181216P1_28	Analyte	40	5.22	15388.76	15287.08	100.67
18	1803880-11	WT1812031425RL 0.24475	181216P1_31	Analyte	40	5.22	14767.83	15287.08	96.60
19	1803880-12	WT1812031455RL 0.2461	181216P1_32	Analyte	40	5.22	13052.25	15287.08	85.38
20	1803885-01	GWNT1811300900GGA 0.24942	181216P1_33	Analyte	40	5.22	13167.43	15287.08	86.13
21	1803886-01	GWNT1811301100GGA 0.24619	181216P1_34	Analyte	40	5.22	14060.50	15287.08	91.98
22	1803887-01	GWNT1811301500GGA 0.25105	181216P1_35	Analyte	40	5.22	12409.76	15287.08	81.18
23	1803888-01	GWNT1811301600GGA 0.2509	181216P1_36	Analyte	40	5.22	12788.97	15287.08	83.66
24	B8L0055-BS1	LFB 0.25	181216P1_37	Analyte	40	5.22	13769.03	15287.08	90.07
25	B8L0055-MS1	LFSM 0.25176	181216P1_38	Analyte	40	5.22	13781.86	15287.08	90.15
26	B8L0055-MSD1	LFSMD 0.24514	181216P1_39	Analyte	40	5.22	14714.50	15287.08	96.25
27	B8L0055-BLK1	LRB 0.25	181216P1_40	Analyte	40	5.21	14179.21	15287.08	92.75
28	1803908-01	GWEF1811300920KER 0.24876	181216P1_41	Analyte	40	5.22	12605.98	15287.08	82.46
29	1803910-01	WT1811301505MK 0.249	181216P1_42	Analyte	40	5.22	14744.17	15287.08	96.45
30	1803910-02	WT1811301525MK 0.25273	181216P1_43	Analyte	40	5.22	14841.76	15287.08	97.09
31	IPA		181216P1_45	Analyte	40				
32	ST181216P1-12	PFC CS3 537 18KL1010	181216P1_46	Analyte	40	5.22	14456.60	15287.08	94.57
<b>32</b>	<b>ST181216P1-12</b>	<b>PFC CS3 537 18KL1010</b>	<b>181216P1_46</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>14456.60</b>	<b>14456.60</b>	<b>100.00</b>
33	1803910-03	WT1811301600MK 0.25043	181216P1_44	Analyte	40	5.22	14823.44	14456.60	102.54
34	1803910-04	WT1811301605MK 0.25048	181216P1_47	Analyte	40	5.22	14906.44	14456.60	103.11
35	1803910-05	WT1811301635MK 0.24785	181216P1_48	Analyte	40	5.22	12949.55	14456.60	89.58
36	1803910-06	WR1811301700MK 0.25783	181216P1_49	Analyte	40	5.22	13440.90	14456.60	92.97
37	1803910-07	WR1811301715MK 0.25038	181216P1_50	Analyte	40	5.22	14747.31	14456.60	102.01
38	1803911-01	GWEF1811300945KER 0.25486	181216P1_51	Analyte	40	5.22	13268.44	14456.60	91.78
39	1803912-01	GWEF1811301110KER 0.25299	181216P1_52	Analyte	40	5.22	12912.54	14456.60	89.32
40	1803913-01	GWEF1812030930KER 0.25245	181216P1_53	Analyte	40	5.22	14332.89	14456.60	99.14
41	1803914-01	GWEF1812031030KER 0.2546	181216P1_54	Analyte	40	5.22	13814.63	14456.60	95.56
42	1803915-01	GWEF1812031100KER 0.25251	181216P1_55	Analyte	40	5.22	15157.96	14456.60	104.85
43	IPA		181216P1_57	Analyte	40	5.21	5.27		
44	ST181215P2-13	PFC CS-1 537 18L1006	181216P1_58	Analyte	40	5.22	15009.51	14456.60	103.82
<b>44</b>	<b>ST181215P2-13</b>	<b>PFC CS-1 537 18L1006</b>	<b>181216P1_58</b>	<b>Analyte</b>	<b>40</b>	<b>5.22</b>	<b>15009.51</b>	<b>15009.51</b>	<b>100.00</b>
45	1803916-01	GWNT1812031130KER 0.24821	181216P1_56	Analyte	40	5.22	13205.39	15009.51	87.98
46	1803917-01	GWNT1812031200KER 0.24347	181216P1_59	Analyte	40	5.22	14799.91	15009.51	98.60

47	1803918-01	GWEF1812031300KER 0.24784	181216P1_60	Analyte	40	5.22	14344.06	15009.51	95.57
48	1803920-01	GWEF1811301010KER 0.24563	181216P1_61	Analyte	40	5.22	13370.34	15009.51	89.08
49	1803920-02	GWEF1811301020KER 0.24888	181216P1_62	Analyte	40	5.22	12668.87	15009.51	84.41
50	1803920-03	GWEF1811301040KER-FD 0.23237	181216P1_63	Analyte	40	5.22	13751.66	15009.51	91.62
51	1803920-04	FB1811301050KER 0.24822	181216P1_64	Analyte	40	5.22	13805.90	15009.51	91.98
52	IPA		181216P1_66	Analyte	40				
53	ST181216P1-14	PFC CS1 537 18L1008	181216P1_67	Analyte	40	5.22	14391.33	15009.51	95.88

# LC Calibration Standards Review Checklist

Q5

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
ST181216PI-11	(L)M H	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-12	(L)M H	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-13	(L)M H	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-14	(L)M H	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ION Ratio  
~~or 12/17/16~~  
~~NA~~

Full Mass Cal. Date: ~~12-11-18~~ 12/16/18

Run Log Present:

# of Samples per Sequence Checked:

Instrument Blank Saved:

IIS Area Saved:

Reviewed By: DM 12/17/18  
Initials/Date

Comments: DM 12/17/18

DW - L14



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-11.qld

Last Altered: Monday, December 17, 2018 09:15:36 Pacific Standard Time

Printed: Monday, December 17, 2018 09:16:04 Pacific Standard Time

*Van  
12/17/18*

Name: 181216P1\_30, Date: 16-Dec-2018, Time: 20:11:33, ID: ST181216P1-11 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	790.349	3402.606	1.00		3.36	3.38	6.67	8.32	94.1
2	2 PFHxA	313.1 > 269.1	4659.339	6657.874	1.00		3.68	3.68	7.00	10.4	104.2
3	4 PFHpA	363 > 319	6855.938	6657.874	1.00		4.15	4.16	10.3	10.4	103.6
4	6 PFHxS	399 > 80.0	890.033	3402.606	1.00		4.26	4.27	7.51	8.69	95.3
5	7 PFOA	413 > 369	7330.978	6657.874	1.00		4.53	4.53	11.0	10.7	106.7
6	24 13C4-PFOS	503.0 > 80	3402.606	3402.606	1.00	1.000	4.87	4.89	28.7	28.7	100.0
7	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
8	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
9	24 13C4-PFOS	503.0 > 80	3402.606	3402.606	1.00	1.000	4.87	4.89	28.7	28.7	100.0
10	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
11	-1										
12	8 PFNA	463 > 419	7316.739	6657.874	1.00		4.85	4.84	11.0	10.3	103.3
13	9 PFOS	498.9 > 80.0	935.210	3402.606	1.00		4.89	4.89	7.89	8.83	95.6
14	11 PFDA	513 > 469	7474.280	6657.874	1.00		5.10	5.11	11.2	11.0	110.3
15	12 N-MeFOSAA	570 > 419.1	2948.769	15287.082	1.00		5.22	5.22	7.72	9.47	94.7
16	13 N-EtFOSAA	584.0 > 419.1	2892.137	15287.082	1.00		5.32	5.33	7.57	10.3	102.5
17	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
18	24 13C4-PFOS	503.0 > 80	3402.606	3402.606	1.00	1.000	4.87	4.89	28.7	28.7	100.0
19	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	15287.082	15287.082	1.00	1.000	5.20	5.22	40.0	40.0	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	15287.082	15287.082	1.00	1.000	5.20	5.22	40.0	40.0	100.0
22	-1										
23	14 PFUnA	563 > 519	7508.244	6657.874	1.00		5.35	5.33	11.3	10.4	104.1
24	16 PFDoA	613 > 569	9397.650	6657.874	1.00		5.55	5.53	14.1	9.67	96.7
25	17 PFTrDA	662.9 > 619	8645.497	6657.874	1.00		5.71	5.70	13.0	9.83	98.3
26	18 PFTeDA	712.9 > 669	9014.460	6657.874	1.00		5.87	5.85	13.5	9.75	97.5
27	19 13C2-PFHxA	315.1 > 270	6529.766	6657.874	1.00	0.942	3.68	3.68	9.81	10.4	104.1
28	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
29	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
30	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
31	23 13C2-PFOA	415 > 370	6657.874	6657.874	1.00	1.000	4.51	4.53	10.0	10.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	9206.301	6657.874	1.00	1.301	5.12	5.10	13.8	10.6	106.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	13867.544	15287.082	1.00	1.070	5.33	5.32	36.3	33.9	84.7

Dataset: Untitled

Last Altered: Monday, December 17, 2018 09:18:16 Pacific Standard Time

Printed: Monday, December 17, 2018 09:18:42 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181216P1_1	IPA	16-Dec-18	14:45:45
2	2 181216P1_2	ST181216P1-1 PFC CS-4 537 18L1003	16-Dec-18	14:57:09
3	3 181216P1_3	ST181216P1-2 PFC CS-3 537 18L1004	16-Dec-18	15:08:28
4	4 181216P1_4	ST181216P1-3 PFC CS-2 537 18L1005	16-Dec-18	15:19:39
5	5 181216P1_5	ST181216P1-4 PFC CS-1 537 18L1006	16-Dec-18	15:30:50
6	6 181216P1_6	ST181216P1-5 PFC CS0 537 18L1007	16-Dec-18	15:42:09
7	7 181216P1_7	ST181216P1-6 PFC CS1 537 18L1008	16-Dec-18	15:53:20
8	8 181216P1_8	ST181216P1-7 PFC CS2 537 18L1009	16-Dec-18	16:04:31
9	9 181216P1_9	ST181216P1-8 PFC CS3 537 18L1010	16-Dec-18	16:15:41
10	10 181216P1_10	ST181216P1-9 PFC CS4 537 18L1011	16-Dec-18	16:26:52
11	11 181216P1_11	ST181216P1-10 PFC CS5 537 18L1012	16-Dec-18	16:38:11
12	12 181216P1_12	IPA	16-Dec-18	16:49:23
13	13 181216P1_13	ST181216P1-1 PFC ICV 537 18L1013	16-Dec-18	17:00:49
14	14 181216P1_14	IPA	16-Dec-18	17:12:00
15	15 181216P1_65	1803982-08 DUP-1 0.23495	16-Dec-18	17:23:27
16	16 181216P1_15	B8L0040-BS1 LFB 0.25	16-Dec-18	17:34:46
17	17 181216P1_16	B8L0040-MS1 LFSM 0.24632	16-Dec-18	17:46:14
18	18 181216P1_17	B8L0040-MSD1 LFSMD 0.24541	16-Dec-18	17:57:24
19	19 181216P1_18	B8L0040-BLK1 LRB 0.25	16-Dec-18	18:08:35
20	20 181216P1_19	1803880-01 WT1812031015RL 0.25121	16-Dec-18	18:19:45
21	21 181216P1_20	1803880-02 WT1812031045RL 0.24764	16-Dec-18	18:30:56
22	22 181216P1_21	1803880-03 WT1812031105RL 0.24809	16-Dec-18	18:42:07
23	23 181216P1_22	1803880-04 WT1812031135RL 0.24029	16-Dec-18	18:53:18
24	24 181216P1_23	1803880-05 WT1812031150RL 0.23672	16-Dec-18	19:04:29
25	25 181216P1_24	1803880-06 WT1812031155RL-FD 0.24196	16-Dec-18	19:15:39
26	26 181216P1_25	1803880-07 WT1812031210RL 0.24346	16-Dec-18	19:26:50
27	27 181216P1_26	1803880-08 WT1812031220RL 0.25142	16-Dec-18	19:38:01
28	28 181216P1_27	1803880-09 WT1812031350RL 0.24833	16-Dec-18	19:49:11
29	29 181216P1_29	IPA	16-Dec-18	20:00:22
30	30 181216P1_30	ST181216P1-11 PFC CS1 537 18L1008	16-Dec-18	20:11:33
31	31 181216P1_28	1803880-10 WT1812031410RL 0.24629	16-Dec-18	20:22:44
32	32 181216P1_31	1803880-11 WT1812031425RL 0.24475	16-Dec-18	20:34:11

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Last Altered: Monday, December 17, 2018 09:18:16 Pacific Standard Time  
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Compound name: PFBS

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33	33 181216P1_32	1803880-12 WT1812031455RL 0.2461	16-Dec-18	20:45:22
34	34 181216P1_33	1803885-01 GWNT1811300900GGA 0.24942	16-Dec-18	20:56:32
35	35 181216P1_34	1803886-01 GWNT1811301100GGA 0.24619	16-Dec-18	21:07:43
36	36 181216P1_35	1803887-01 GWNT1811301500GGA 0.25105	16-Dec-18	21:18:53
37	37 181216P1_36	1803888-01 GWNT1811301600GGA 0.2509	16-Dec-18	21:30:04
38	38 181216P1_37	B8L0055-BS1 LFB 0.25	16-Dec-18	21:41:15
39	39 181216P1_38	B8L0055-MS1 LFSM 0.25176	16-Dec-18	21:52:25
40	40 181216P1_39	B8L0055-MSD1 LFSMD 0.24514	16-Dec-18	22:03:36
41	41 181216P1_40	B8L0055-BLK1 LRB 0.25	16-Dec-18	22:14:47
42	42 181216P1_41	1803908-01 GWEF1811300920KER 0.24876	16-Dec-18	22:25:58
43	43 181216P1_42	1803910-01 WT1811301505MK 0.249	16-Dec-18	22:37:09
44	44 181216P1_43	1803910-02 WT1811301525MK 0.25273	16-Dec-18	22:48:19
45	45 181216P1_45	IPA	16-Dec-18	22:59:30
46	46 181216P1_46	ST181216P1-12 PFC CS3 537 18KL1010	16-Dec-18	23:10:40
47	47 181216P1_44	1803910-03 WT1811301600MK 0.25043	16-Dec-18	23:21:52
48	48 181216P1_47	1803910-04 WT1811301605MK 0.25048	16-Dec-18	23:33:18
49	49 181216P1_48	1803910-05 WT1811301635MK 0.24785	16-Dec-18	23:44:29
50	50 181216P1_49	1803910-06 WR1811301700MK 0.25783	16-Dec-18	23:55:48
51	51 181216P1_50	1803910-07 WR1811301715MK 0.25038	17-Dec-18	00:07:00
52	52 181216P1_51	1803911-01 GWEF1811300945KER 0.25486	17-Dec-18	00:18:10
53	53 181216P1_52	1803912-01 GWEF1811301110KER 0.25299	17-Dec-18	00:29:20
54	54 181216P1_53	1803913-01 GWEF1812030930KER 0.25245	17-Dec-18	00:40:32
55	55 181216P1_54	1803914-01 GWEF1812031030KER 0.2546	17-Dec-18	00:51:42
56	56 181216P1_55	1803915-01 GWEF1812031100KER 0.25251	17-Dec-18	01:02:53
57	57 181216P1_57	IPA <i>6-P1 MET 12/17/18</i>	17-Dec-18	01:14:04
58	58 181216P1_58	ST181216P1-13 PFC CS-1 537 18L1006	17-Dec-18	01:25:14
59	59 181216P1_56	1803916-01 GWNT1812031130KER 0.24821	17-Dec-18	01:36:25
60	60 181216P1_59	1803917-01 GWNT1812031200KER 0.24347	17-Dec-18	01:47:52
61	61 181216P1_60	1803918-01 GWEF1812031300KER 0.24784	17-Dec-18	01:59:02
62	62 181216P1_61	1803920-01 GWEF1811301010KER 0.24563	17-Dec-18	02:10:13
63	63 181216P1_62	1803920-02 GWEF1811301020KER 0.24888	17-Dec-18	02:21:24
64	64 181216P1_63	1803920-03 GWEF1811301040KER-FD 0.23237	17-Dec-18	02:32:35
65	65 181216P1_64	1803920-04 FB1811301050KER 0.24822	17-Dec-18	02:43:45
66	66 181216P1_66	IPA	17-Dec-18	02:54:56
67	67 181216P1_67	ST181216P1-14 PFC CS1 537 18L1008	17-Dec-18	03:06:07

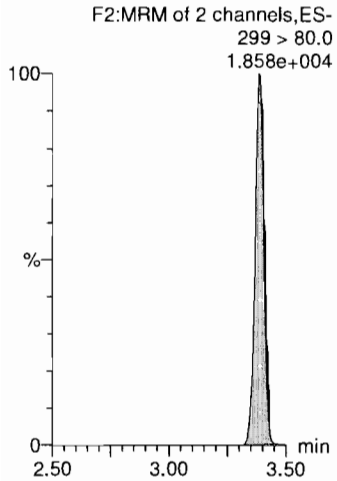
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Printed: Monday, December 17, 2018 09:16:04 Pacific Standard Time

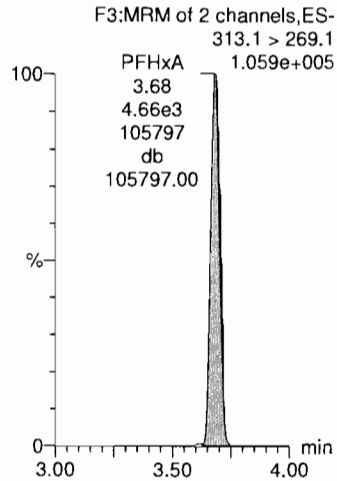
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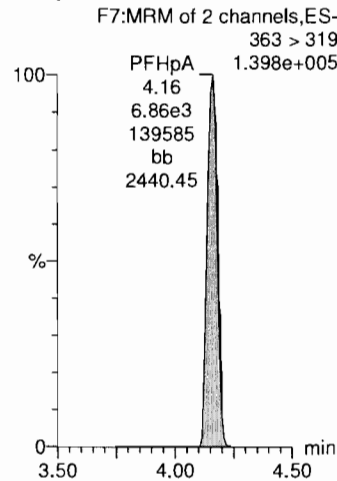
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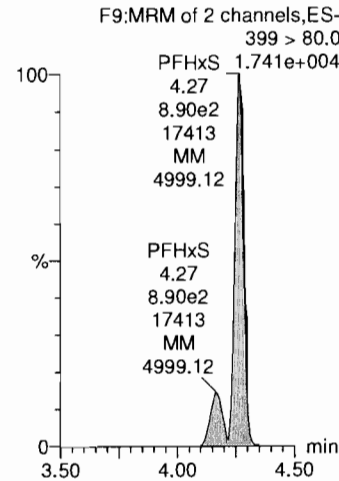
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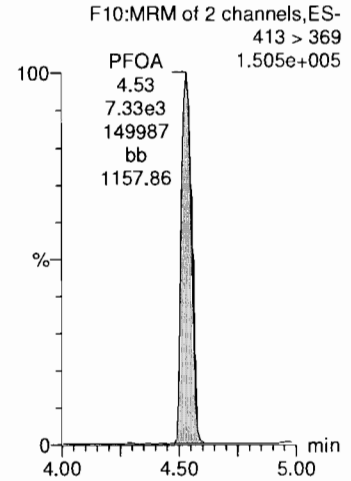
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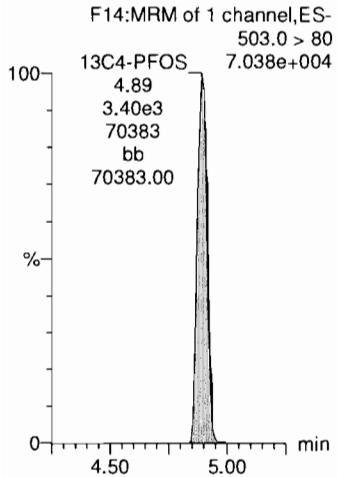
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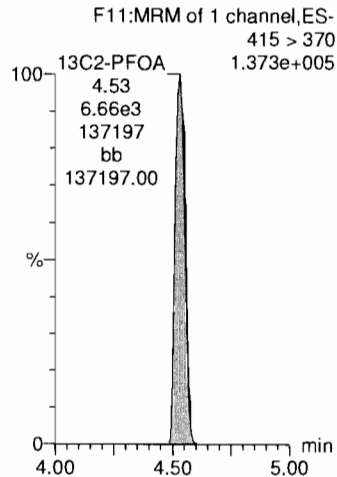
**PFOA**



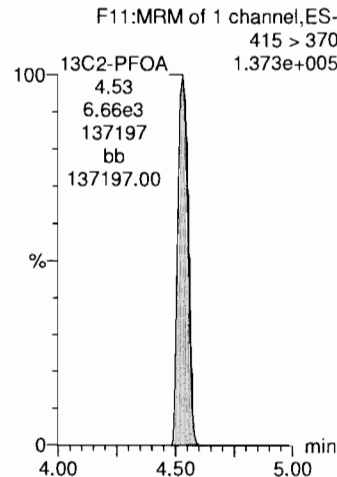
**13C4-PFOS**



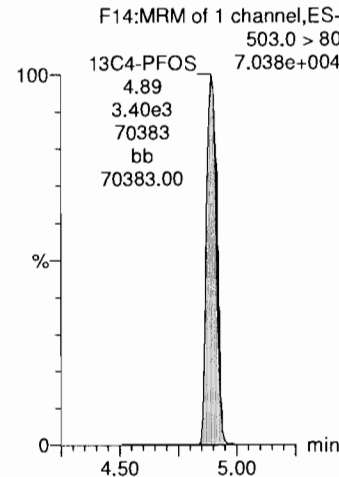
**13C2-PFOA**



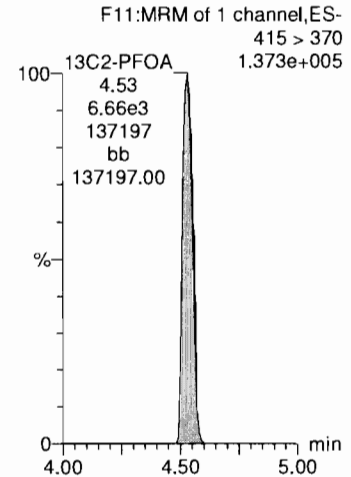
**13C2-PFOA**



**13C4-PFOS**



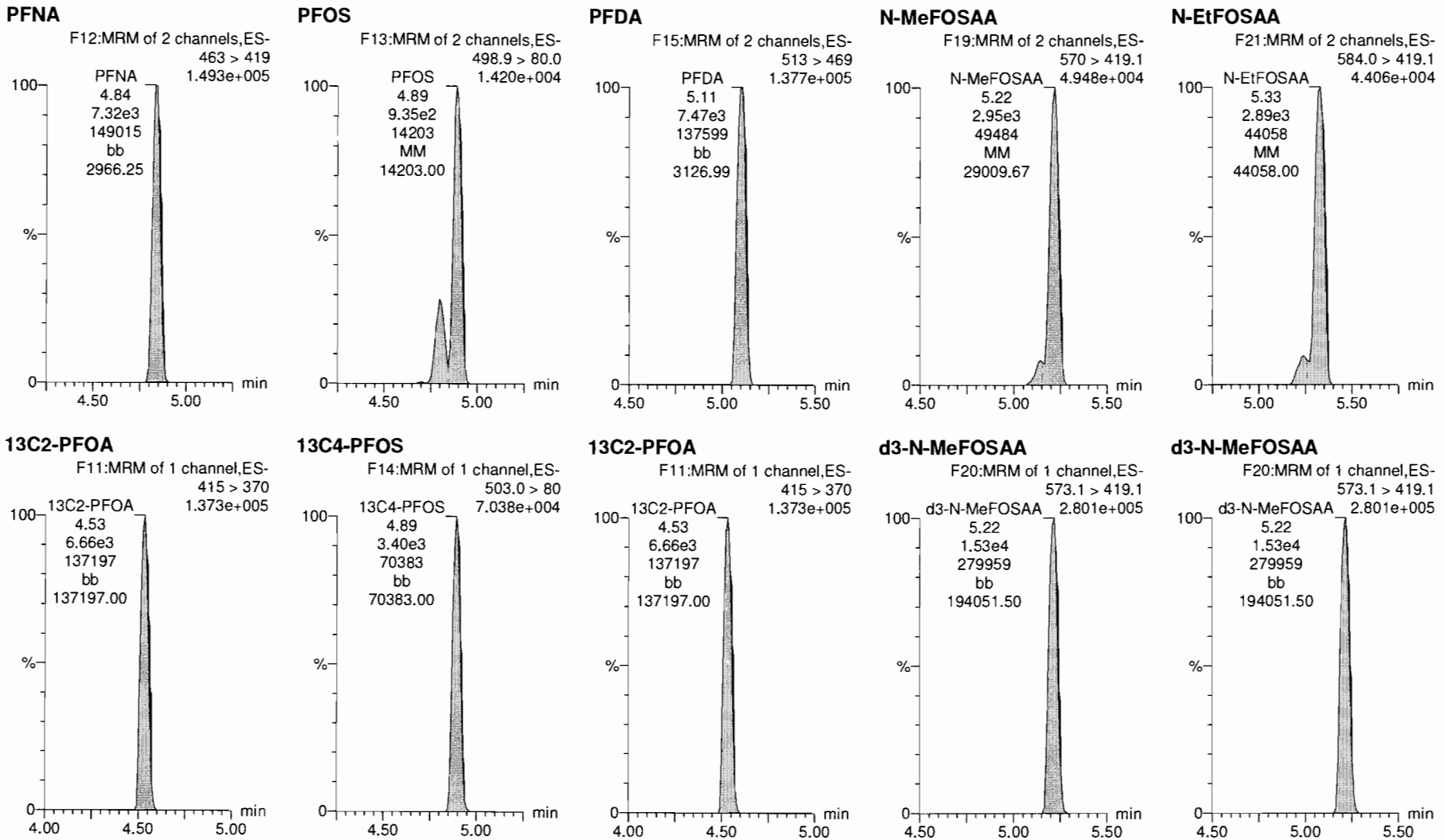
**13C2-PFOA**



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Last Altered: Monday, December 17, 2018 09:15:36 Pacific Standard Time  
Printed: Monday, December 17, 2018 09:16:04 Pacific Standard Time

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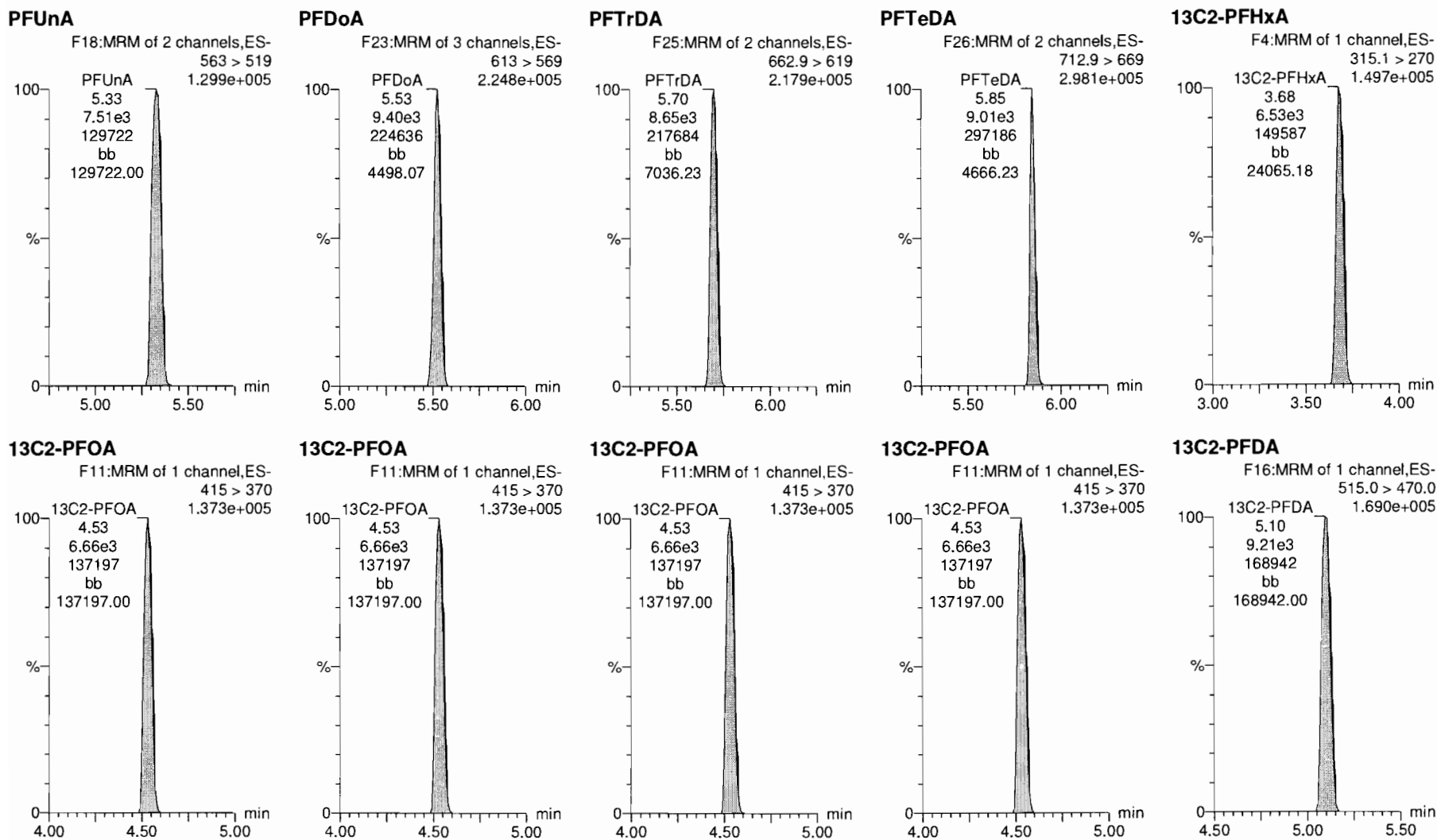


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Last Altered: Monday, December 17, 2018 09:15:36 Pacific Standard Time

Printed: Monday, December 17, 2018 09:16:04 Pacific Standard Time

Name: 181216P1\_30, Date: 16-Dec-2018, Time: 20:11:33, ID: ST181216P1-11 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008



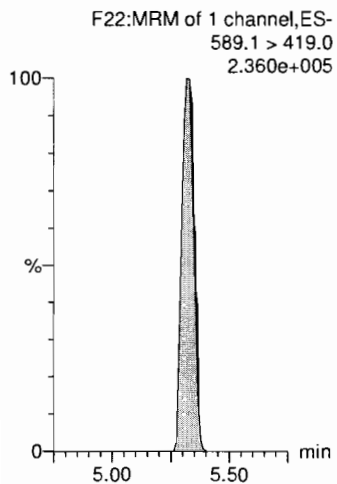
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Last Altered: Monday, December 17, 2018 09:15:36 Pacific Standard Time

Printed: Monday, December 17, 2018 09:16:04 Pacific Standard Time

Name: 181216P1\_30, Date: 16-Dec-2018, Time: 20:11:33, ID: ST181216P1-11 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

**d5-N-EtFOSAA**



## ICAL

50%-150%

**Compound 23: 13C2-PFOA**

ID	Name	Type	Std. Cr	RT	Area	ICAL Area	Area %
1	IPA	Analyte	10				
2	ST181217P1-1 PFC CS-1 537 18L1006	Analyte	10	4.40	7727.13	7179.65	107.63
3	IPA	Analyte	10			7179.65	
4	B8L0106-BS1 LFB 0.25	Analyte	10	4.48	8158.68	7179.65	113.64
5	B8L0106-BSD1 LFB 0.25	Analyte	10	4.48	7472.71	7179.65	104.08
6	B8L0106-BLK1 LRB 0.25	Analyte	10	4.48	7523.75	7179.65	104.79
7	1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	Analyte	10	4.48	8238.25	7179.65	114.74
8	1804036-02 WI-CV-1RW90-MID202-121118 0.24972	Analyte	10	4.48	7967.87	7179.65	110.98
9	1804036-03 WI-CV-1RW90-MID201-121118 0.25155	Analyte	10	4.48	6434.18	7179.65	89.62
10	1804036-04 WI-CV-1RW90-INF201-121118 0.24833	Analyte	10	4.48	7455.09	7179.65	103.84
11	1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	Analyte	10	4.48	7400.35	7179.65	103.07
12	1804036-06 WI-CV-1FB90-121118 0.25038	Analyte	10	4.48	8530.60	7179.65	118.82
13	B8L0115-BS1 LFB 0.25	Analyte	10	4.48	6951.73	7179.65	96.83
14	B8L0115-MS1 LFSM 0.24075	Analyte	10	4.48	7536.93	7179.65	104.98
15	B8L0115-MSD1 LFSMD 0.23834	Analyte	10	4.48	8053.38	7179.65	112.17
16	B8L0115-BLK1 LRB 0.25	Analyte	10	4.48	8671.77	7179.65	120.78
17	1804038-01 WF-RW10-1218 0.24003	Analyte	10	4.48	7157.30	7179.65	99.69
18	1804038-02 WF-FB10-1218 0.23544	Analyte	10	4.48	7623.54	7179.65	106.18
19	1804038-03 WF-RW10PP-1218 0.20175	Analyte	10	4.48	8048.59	7179.65	112.10
20	1804038-04 WF-RW06-1218 0.23625	Analyte	10	4.48	8095.06	7179.65	112.75
21	1804038-05 WF-FB06-1218 0.23467	Analyte	10	4.48	9704.37	7179.65	135.16
22	IPA	Analyte	10			7179.65	
23	B8L0076-MS1@10X LFSM 0.25052	Analyte	10	4.48	25.33	7179.65	0.35 DILUTION
24	B8L0076-MSD1@10 XLFSMD 0.24755	Analyte	10	4.48	752.36	7179.65	10.48 DILUTION
25	IPA	Analyte	10			7179.65	
26	B8L0076-MS1 LFSM 0.25052	Analyte	10	4.48	7166.54	7179.65	99.82
27	B8L0076-MSD1 LFSMD 0.24755	Analyte	10	4.48	7051.19	7179.65	98.21
28	IPA	Analyte	10			7179.65	
29	ST181217P1-2 PFC CS1 537 18L1008	Analyte	10	4.48	7874.09	7179.65	109.67
30	IPA	Analyte	10			7179.65	
31	B8L0085-MS1 LFSM 0.24534	Analyte	10	4.48	7381.70	7179.65	102.81



32	B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	10	4.48	7324.79	7179.65	102.02
33	B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	10	4.48	7184.75	7179.65	100.07
34	B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	10	4.48	7300.49	7179.65	101.68
35	1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	10	4.48	7495.93	7179.65	104.41
36	1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	10	4.48	7310.78	7179.65	101.83
37	1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	10	4.48	7580.09	7179.65	105.58
38	1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	10	4.48	7504.24	7179.65	104.52
39	1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	10	4.48	7614.33	7179.65	106.05
40	1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	10	4.48	7196.62	7179.65	100.24
41	1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	10	4.48	7553.79	7179.65	105.21
42	1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	10	4.48	6842.36	7179.65	95.30
43	1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	10	4.48	7508.91	7179.65	104.59
44	1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	10	4.48	7388.72	7179.65	102.91
45	IPA	181217P1_45	Analyte	10			7179.65	
46	ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	10	4.48	7604.05	7179.65	105.91
47	IPA	181217P1_47	Analyte	10			7179.65	
48	1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	10	4.48	7496.61	7179.65	104.41
49	1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	10	4.48	7305.28	7179.65	101.75
50	1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	10	4.48	7597.90	7179.65	105.83
51	1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	10	4.48	7345.22	7179.65	102.31
52	1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	10	4.48	7383.88	7179.65	102.84
53	1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	10	4.48	7263.46	7179.65	101.17
54	IPA	181217P1_54	Analyte	10			7179.65	
55	ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	10	4.48	7800.55	7179.65	108.65
56	IPA	181217P1_56	Analyte	10				

**Compound 24: 13C4-PFOS**

ID	Name	Type	td.	Cor	RT	Area	ICAL Area	Area %
1	IPA	Analyte	28.7					
2	ST181217P1-1 PFC CS-1 537 18L1006	Analyte	28.7	4.78		3722.08	3306.04	112.58
3	IPA	Analyte	28.7				3306.04	
4	B8L0106-BS1 LFB 0.25	Analyte	28.7	4.85		3750.88	3306.04	113.46
5	B8L0106-BSD1 LFB 0.25	Analyte	28.7	4.85		3480.75	3306.04	105.28

6 B8L0106-BLK1 LRB 0.25	181217P1_6	Analyte	28.7	4.85	3357.51	3306.04	101.56
7 1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	181217P1_7	Analyte	28.7	4.85	3900.16	3306.04	117.97
8 1804036-02 WI-CV-1RW90-MID202-121118 0.24972	181217P1_8	Analyte	28.7	4.85	3824.78	3306.04	115.69
9 1804036-03 WI-CV-1RW90-MID201-121118 0.25155	181217P1_9	Analyte	28.7	4.85	2893.77	3306.04	87.53
10 1804036-04 WI-CV-1RW90-INF201-121118 0.24833	181217P1_10	Analyte	28.7	4.86	3567.93	3306.04	107.92
11 1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	181217P1_11	Analyte	28.7	4.86	3457.95	3306.04	104.59
12 1804036-06 WI-CV-1FB90-121118 0.25038	181217P1_12	Analyte	28.7	4.86	4209.13	3306.04	127.32
13 B8L0115-BS1 LFB 0.25	181217P1_13	Analyte	28.7	4.86	3448.91	3306.04	104.32
14 B8L0115-MS1 LFSM 0.24075	181217P1_14	Analyte	28.7	4.86	3391.27	3306.04	102.58
15 B8L0115-MSD1 LFSMD 0.23834	181217P1_15	Analyte	28.7	4.86	3761.06	3306.04	113.76
16 B8L0115-BLK1 LRB 0.25	181217P1_16	Analyte	28.7	4.86	4146.78	3306.04	125.43
17 1804038-01 WF-RW10-1218 0.24003	181217P1_17	Analyte	28.7	4.86	3389.43	3306.04	102.52
18 1804038-02 WF-FB10-1218 0.23544	181217P1_18	Analyte	28.7	4.86	3587.16	3306.04	108.50
19 1804038-03 WF-RW10PP-1218 0.20175	181217P1_19	Analyte	28.7	4.86	3760.10	3306.04	113.73
20 1804038-04 WF-RW06-1218 0.23625	181217P1_20	Analyte	28.7	4.86	3675.60	3306.04	111.18
21 1804038-05 WF-FB06-1218 0.23467	181217P1_21	Analyte	28.7	4.86	4598.77	3306.04	139.10
22 IPA	181217P1_22	Analyte	28.7			3306.04	
23 B8L0076-MS1@10X LFSM 0.25052	181217P1_23	Analyte	28.7	4.86	17.31	3306.04	0.52 DILUTION
24 B8L0076-MSD1@10 XLFSMD 0.24755	181217P1_24	Analyte	28.7	4.86	332.55	3306.04	10.06 DILUTION
25 IPA	181217P1_25	Analyte	28.7			3306.04	
26 B8L0076-MS1 LFSM 0.25052	181217P1_26	Analyte	28.7	4.86	3388.70	3306.04	102.50
27 B8L0076-MSD1 LFSMD 0.24755	181217P1_27	Analyte	28.7	4.86	3202.88	3306.04	96.88
28 IPA	181217P1_28	Analyte	28.7			3306.04	
29 ST181217P1-2 PFC CS1 537 18L1008	181217P1_29	Analyte	28.7	4.86	3710.81	3306.04	112.24
30 IPA	181217P1_30	Analyte	28.7			3306.04	0.00
31 B8L0085-MS1 LFSM 0.24534	181217P1_31	Analyte	28.7	4.86	3688.18	3306.04	111.56
32 B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	28.7	4.86	3499.27	3306.04	105.84
33 B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	28.7	4.86	3504.23	3306.04	105.99
34 B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	28.7	4.86	3456.05	3306.04	104.54
35 1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	28.7	4.86	3848.59	3306.04	116.41
36 1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	28.7	4.86	3406.83	3306.04	103.05
37 1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	28.7	4.86	3555.33	3306.04	107.54
38 1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	28.7	4.86	3669.75	3306.04	111.00
39 1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	28.7	4.86	3532.69	3306.04	106.86

40	1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	28.7	4.86	3326.64	3306.04	100.62
41	1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	28.7	4.86	3595.67	3306.04	108.76
42	1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	28.7	4.86	3361.23	3306.04	101.67
43	1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	28.7	4.86	3748.36	3306.04	113.38
44	1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	28.7	4.86	3611.63	3306.04	109.24
45	IPA	181217P1_45	Analyte	28.7			3306.04	
46	ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	28.7	4.86	3542.97	3306.04	107.17
47	IPA	181217P1_47	Analyte	28.7			3306.04	
48	1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	28.7	4.86	3701.06	3306.04	111.95
49	1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	28.7	4.86	3821.85	3306.04	115.60
50	1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	28.7	4.86	3649.55	3306.04	110.39
51	1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	28.7	4.86	3530.55	3306.04	106.79
52	1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	28.7	4.86	3387.71	3306.04	102.47
53	1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	28.7	4.86	3383.43	3306.04	102.34
54	IPA	181217P1_54	Analyte	28.7			3306.04	
55	ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	28.7	4.86	3551.51	3306.04	107.43
56	IPA	181217P1_56	Analyte	28.7				

### Compound 25: d3-N-MeFOSAA

ID	Name	Type	td.	Cor	RT	Area	ICAL Area	Area %
1	IPA	Analyte	40					
2	ST181217P1-1 PFC CS-1 537 18L1006	Analyte	40	5.10		14446.15	15074.67	95.83
3	IPA	Analyte	40				15074.67	
4	B8L0106-BS1 LFB 0.25	Analyte	40	5.17		13584.02	15074.67	90.11
5	B8L0106-BSD1 LFB 0.25	Analyte	40	5.18		13651.65	15074.67	90.56
6	B8L0106-BLK1 LRB 0.25	Analyte	40	5.18		13566.17	15074.67	89.99
7	1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	Analyte	40	5.18		15411.38	15074.67	102.23
8	1804036-02 WI-CV-1RW90-MID202-121118 0.24972	Analyte	40	5.18		15078.18	15074.67	100.02
9	1804036-03 WI-CV-1RW90-MID201-121118 0.25155	Analyte	40	5.18		11896.77	15074.67	78.92
10	1804036-04 WI-CV-1RW90-INF201-121118 0.24833	Analyte	40	5.18		13530.92	15074.67	89.76
11	1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	Analyte	40	5.18		14064.65	15074.67	93.30
12	1804036-06 WI-CV-1FB90-121118 0.25038	Analyte	40	5.18		16467.85	15074.67	109.24

13	B8L0115-BS1 LFB 0.25	181217P1_13	Analyte	40	5.18	14052.57	15074.67	93.22	
14	B8L0115-MS1 LFSM 0.24075	181217P1_14	Analyte	40	5.18	14013.09	15074.67	92.96	
15	B8L0115-MSD1 LFSMD 0.23834	181217P1_15	Analyte	40	5.18	15711.58	15074.67	104.23	
16	B8L0115-BLK1 LRB 0.25	181217P1_16	Analyte	40	5.18	16136.65	15074.67	107.04	
17	1804038-01 WF-RW10-1218 0.24003	181217P1_17	Analyte	40	5.18	13088.61	15074.67	86.83	
18	1804038-02 WF-FB10-1218 0.23544	181217P1_18	Analyte	40	5.18	14950.60	15074.67	99.18	
19	1804038-03 WF-RW10PP-1218 0.20175	181217P1_19	Analyte	40	5.18	14806.72	15074.67	98.22	
20	1804038-04 WF-RW06-1218 0.23625	181217P1_20	Analyte	40	5.18	15019.71	15074.67	99.64	
21	1804038-05 WF-FB06-1218 0.23467	181217P1_21	Analyte	40	5.18	18304.53	15074.67	121.43	
22	IPA	181217P1_22	Analyte	40			15074.67		
23	B8L0076-MS1@10X LFSM 0.25052	181217P1_23	Analyte	40	5.18	74.58	15074.67	0.49	DILUTION
24	B8L0076-MSD1@10 XLFSMD 0.24755	181217P1_24	Analyte	40	5.18	1333.83	15074.67	8.85	DILUTION
25	IPA	181217P1_25	Analyte	40			15074.67		
26	B8L0076-MS1 LFSM 0.25052	181217P1_26	Analyte	40	5.18	13801.78	15074.67	91.56	
27	B8L0076-MSD1 LFSMD 0.24755	181217P1_27	Analyte	40	5.18	13397.13	15074.67	88.87	
28	IPA	181217P1_28	Analyte	40			15074.67		
29	ST181217P1-2 PFC CS1 537 18L1008	181217P1_29	Analyte	40	5.18	15013.43	15074.67	99.59	
30	IPA	181217P1_30	Analyte	40			15074.67		
31	B8L0085-MS1 LFSM 0.24534	181217P1_31	Analyte	40	5.18	14864.86	15074.67	98.61	
32	B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	40	5.18	14204.10	15074.67	94.22	
33	B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	40	5.18	14385.39	15074.67	95.43	
34	B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	40	5.18	14038.35	15074.67	93.13	
35	1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	40	5.18	14886.67	15074.67	98.75	
36	1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	40	5.18	13282.79	15074.67	88.11	
37	1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	40	5.18	14367.37	15074.67	95.31	
38	1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	40	5.18	15963.38	15074.67	105.90	
39	1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	40	5.18	14469.87	15074.67	95.99	
40	1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	40	5.18	13416.98	15074.67	89.00	
41	1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	40	5.18	14405.09	15074.67	95.56	
42	1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	40	5.18	13864.31	15074.67	91.97	
43	1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	40	5.18	14382.44	15074.67	95.41	
44	1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	40	5.18	14583.74	15074.67	96.74	
45	IPA	181217P1_45	Analyte	40			15074.67		
46	ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	40	5.18	14277.40	15074.67	94.71	

47 IPA	181217P1_47	Analyte	40			15074.67	
48 1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	40	5.18	14678.20	15074.67	97.37
49 1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	40	5.18	14503.47	15074.67	96.21
50 1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	40	5.18	15122.91	15074.67	100.32
51 1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	40	5.18	14398.02	15074.67	95.51
52 1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	40	5.18	14293.41	15074.67	94.82
53 1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	40	5.18	13666.63	15074.67	90.66
54 IPA	181217P1_54	Analyte	40			15074.67	
55 ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	40	5.18	15252.49	15074.67	101.18
56 IPA	181217P1_56	Analyte	40				

## CCAL

70%-140%

### Compound 23: 13C2-PFOA

ID	Name	Type	Std. Cr	RT	Area	CCAL Area	Area %
1 IPA	181217P1_1	Analyte	10				
<b>2 ST181217P1-1 PFC CS-1 537 18L1006</b>	<b>181217P1_2</b>	<b>Analyte</b>	<b>10</b>	<b>4.40</b>	<b>7727.13</b>	<b>7727.13</b>	<b>100.00</b>
3 IPA	181217P1_3	Analyte	10				
4 B8L0106-BS1 LFB 0.25	181217P1_4	Analyte	10	4.48	8158.68	7727.13	105.58
5 B8L0106-BSD1 LFB 0.25	181217P1_5	Analyte	10	4.48	7472.71	7727.13	96.71
6 B8L0106-BLK1 LRB 0.25	181217P1_6	Analyte	10	4.48	7523.75	7727.13	97.37
7 1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	181217P1_7	Analyte	10	4.48	8238.25	7727.13	106.61
8 1804036-02 WI-CV-1RW90-MID202-121118 0.24972	181217P1_8	Analyte	10	4.48	7967.87	7727.13	103.12
9 1804036-03 WI-CV-1RW90-MID201-121118 0.25155	181217P1_9	Analyte	10	4.48	6434.18	7727.13	83.27
10 1804036-04 WI-CV-1RW90-INF201-121118 0.24833	181217P1_10	Analyte	10	4.48	7455.09	7727.13	96.48
11 1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	181217P1_11	Analyte	10	4.48	7400.35	7727.13	95.77
12 1804036-06 WI-CV-1FB90-121118 0.25038	181217P1_12	Analyte	10	4.48	8530.60	7727.13	110.40
13 B8L0115-BS1 LFB 0.25	181217P1_13	Analyte	10	4.48	6951.73	7727.13	89.97
14 B8L0115-MS1 LFSM 0.24075	181217P1_14	Analyte	10	4.48	7536.93	7727.13	97.54
15 B8L0115-MSD1 LFSMD 0.23834	181217P1_15	Analyte	10	4.48	8053.38	7727.13	104.22
16 B8L0115-BLK1 LRB 0.25	181217P1_16	Analyte	10	4.48	8671.77	7727.13	112.23
17 1804038-01 WF-RW10-1218 0.24003	181217P1_17	Analyte	10	4.48	7157.30	7727.13	92.63
18 1804038-02 WF-FB10-1218 0.23544	181217P1_18	Analyte	10	4.48	7623.54	7727.13	98.66
19 1804038-03 WF-RW10PP-1218 0.20175	181217P1_19	Analyte	10	4.48	8048.59	7727.13	104.16
20 1804038-04 WF-RW06-1218 0.23625	181217P1_20	Analyte	10	4.48	8095.06	7727.13	104.76

21	1804038-05 WF-FB06-1218 0.23467	181217P1_21	Analyte	10	4.48	9704.37	7727.13	125.59	
22	IPA	181217P1_22	Analyte	10					
23	B8L0076-MS1@10X LFSM 0.25052	181217P1_23	Analyte	10	4.48	25.33	7727.13	0.33	
24	B8L0076-MSD1@10 XLFSMD 0.24755	181217P1_24	Analyte	10	4.48	752.36	7727.13	9.74	DILUTION
25	IPA	181217P1_25	Analyte	10					DILUTION
26	B8L0076-MS1 LFSM 0.25052	181217P1_26	Analyte	10	4.48	7166.54	7727.13	92.75	
27	B8L0076-MSD1 LFSMD 0.24755	181217P1_27	Analyte	10	4.48	7051.19	7727.13	91.25	
28	IPA	181217P1_28	Analyte	10					
29	ST181217P1-2 PFC CS1 537 18L1008	181217P1_29	Analyte	10	4.48	7874.09	7727.13	101.90	
<b>29</b>	<b>ST181217P1-2 PFC CS1 537 18L1008</b>	<b>181217P1_29</b>	<b>Analyte</b>	<b>10</b>	<b>4.48</b>	<b>7874.09</b>	<b>7874.09</b>	<b>100.00</b>	
30	IPA	181217P1_30	Analyte	10					
31	B8L0085-MS1 LFSM 0.24534	181217P1_31	Analyte	10	4.48	7381.70	7874.09	93.75	
32	B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	10	4.48	7324.79	7874.09	93.02	
33	B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	10	4.48	7184.75	7874.09	91.25	
34	B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	10	4.48	7300.49	7874.09	92.72	
35	1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	10	4.48	7495.93	7874.09	95.20	
36	1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	10	4.48	7310.78	7874.09	92.85	
37	1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	10	4.48	7580.09	7874.09	96.27	
38	1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	10	4.48	7504.24	7874.09	95.30	
39	1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	10	4.48	7614.33	7874.09	96.70	
40	1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	10	4.48	7196.62	7874.09	91.40	
41	1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	10	4.48	7553.79	7874.09	95.93	
42	1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	10	4.48	6842.36	7874.09	86.90	
43	1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	10	4.48	7508.91	7874.09	95.36	
44	1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	10	4.48	7388.72	7874.09	93.84	
45	IPA	181217P1_45	Analyte	10			7874.09		
46	ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	10	4.48	7604.05	7874.09	96.57	
<b>46</b>	<b>ST181217P1-3 PFC CS3 537 18L1010</b>	<b>181217P1_46</b>	<b>Analyte</b>	<b>10</b>	<b>4.48</b>	<b>7604.05</b>	<b>7604.05</b>	<b>100.00</b>	
47	IPA	181217P1_47	Analyte	10			7604.05	0.00	
48	1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	10	4.48	7496.61	7604.05	98.59	
49	1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	10	4.48	7305.28	7604.05	96.07	
50	1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	10	4.48	7597.90	7604.05	99.92	

51	1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	10	4.48	7345.22	7604.05	96.60
52	1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	10	4.48	7383.88	7604.05	97.10
53	1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	10	4.48	7263.46	7604.05	95.52
54	IPA	181217P1_54	Analyte	10				
55	ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	10	4.48	7800.55	7604.05	102.58
56	IPA	181217P1_56	Analyte	10				

**Compound 24: 13C4-PFOS**

ID	Name	Type	td.	Cor	RT	Area	CCAL Area	Area %
1	IPA	Analyte	28.7					
<b>2</b>	<b>ST181217P1-1 PFC CS-1 537 18L1006</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.78</b>		<b>3722.08</b>	<b>3722.08</b>	<b>100.00</b>
3	IPA	Analyte	28.7					
4	B8L0106-BS1 LFB 0.25	Analyte	28.7	4.85		3750.88	3722.08	100.77
5	B8L0106-BSD1 LFB 0.25	Analyte	28.7	4.85		3480.75	3722.08	93.52
6	B8L0106-BLK1 LRB 0.25	Analyte	28.7	4.85		3357.51	3722.08	90.21
7	1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	Analyte	28.7	4.85		3900.16	3722.08	104.78
8	1804036-02 WI-CV-1RW90-MID202-121118 0.24972	Analyte	28.7	4.85		3824.78	3722.08	102.76
9	1804036-03 WI-CV-1RW90-MID201-121118 0.25155	Analyte	28.7	4.85		2893.77	3722.08	77.75
10	1804036-04 WI-CV-1RW90-INF201-121118 0.24833	Analyte	28.7	4.86		3567.93	3722.08	95.86
11	1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	Analyte	28.7	4.86		3457.95	3722.08	92.90
12	1804036-06 WI-CV-1FB90-121118 0.25038	Analyte	28.7	4.86		4209.13	3722.08	113.09
13	B8L0115-BS1 LFB 0.25	Analyte	28.7	4.86		3448.91	3722.08	92.66
14	B8L0115-MS1 LFSM 0.24075	Analyte	28.7	4.86		3391.27	3722.08	91.11
15	B8L0115-MSD1 LFSMD 0.23834	Analyte	28.7	4.86		3761.06	3722.08	101.05
16	B8L0115-BLK1 LRB 0.25	Analyte	28.7	4.86		4146.78	3722.08	111.41
17	1804038-01 WF-RW10-1218 0.24003	Analyte	28.7	4.86		3389.43	3722.08	91.06
18	1804038-02 WF-FB10-1218 0.23544	Analyte	28.7	4.86		3587.16	3722.08	96.38
19	1804038-03 WF-RW10PP-1218 0.20175	Analyte	28.7	4.86		3760.10	3722.08	101.02
20	1804038-04 WF-RW06-1218 0.23625	Analyte	28.7	4.86		3675.60	3722.08	98.75
21	1804038-05 WF-FB06-1218 0.23467	Analyte	28.7	4.86		4598.77	3722.08	123.55
22	IPA	Analyte	28.7					
23	B8L0076-MS1@10X LFSM 0.25052	Analyte	28.7	4.86		17.31	3722.08	0.46 DILUTION
24	B8L0076-MSD1@10 XLFSMD 0.24755	Analyte	28.7	4.86		332.55	3722.08	8.93 DILUTION

25 IPA	181217P1_25	Analyte	28.7					
26 B8L0076-MS1 LFSM 0.25052	181217P1_26	Analyte	28.7	4.86	3388.70	3722.08	91.04	
27 B8L0076-MSD1 LFSMD 0.24755	181217P1_27	Analyte	28.7	4.86	3202.88	3722.08	86.05	
28 IPA	181217P1_28	Analyte	28.7					
29 ST181217P1-2 PFC CS1 537 18L1008	181217P1_29	Analyte	28.7	4.86	3710.81	3722.08	99.70	
<b>29 ST181217P1-2 PFC CS1 537 18L1008</b>	<b>181217P1_29</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.86</b>	<b>3710.81</b>	<b>3710.81</b>	<b>100.00</b>	
30 IPA	181217P1_30	Analyte	28.7					
31 B8L0085-MS1 LFSM 0.24534	181217P1_31	Analyte	28.7	4.86	3688.18	3710.81	99.39	
32 B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	28.7	4.86	3499.27	3710.81	94.30	
33 B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	28.7	4.86	3504.23	3710.81	94.43	
34 B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	28.7	4.86	3456.05	3710.81	93.13	
35 1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	28.7	4.86	3848.59	3710.81	103.71	
36 1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	28.7	4.86	3406.83	3710.81	91.81	
37 1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	28.7	4.86	3555.33	3710.81	95.81	
38 1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	28.7	4.86	3669.75	3710.81	98.89	
39 1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	28.7	4.86	3532.69	3710.81	95.20	
40 1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	28.7	4.86	3326.64	3710.81	89.65	
41 1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	28.7	4.86	3595.67	3710.81	96.90	
42 1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	28.7	4.86	3361.23	3710.81	90.58	
43 1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	28.7	4.86	3748.36	3710.81	101.01	
44 1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	28.7	4.86	3611.63	3710.81	97.33	
45 IPA	181217P1_45	Analyte	28.7					
46 ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	28.7	4.86	3542.97	3710.81	95.48	
<b>46 ST181217P1-3 PFC CS3 537 18L1010</b>	<b>181217P1_46</b>	<b>Analyte</b>	<b>28.7</b>	<b>4.86</b>	<b>3542.97</b>	<b>3542.97</b>	<b>100.00</b>	
47 IPA	181217P1_47	Analyte	28.7					
48 1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	28.7	4.86	3701.06	3542.97	104.46	
49 1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	28.7	4.86	3821.85	3542.97	107.87	
50 1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	28.7	4.86	3649.55	3542.97	103.01	
51 1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	28.7	4.86	3530.55	3542.97	99.65	
52 1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	28.7	4.86	3387.71	3542.97	95.62	
53 1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	28.7	4.86	3383.43	3542.97	95.50	
54 IPA	181217P1_54	Analyte	28.7					



55 ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	28.7	4.86	3551.51	3542.97	100.24
56 IPA	181217P1_56	Analyte	28.7				

**Compound 25: d3-N-MeFOSAA**

ID	Name	Type	td.	Cor	RT	Area	CCAL Area	Area %
1 IPA	181217P1_1	Analyte	40					
<b>2 ST181217P1-1 PFC CS-1 537 18L1006</b>	<b>181217P1_2</b>	<b>Analyte</b>	<b>40</b>	<b>5.10</b>	<b>14446.15</b>	<b>14446.15</b>	<b>100.00</b>	
3 IPA	181217P1_3	Analyte	40					
4 B8L0106-BS1 LFB 0.25	181217P1_4	Analyte	40	5.17	13584.02	14446.15		94.03
5 B8L0106-BSD1 LFB 0.25	181217P1_5	Analyte	40	5.18	13651.65	14446.15		94.50
6 B8L0106-BLK1 LRB 0.25	181217P1_6	Analyte	40	5.18	13566.17	14446.15		93.91
7 1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	181217P1_7	Analyte	40	5.18	15411.38	14446.15		106.68
8 1804036-02 WI-CV-1RW90-MID202-121118 0.24972	181217P1_8	Analyte	40	5.18	15078.18	14446.15		104.38
9 1804036-03 WI-CV-1RW90-MID201-121118 0.25155	181217P1_9	Analyte	40	5.18	11896.77	14446.15		82.35
10 1804036-04 WI-CV-1RW90-INF201-121118 0.24833	181217P1_10	Analyte	40	5.18	13530.92	14446.15		93.66
11 1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	181217P1_11	Analyte	40	5.18	14064.65	14446.15		97.36
12 1804036-06 WI-CV-1FB90-121118 0.25038	181217P1_12	Analyte	40	5.18	16467.85	14446.15		113.99
13 B8L0115-BS1 LFB 0.25	181217P1_13	Analyte	40	5.18	14052.57	14446.15		97.28
14 B8L0115-MS1 LFSM 0.24075	181217P1_14	Analyte	40	5.18	14013.09	14446.15		97.00
15 B8L0115-MSD1 LFSMD 0.23834	181217P1_15	Analyte	40	5.18	15711.58	14446.15		108.76
16 B8L0115-BLK1 LRB 0.25	181217P1_16	Analyte	40	5.18	16136.65	14446.15		111.70
17 1804038-01 WF-RW10-1218 0.24003	181217P1_17	Analyte	40	5.18	13088.61	14446.15		90.60
18 1804038-02 WF-FB10-1218 0.23544	181217P1_18	Analyte	40	5.18	14950.60	14446.15		103.49
19 1804038-03 WF-RW10PP-1218 0.20175	181217P1_19	Analyte	40	5.18	14806.72	14446.15		102.50
20 1804038-04 WF-RW06-1218 0.23625	181217P1_20	Analyte	40	5.18	15019.71	14446.15		103.97
21 1804038-05 WF-FB06-1218 0.23467	181217P1_21	Analyte	40	5.18	18304.53	14446.15		126.71
22 IPA	181217P1_22	Analyte	40					
23 B8L0076-MS1@10X LFSM 0.25052	181217P1_23	Analyte	40	5.18	74.58	14446.15		0.52 DILUTION
24 B8L0076-MSD1@10 XLFSMD 0.24755	181217P1_24	Analyte	40	5.18	1333.83	14446.15		9.23 DILUTION
25 IPA	181217P1_25	Analyte	40					
26 B8L0076-MS1 LFSM 0.25052	181217P1_26	Analyte	40	5.18	13801.78	14446.15		95.54
27 B8L0076-MSD1 LFSMD 0.24755	181217P1_27	Analyte	40	5.18	13397.13	14446.15		92.74

28 IPA	181217P1_28	Analyte	40					
29 ST181217P1-2 PFC CS1 537 18L1008	181217P1_29	Analyte	40	5.18	15013.43	14446.15		103.93
<b>29 ST181217P1-2 PFC CS1 537 18L1008</b>	<b>181217P1_29</b>	<b>Analyte</b>	<b>40</b>	<b>5.18</b>	<b>15013.43</b>	<b>15013.43</b>		<b>100.00</b>
30 IPA	181217P1_30	Analyte	40					
31 B8L0085-MS1 LFSM 0.24534	181217P1_31	Analyte	40	5.18	14864.86	15013.43		99.01
32 B8L0085-MSD1 LFSMD 0.25203	181217P1_32	Analyte	40	5.18	14204.10	15013.43		94.61
33 B8L0085-BS1 LFB 0.25	181217P1_33	Analyte	40	5.18	14385.39	15013.43		95.82
34 B8L0085-BLK1 LRB 0.25	181217P1_34	Analyte	40	5.18	14038.35	15013.43		93.51
35 1803919-01 GWIN1812031440KER 0.23972	181217P1_35	Analyte	40	5.18	14886.67	15013.43		99.16
36 1803954-01 GWNT1812040840KME 0.23957	181217P1_36	Analyte	40	5.18	13282.79	15013.43		88.47
37 1803956-01 GWNT1812041030KME 0.25974	181217P1_37	Analyte	40	5.18	14367.37	15013.43		95.70
38 1803957-01 GWNT1812041400KME 0.2509	181217P1_38	Analyte	40	5.18	15963.38	15013.43		106.33
39 1803957-02 GWNT1812041410KME-FD 0.25054	181217P1_39	Analyte	40	5.18	14469.87	15013.43		96.38
40 1803957-03 FB1812041415KME 0.25712	181217P1_40	Analyte	40	5.18	13416.98	15013.43		89.37
41 1803958-01 GWNT1812041440KME 0.25827	181217P1_41	Analyte	40	5.18	14405.09	15013.43		95.95
42 1803959-01 GWNT1812051015KME 0.25294	181217P1_42	Analyte	40	5.18	13864.31	15013.43		92.35
43 1803960-01 GWNT1812051120KME 0.26071	181217P1_43	Analyte	40	5.18	14382.44	15013.43		95.80
44 1803961-01 GWNT1812051305KME 0.25334	181217P1_44	Analyte	40	5.18	14583.74	15013.43		97.14
45 IPA	181217P1_45	Analyte	40					
46 ST181217P1-3 PFC CS3 537 18L1010	181217P1_46	Analyte	40	5.18	14277.40	15013.43		95.10
<b>46 ST181217P1-3 PFC CS3 537 18L1010</b>	<b>181217P1_46</b>	<b>Analyte</b>	<b>40</b>	<b>5.18</b>	<b>14277.40</b>	<b>14277.40</b>		<b>100.00</b>
47 IPA	181217P1_47	Analyte	40					
48 1803962-01 GWEF1812051355KME 0.26061	181217P1_48	Analyte	40	5.18	14678.20	14277.40		102.81
49 1803963-01 GWNT1812051530KME 0.25721	181217P1_49	Analyte	40	5.18	14503.47	14277.40		101.58
50 1803994-01 GWEF1812040910KER 0.23798	181217P1_50	Analyte	40	5.18	15122.91	14277.40		105.92
51 1803995-01 GWIN1812040940KER 0.23659	181217P1_51	Analyte	40	5.18	14398.02	14277.40		100.84
52 1803996-01 GWEF1812041050KER 0.24126	181217P1_52	Analyte	40	5.18	14293.41	14277.40		100.11
53 1803997-01 GWEF1812041120KER 0.25766	181217P1_53	Analyte	40	5.18	13666.63	14277.40		95.72
54 IPA	181217P1_54	Analyte	40					
55 ST181217P1-4 PFC CS-1 537 18L1006	181217P1_55	Analyte	40	5.18	15252.49	14277.40		106.83
56 IPA	181217P1_56	Analyte	40					

LC Calibration Standards Review Checkiist

Q5

Calibration ID:	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
ST181217PI-1 (L) M H	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
-2 (L) M H	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-3 (L) M (H)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-4 (L) M H	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input checked="" type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input checked="" type="checkbox"/></del> N/A Cal 12/18/18	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>
<del>_____ (L) M H</del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>	<del><input type="checkbox"/></del>

Full Mass Cal. Date: 12-11-18

Run Log Present:

# of Samples per Sequence Checked:

Instrument Blank Saved:

IIS Area Saved:

Reviewed By: Cal 12/18/18  
Initials/Date

Comments:

DW-L14

Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-2.qld

Last Altered: Monday, December 17, 2018 15:42:16 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:04 Pacific Standard Time

Name: 181217P1\_2, Date: 17-Dec-2018, Time: 15:28:13, ID: ST181217P1-1 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

#	Name	Trace	Area	IS Area	WL/Vol	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	170.371	3722.078	1.00		3.25	3.21	1.31	1.64	92.1
2	2 PFHxA	313.1 > 269.1	1085.795	7727.130	1.00		3.55	3.56	1.41	2.09	104.6
3	4 PFHpA	363 > 319	1470.550	7727.130	1.00		4.02	4.01	1.90	1.92	95.8
4	6 PFHxS	399 > 80.0	173.324	3722.078	1.00		4.15	4.13	1.34	1.55	85.0
5	7 PFOA	413 > 369	1740.430	7727.130	1.00		4.40	4.40	2.25	2.18	109.1
6	24 13C4-PFOS	503.0 > 80	3722.078	3722.078	1.00	1.000	4.87	4.78	28.7	28.7	100.0
7	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
8	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
9	24 13C4-PFOS	503.0 > 80	3722.078	3722.078	1.00	1.000	4.87	4.78	28.7	28.7	100.0
10	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
11	-1										
12	8 PFNA	463 > 419	1846.755	7727.130	1.00		4.71	4.71	2.39	2.25	112.3
13	9 PFOS	498.9 > 80.0	208.997	3722.078	1.00		4.78	4.78	1.61	1.80	97.0
14	11 PFDA	513 > 469	1766.731	7727.130	1.00		5.00	4.99	2.29	2.26	112.9
15	12 N-MeFOSAA	570 > 419.1	470.528	14446.146	1.00		5.10	5.11	1.30	1.61	80.3
16	13 N-EtFOSAA	584.0 > 419.1	487.919	14446.146	1.00		5.22	5.22	1.35	1.83	91.5
17	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
18	24 13C4-PFOS	503.0 > 80	3722.078	3722.078	1.00	1.000	4.87	4.78	28.7	28.7	100.0
19	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	14446.146	14446.146	1.00	1.000	5.20	5.10	40.0	40.0	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	14446.146	14446.146	1.00	1.000	5.20	5.10	40.0	40.0	100.0
22	-1										
23	14 PFUnA	563 > 519	1867.532	7727.130	1.00		5.21	5.23	2.42	2.23	111.5
24	16 PFDoA	613 > 569	2181.316	7727.130	1.00		5.42	5.42	2.82	1.93	96.7
25	17 PFTrDA	662.9 > 619	2631.277	7727.130	1.00		5.58	5.61	3.41	2.58	129.0
26	18 PFTeDA	712.9 > 669	2725.089	7727.130	1.00		5.74	5.76	3.53	2.54	126.9
27	19 13C2-PFHxA	315.1 > 270	7670.217	7727.130	1.00	0.942	3.55	3.55	9.93	10.5	105.4
28	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
29	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
30	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
31	23 13C2-PFOA	415 > 370	7727.130	7727.130	1.00	1.000	4.51	4.40	10.0	10.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	11791.331	7727.130	1.00	1.301	4.98	5.00	15.3	11.7	117.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	16406.939	14446.146	1.00	1.070	5.21	5.22	45.4	42.4	106.1

*1/Cal  
12/18/18*

Dataset: Untitled

Last Altered: Tuesday, December 18, 2018 07:16:02 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:16:25 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181217P1_1	IPA	17-Dec-18	15:16:52
2	2 181217P1_2	ST181217P1-1 PFC CS-1 537 18L1006	17-Dec-18	15:28:13
3	3 181217P1_3	IPA	17-Dec-18	15:57:35
4	4 181217P1_4	B8L0106-BS1 LFB 0.25	17-Dec-18	16:08:47
5	5 181217P1_5	B8L0106-BSD1 LFB 0.25	17-Dec-18	16:19:57
6	6 181217P1_6	B8L0106-BLK1 LRB 0.25	17-Dec-18	16:31:08
7	7 181217P1_7	1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	17-Dec-18	16:42:19
8	8 181217P1_8	1804036-02 WI-CV-1RW90-MID202-121118 0.24972	17-Dec-18	16:53:30
9	9 181217P1_9	1804036-03 WI-CV-1RW90-MID201-121118 0.25155	17-Dec-18	17:04:41
10	10 181217P1_10	1804036-04 WI-CV-1RW90-INF201-121118 0.24833	17-Dec-18	17:15:51
11	11 181217P1_11	1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	17-Dec-18	17:27:02
12	12 181217P1_12	1804036-06 WI-CV-1FB90-121118 0.25038	17-Dec-18	17:38:13
13	13 181217P1_13	B8L0115-BS1 LFB 0.25	17-Dec-18	17:49:23
14	14 181217P1_14	B8L0115-MS1 LFSM 0.24075	17-Dec-18	18:00:34
15	15 181217P1_15	B8L0115-MSD1 LFSMD 0.23834	17-Dec-18	18:11:45
16	16 181217P1_16	B8L0115-BLK1 LRB 0.25	17-Dec-18	18:22:56
17	17 181217P1_17	1804038-01 WF-RW10-1218 0.24003	17-Dec-18	18:34:07
18	18 181217P1_18	1804038-02 WF-FB10-1218 0.23544	17-Dec-18	18:45:17
19	19 181217P1_19	1804038-03 WF-RW10PP-1218 0.20175	17-Dec-18	18:56:28
20	20 181217P1_20	1804038-04 WF-RW06-1218 0.23625	17-Dec-18	19:07:38
21	21 181217P1_21	1804038-05 WF-FB06-1218 0.23467	17-Dec-18	19:18:49
22	22 181217P1_22	IPA	17-Dec-18	19:30:00
23	23 181217P1_23	B8L0076-MS1@10X LFSM 0.25052	17-Dec-18	19:41:11
24	24 181217P1_24	B8L0076-MSD1@10 XLFSMD 0.24755	17-Dec-18	19:52:22
25	25 181217P1_25	IPA	17-Dec-18	20:03:32
26	26 181217P1_26	B8L0076-MS1 LFSM 0.25052	17-Dec-18	20:14:43
27	27 181217P1_27	B8L0076-MSD1 LFSMD 0.24755	17-Dec-18	20:25:53
28	28 181217P1_28	IPA	17-Dec-18	20:37:04
29	29 181217P1_29	ST181217P1-2 PFC CS1 537 18L1008	17-Dec-18	20:48:15
30	30 181217P1_30	IPA	17-Dec-18	20:59:25
31	31 181217P1_31	B8L0085-MS1 LFSM 0.24534	17-Dec-18	21:10:36
32	32 181217P1_32	B8L0085-MSD1 LFSMD 0.25203	17-Dec-18	21:21:47

Dataset: Untitled

Last Altered: Tuesday, December 18, 2018 07:16:02 Pacific Standard Time  
 Printed: Tuesday, December 18, 2018 07:16:25 Pacific Standard Time

Compound name: PFBS

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34	34 181217P1_34	B8L0085-BLK1 LRB 0.25	17-Dec-18	21:44:16
35	35 181217P1_35	1803919-01 GWIN1812031440KER 0.23972	17-Dec-18	21:55:28
36	36 181217P1_36	1803954-01 GWNT1812040840KME 0.23957	17-Dec-18	22:06:38
37	37 181217P1_37	1803956-01 GWNT1812041030KME 0.25974	17-Dec-18	22:17:49
38	38 181217P1_38	1803957-01 GWNT1812041400KME 0.2509	17-Dec-18	22:29:00
39	39 181217P1_39	1803957-02 GWNT1812041410KME-FD 0.25054	17-Dec-18	22:40:11
40	40 181217P1_40	1803957-03 FB1812041415KME 0.25712	17-Dec-18	22:51:21
41	41 181217P1_41	1803958-01 GWNT1812041440KME 0.25827	17-Dec-18	23:02:40
42	42 181217P1_42	1803959-01 GWNT1812051015KME 0.25294	17-Dec-18	23:13:52
43	43 181217P1_43	1803960-01 GWNT1812051120KME 0.26071	17-Dec-18	23:25:03
44	44 181217P1_44	1803961-01 GWNT1812051305KME 0.25334	17-Dec-18	23:36:14
45	45 181217P1_45	IPA	17-Dec-18	23:47:25
46	46 181217P1_46	ST181217P1-3 PFC CS3 537 18L1010	17-Dec-18	23:58:35
47	47 181217P1_47	IPA	18-Dec-18	00:09:46
48	48 181217P1_48	1803962-01 GWEF1812051355KME 0.26061	18-Dec-18	00:20:57
49	49 181217P1_49	1803963-01 GWNT1812051530KME 0.25721	18-Dec-18	00:32:07
50	50 181217P1_50	1803994-01 GWEF1812040910KER 0.23798	18-Dec-18	00:43:18
51	51 181217P1_51	1803995-01 GWIN1812040940KER 0.23659	18-Dec-18	00:54:29
52	52 181217P1_52	1803996-01 GWEF1812041050KER 0.24126	18-Dec-18	01:05:40
53	53 181217P1_53	1803997-01 GWEF1812041120KER 0.25766	18-Dec-18	01:16:50
54	54 181217P1_54	IPA	18-Dec-18	01:28:01
55	55 181217P1_55	ST181217P1-4 PFC CS-1 537 18L1006	18-Dec-18	01:39:12
56	56 181217P1_56	IPA	18-Dec-18	01:50:22

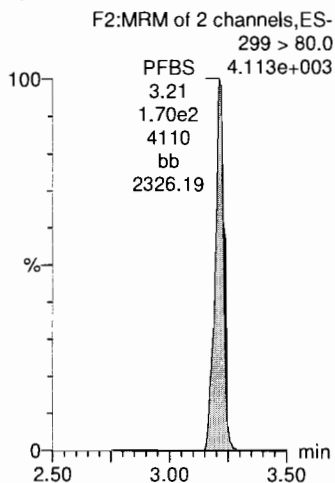
Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-2.qld

Last Altered: Monday, December 17, 2018 15:42:16 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:04 Pacific Standard Time

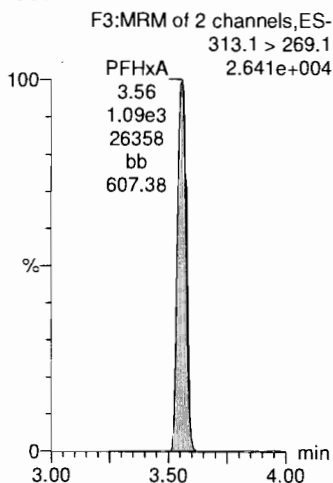
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Name: 181217P1\_2, Date: 17-Dec-2018, Time: 15:28:13, ID: ST181217P1-1 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

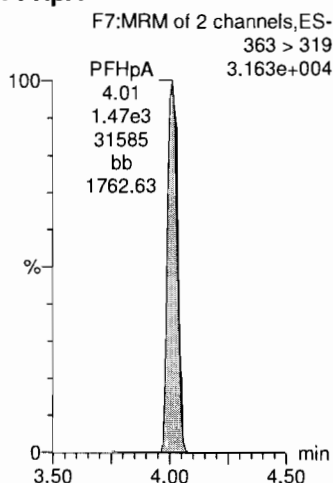
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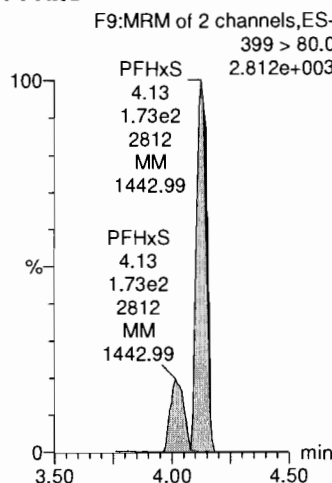
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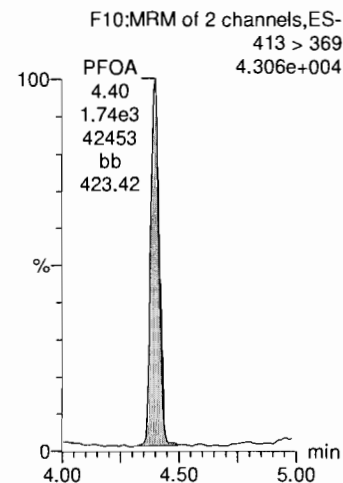
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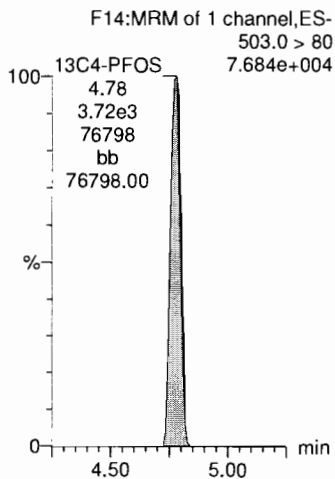
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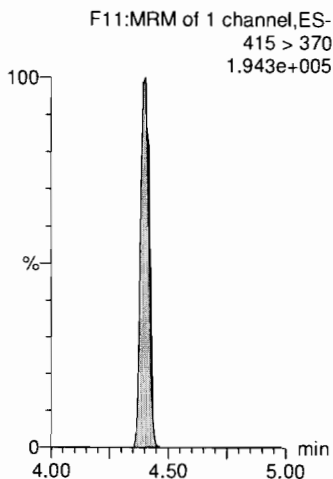
**PFOA**



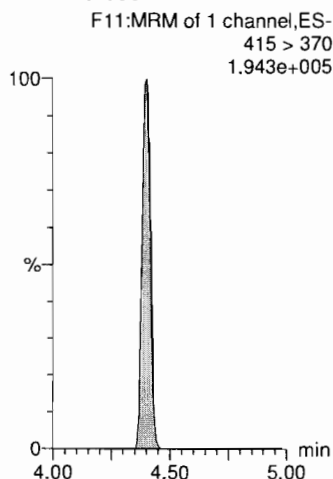
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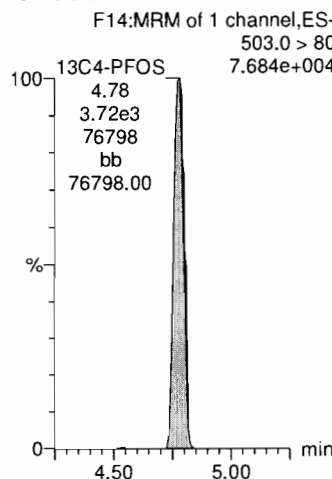
**13C2-PFOA**



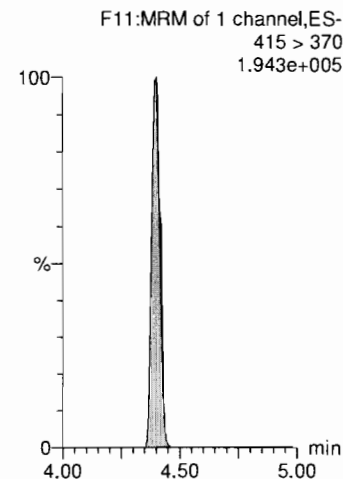
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

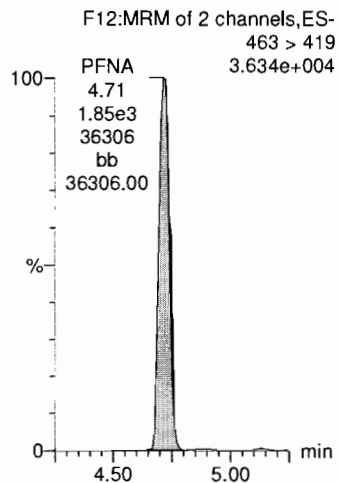


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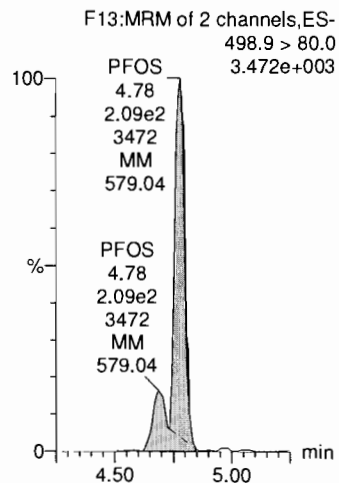
Last Altered: Monday, December 17, 2018 15:42:16 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:04 Pacific Standard Time

Name: 181217P1\_2, Date: 17-Dec-2018, Time: 15:28:13, ID: ST181217P1-1 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

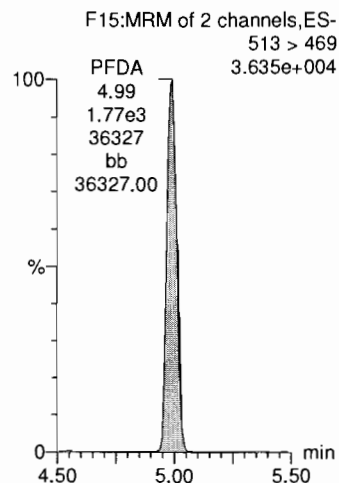
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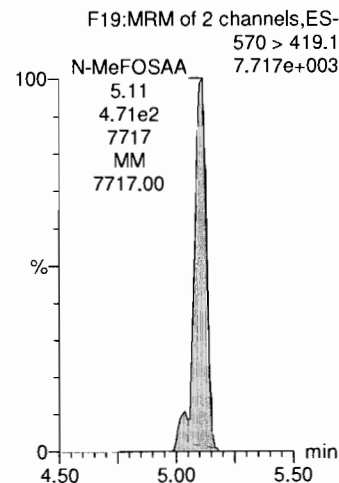
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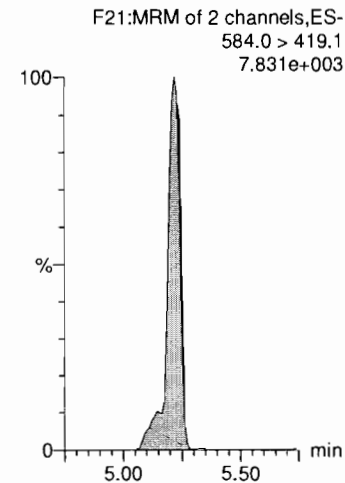
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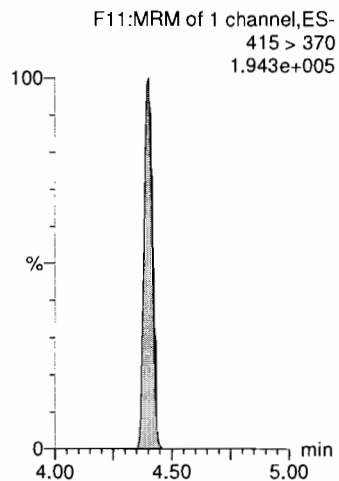
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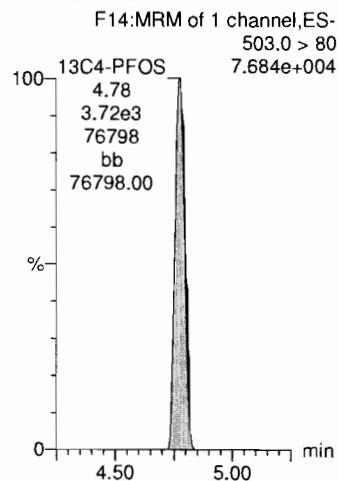
**N-EtFOSAA**



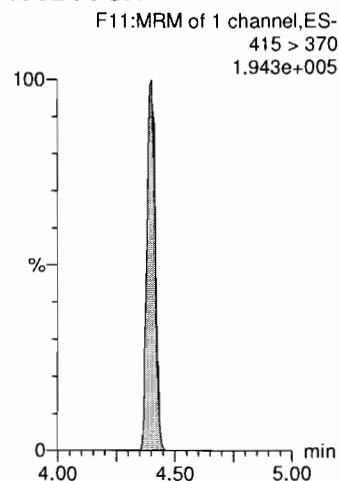
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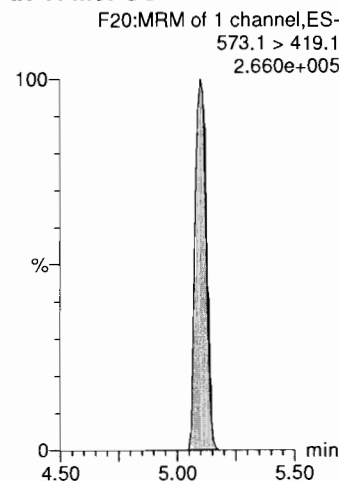
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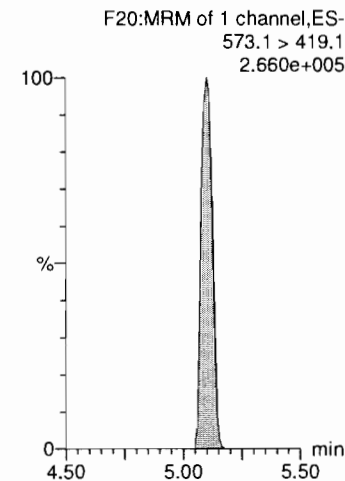
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

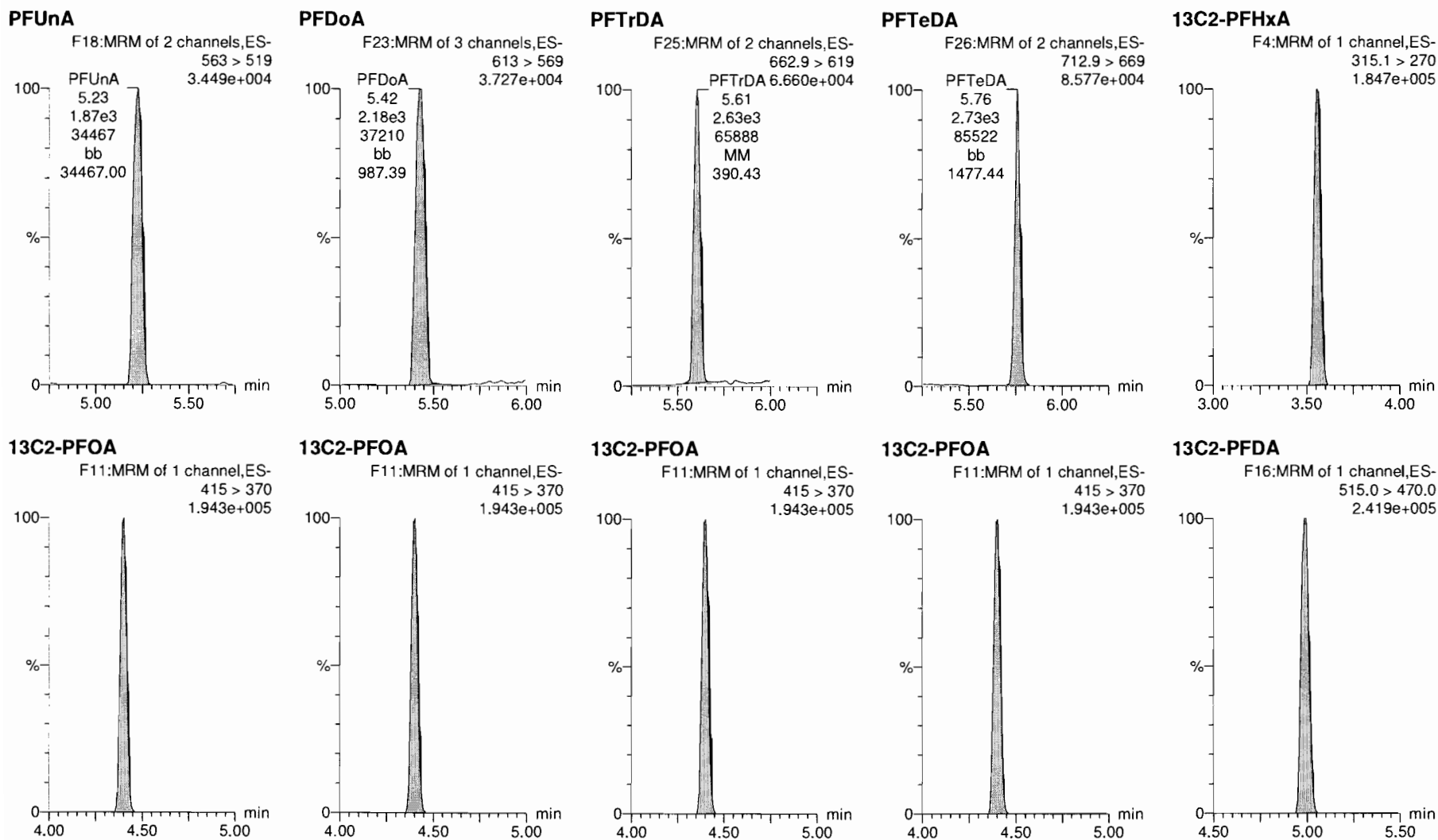




Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-2.qld

Last Altered: Monday, December 17, 2018 15:42:16 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:04 Pacific Standard Time

Name: 181217P1\_2, Date: 17-Dec-2018, Time: 15:28:13, ID: ST181217P1-1 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

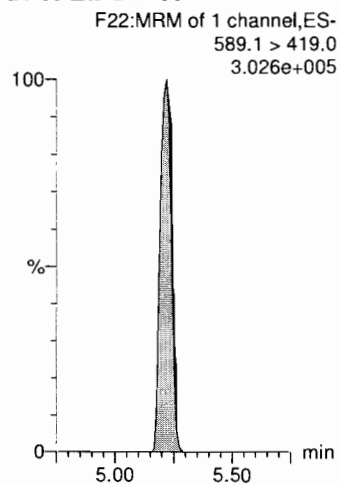


Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-2.qld

Last Altered: Monday, December 17, 2018 15:42:16 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:04 Pacific Standard Time

Name: 181217P1\_2, Date: 17-Dec-2018, Time: 15:28:13, ID: ST181217P1-1 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-29.qld

Last Altered: Tuesday, December 18, 2018 07:09:29 Pacific Standard Time

Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	910.097	3710.807	1.00		3.33	3.32	7.04	8.79	99.4
2	2 PFHxA	313.1 > 269.1	5044.401	7874.085	1.00		3.63	3.63	6.41	9.54	95.4
3	4 PFHpA	363 > 319	7295.460	7874.085	1.00		4.10	4.11	9.27	9.32	93.2
4	6 PFHxS	399 > 80.0	891.806	3710.807	1.00		4.22	4.22	6.90	7.99	87.6
5	7 PFOA	413 > 369	8109.746	7874.085	1.00		4.48	4.48	10.3	9.98	99.8
6	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
7	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
8	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
9	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
10	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
11	-1										
12	8 PFNA	463 > 419	7990.254	7874.085	1.00		4.80	4.80	10.1	9.54	95.4
13	9 PFOS	498.9 > 80.0	1057.793	3710.807	1.00		4.86	4.86	8.18	9.16	99.2
14	11 PFDA	513 > 469	8699.151	7874.085	1.00		5.07	5.07	11.0	10.9	108.6
15	12 N-MeFOSAA	570 > 419.1	3220.075	15013.431	1.00		5.18	5.18	8.58	10.5	105.2
16	13 N-EtFOSAA	584.0 > 419.1	2506.285	15013.431	1.00		5.29	5.29	6.68	9.05	90.5
17	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
18	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
19	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	15013.431	15013.431	1.00	1.000	5.20	5.18	40.0	40.0	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	15013.431	15013.431	1.00	1.000	5.20	5.18	40.0	40.0	100.0
22	-1										
23	14 PFUnA	563 > 519	8831.901	7874.085	1.00		5.30	5.29	11.2	10.3	103.5
24	16 PFDoA	613 > 569	11054.160	7874.085	1.00		5.50	5.49	14.0	9.62	96.2
25	17 PFTrDA	662.9 > 619	10977.857	7874.085	1.00		5.67	5.66	13.9	10.6	105.6
26	18 PFTeDA	712.9 > 669	11336.397	7874.085	1.00		5.82	5.82	14.4	10.4	103.6
27	19 13C2-PFHxA	315.1 > 270	7707.711	7874.085	1.00	0.942	3.63	3.63	9.79	10.4	103.9
28	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
29	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
30	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
31	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	10788.962	7874.085	1.00	1.301	5.07	5.07	13.7	10.5	105.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	16454.268	15013.431	1.00	1.070	5.29	5.29	43.8	41.0	102.4

*MJT*  
12/18/18

MJT 12/18/2018

Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-29.qld

Last Altered: Tuesday, December 18, 2018 07:09:29 Pacific Standard Time  
Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	910.097	3710.807	1.00		3.33	3.32	7.04	8.79	99.4
2	2 PFHxA	313.1 > 269.1	5044.401	7874.085	1.00		3.63	3.63	6.41	9.54	95.4
3	4 PFHpA	363 > 319	7295.460	7874.085	1.00		4.10	4.11	9.27	9.32	93.2
4	6 PFHxS	399 > 80.0	891.806	3710.807	1.00		4.22	4.22	6.90	7.99	87.6
5	7 PFOA	413 > 369	8109.746	7874.085	1.00		4.48	4.48	10.3	9.98	99.8
6	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
7	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
8	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
9	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
10	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
11	-1										
12	8 PFNA	463 > 419	7990.254	7874.085	1.00		4.80	4.80	10.1	9.54	95.4
13	9 PFOS	498.9 > 80.0	1057.793	3710.807	1.00		4.86	4.86	8.18	9.16	99.2
14	11 PFDA	513 > 469	8699.151	7874.085	1.00		5.07	5.07	11.0	10.9	108.6
15	12 N-MeFOSAA	570 > 419.1	3220.075	15013.431	1.00		5.18	5.18	8.58	10.5	105.2
16	13 N-EtFOSAA	584.0 > 419.1	2506.285	15013.431	1.00		5.29	5.29	6.68	9.05	90.5
17	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
18	24 13C4-PFOS	503.0 > 80	3710.807	3710.807	1.00	1.000	4.87	4.86	28.7	28.7	100.0
19	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	15013.431	15013.431	1.00	1.000	5.20	5.18	40.0	40.0	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	15013.431	15013.431	1.00	1.000	5.20	5.18	40.0	40.0	100.0
22	-1										
23	14 PFUnA	563 > 519	8831.901	7874.085	1.00		5.30	5.29	11.2	10.3	103.5
24	16 PFDoA	613 > 569	11054.160	7874.085	1.00		5.50	5.49	14.0	9.62	96.2
25	17 PFTTrDA	662.9 > 619	10977.857	7874.085	1.00		5.67	5.66	13.9	10.6	105.6
26	18 PFTeDA	712.9 > 669	11336.397	7874.085	1.00		5.82	5.82	14.4	10.4	103.6
27	19 13C2-PFHxA	315.1 > 270	7707.711	7874.085	1.00	0.942	3.63	3.63	9.79	10.4	103.9
28	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
29	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
30	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
31	23 13C2-PFOA	415 > 370	7874.085	7874.085	1.00	1.000	4.51	4.48	10.0	10.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	10788.962	7874.085	1.00	1.301	5.07	5.07	13.7	10.5	105.3
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	16454.268	15013.431	1.00	1.070	5.29	5.29	43.8	41.0	102.4

*MJT*  
12/18/18

Dataset: Untitled

Last Altered: Tuesday, December 18, 2018 07:16:02 Pacific Standard Time  
 Printed: Tuesday, December 18, 2018 07:16:25 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181217P1_1	IPA	17-Dec-18	15:16:52
2	2 181217P1_2	ST181217P1-1 PFC CS-1 537 18L1006	17-Dec-18	15:28:13
3	3 181217P1_3	IPA	17-Dec-18	15:57:35
4	4 181217P1_4	B8L0106-BS1 LFB 0.25	17-Dec-18	16:08:47
5	5 181217P1_5	B8L0106-BSD1 LFB 0.25	17-Dec-18	16:19:57
6	6 181217P1_6	B8L0106-BLK1 LRB 0.25	17-Dec-18	16:31:08
7	7 181217P1_7	1804036-01 WI-CV-1RW90-EFF201-121118 0.24997	17-Dec-18	16:42:19
8	8 181217P1_8	1804036-02 WI-CV-1RW90-MID202-121118 0.24972	17-Dec-18	16:53:30
9	9 181217P1_9	1804036-03 WI-CV-1RW90-MID201-121118 0.25155	17-Dec-18	17:04:41
10	10 181217P1_10	1804036-04 WI-CV-1RW90-INF201-121118 0.24833	17-Dec-18	17:15:51
11	11 181217P1_11	1804036-05 WI-CV-1RW90P-MID202-121118 0.2512	17-Dec-18	17:27:02
12	12 181217P1_12	1804036-06 WI-CV-1FB90-121118 0.25038	17-Dec-18	17:38:13
13	13 181217P1_13	B8L0115-BS1 LFB 0.25	17-Dec-18	17:49:23
14	14 181217P1_14	B8L0115-MS1 LFSM 0.24075	17-Dec-18	18:00:34
15	15 181217P1_15	B8L0115-MSD1 LFSMD 0.23834	17-Dec-18	18:11:45
16	16 181217P1_16	B8L0115-BLK1 LRB 0.25	17-Dec-18	18:22:56
17	17 181217P1_17	1804038-01 WF-RW10-1218 0.24003	17-Dec-18	18:34:07
18	18 181217P1_18	1804038-02 WF-FB10-1218 0.23544	17-Dec-18	18:45:17
19	19 181217P1_19	1804038-03 WF-RW10PP-1218 0.20175	17-Dec-18	18:56:28
20	20 181217P1_20	1804038-04 WF-RW06-1218 0.23625	17-Dec-18	19:07:38
21	21 181217P1_21	1804038-05 WF-FB06-1218 0.23467	17-Dec-18	19:18:49
22	22 181217P1_22	IPA	17-Dec-18	19:30:00
23	23 181217P1_23	B8L0076-MS1@10X LFSM 0.25052	17-Dec-18	19:41:11
24	24 181217P1_24	B8L0076-MSD1@10 XLFSMD 0.24755	17-Dec-18	19:52:22
25	25 181217P1_25	IPA	17-Dec-18	20:03:32
26	26 181217P1_26	B8L0076-MS1 LFSM 0.25052	17-Dec-18	20:14:43
27	27 181217P1_27	B8L0076-MSD1 LFSMD 0.24755	17-Dec-18	20:25:53
28	28 181217P1_28	IPA	17-Dec-18	20:37:04
29	29 181217P1_29	ST181217P1-2 PFC CS1 537 18L1008	17-Dec-18	20:48:15
30	30 181217P1_30	IPA	17-Dec-18	20:59:25
31	31 181217P1_31	B8L0085-MS1 LFSM 0.24534	17-Dec-18	21:10:36
32	32 181217P1_32	B8L0085-MSD1 LFSMD 0.25203	17-Dec-18	21:21:47

Dataset: Untitled

Last Altered: Tuesday, December 18, 2018 07:16:02 Pacific Standard Time

Printed: Tuesday, December 18, 2018 07:16:25 Pacific Standard Time

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
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34	34 181217P1_34	B8L0085-BLK1 LRB 0.25	17-Dec-18	21:44:16
35	35 181217P1_35	1803919-01 GWIN1812031440KER 0.23972	17-Dec-18	21:55:28
36	36 181217P1_36	1803954-01 GWNT1812040840KME 0.23957	17-Dec-18	22:06:38
37	37 181217P1_37	1803956-01 GWNT1812041030KME 0.25974	17-Dec-18	22:17:49
38	38 181217P1_38	1803957-01 GWNT1812041400KME 0.2509	17-Dec-18	22:29:00
39	39 181217P1_39	1803957-02 GWNT1812041410KME-FD 0.25054	17-Dec-18	22:40:11
40	40 181217P1_40	1803957-03 FB1812041415KME 0.25712	17-Dec-18	22:51:21
41	41 181217P1_41	1803958-01 GWNT1812041440KME 0.25827	17-Dec-18	23:02:40
42	42 181217P1_42	1803959-01 GWNT1812051015KME 0.25294	17-Dec-18	23:13:52
43	43 181217P1_43	1803960-01 GWNT1812051120KME 0.26071	17-Dec-18	23:25:03
44	44 181217P1_44	1803961-01 GWNT1812051305KME 0.25334	17-Dec-18	23:36:14
45	45 181217P1_45	IPA	17-Dec-18	23:47:25
46	46 181217P1_46	ST181217P1-3 PFC CS3 537 18L1010	17-Dec-18	23:58:35
47	47 181217P1_47	IPA	18-Dec-18	00:09:46
48	48 181217P1_48	1803962-01 GWEF1812051355KME 0.26061	18-Dec-18	00:20:57
49	49 181217P1_49	1803963-01 GWNT1812051530KME 0.25721	18-Dec-18	00:32:07
50	50 181217P1_50	1803994-01 GWEF1812040910KER 0.23798	18-Dec-18	00:43:18
51	51 181217P1_51	1803995-01 GWIN1812040940KER 0.23659	18-Dec-18	00:54:29
52	52 181217P1_52	1803996-01 GWEF1812041050KER 0.24126	18-Dec-18	01:05:40
53	53 181217P1_53	1803997-01 GWEF1812041120KER 0.25766	18-Dec-18	01:16:50
54	54 181217P1_54	IPA	18-Dec-18	01:28:01
55	55 181217P1_55	ST181217P1-4 PFC CS-1 537 18L1006	18-Dec-18	01:39:12
56	56 181217P1_56	IPA	18-Dec-18	01:50:22

Dataset: D:\PFAS.PRO\RESULTS\181217P1\181217P1-29.qld

Last Altered: Tuesday, December 18, 2018 07:09:29 Pacific Standard Time

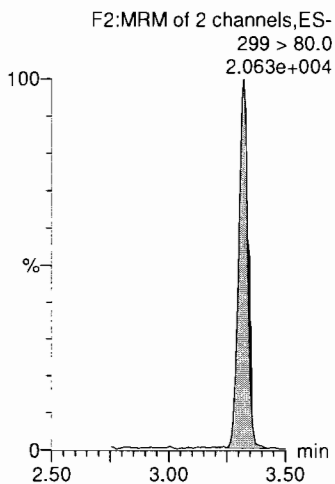
Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

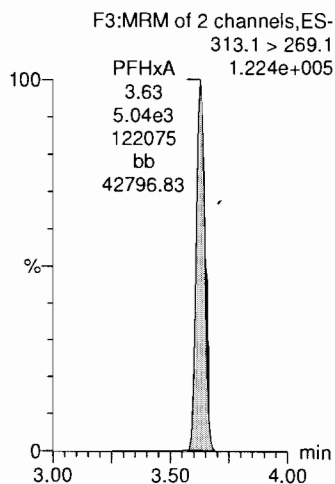
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Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

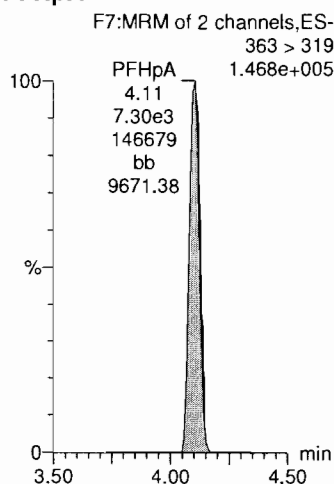
**PFBS**



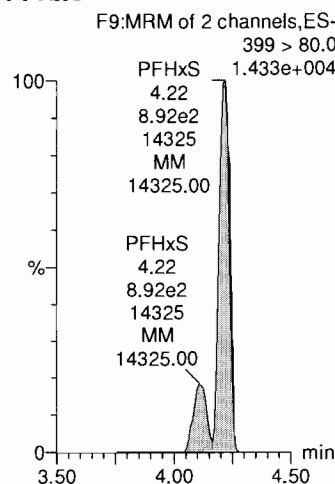
**PFHxA**



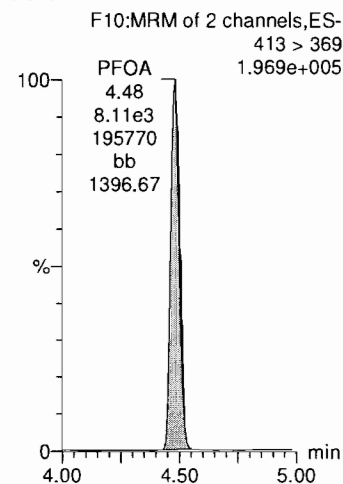
**PFHpA**



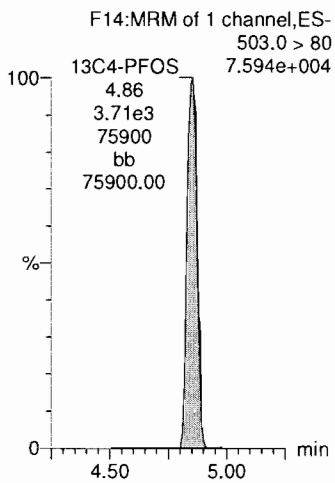
**PFHxS**



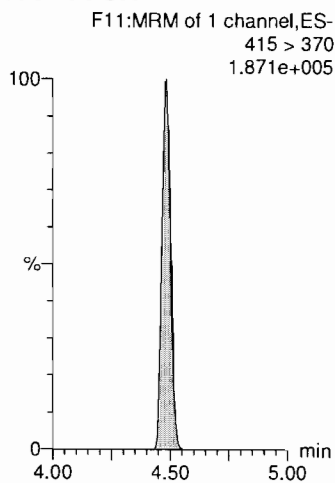
**PFOA**



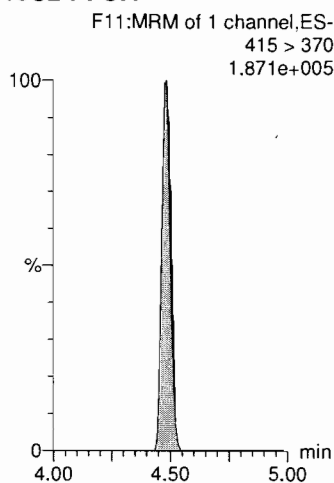
**13C4-PFOS**



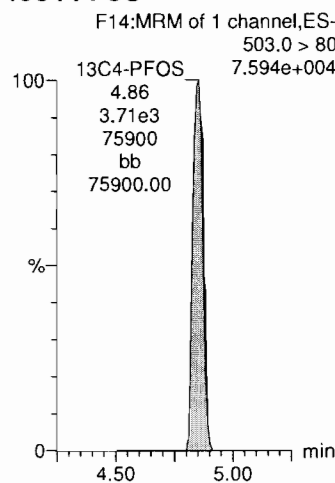
**13C2-PFOA**



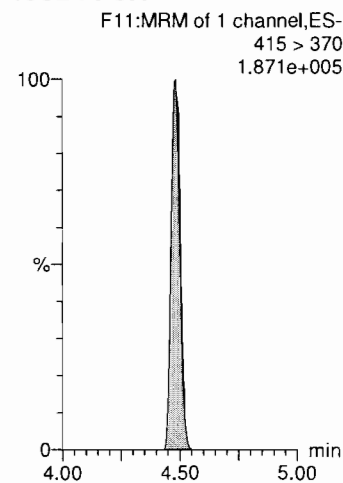
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**



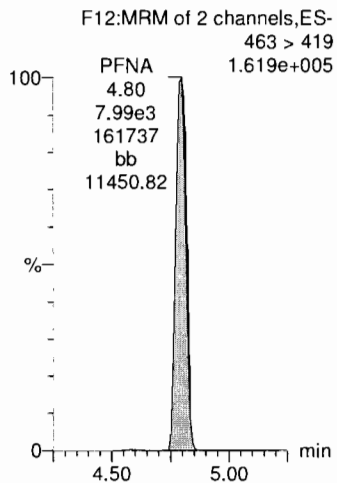
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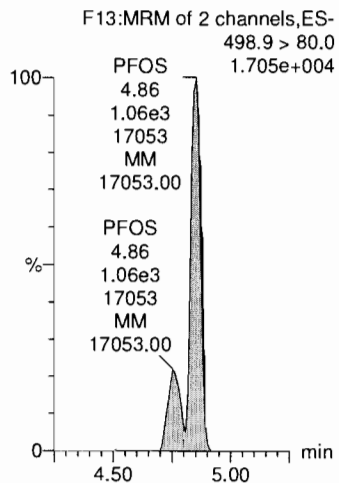
Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

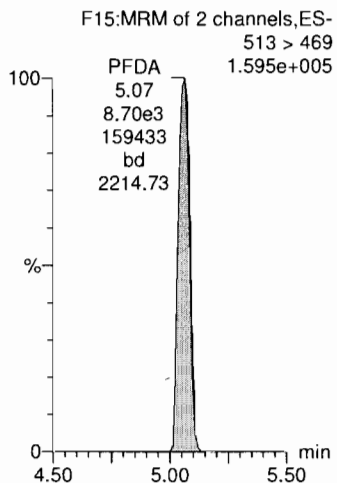
**PFNA**



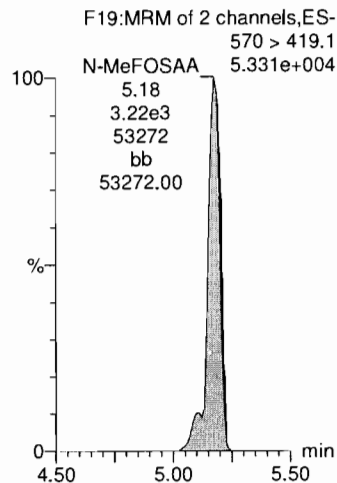
**PFOS**



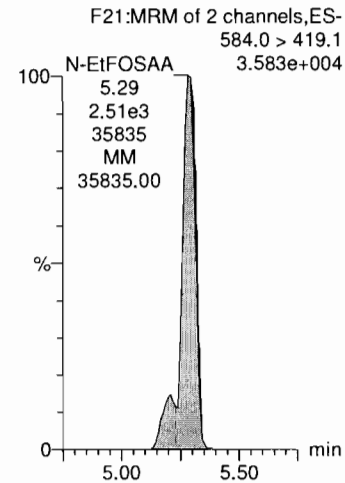
**PFDA**



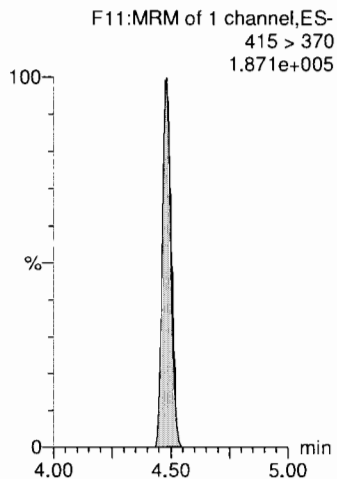
**N-MeFOSAA**



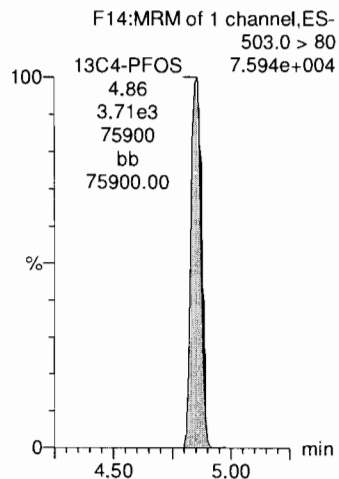
**N-EtFOSAA**



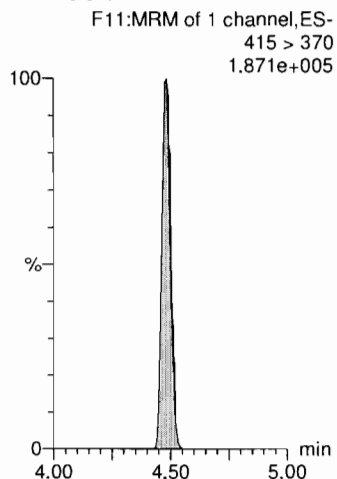
**13C2-PFOA**



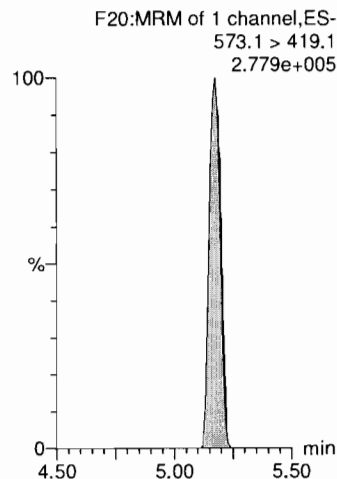
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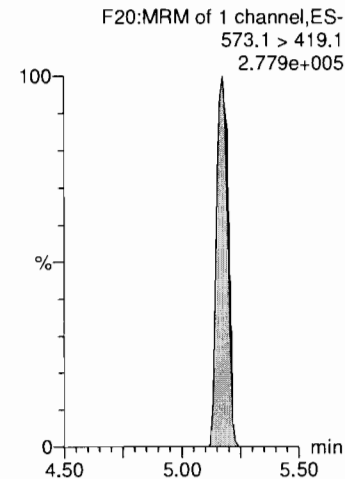
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**





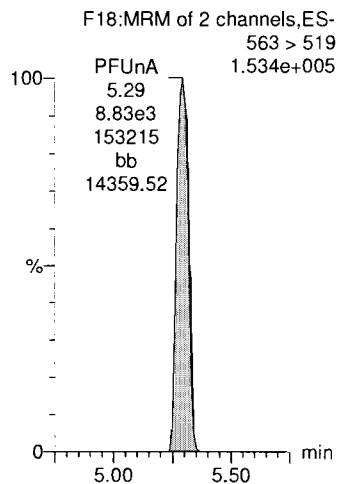
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Last Altered: Tuesday, December 18, 2018 07:09:29 Pacific Standard Time

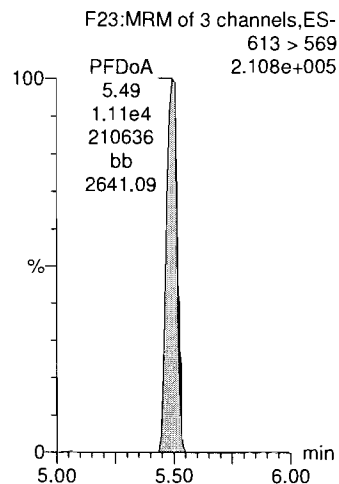
Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

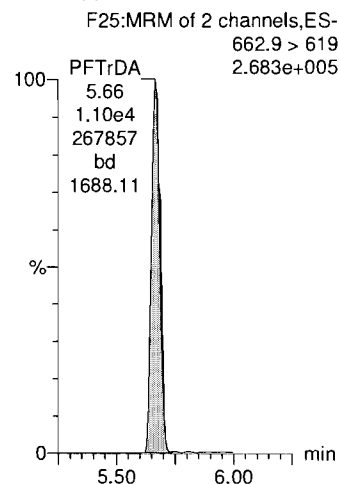
**PFUnA**



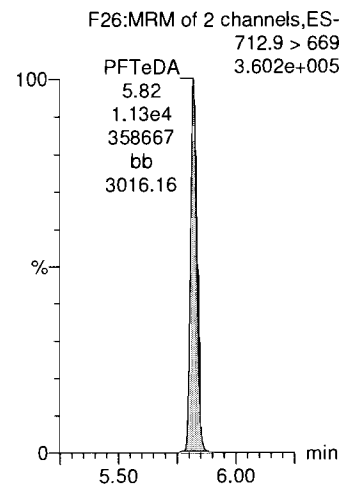
**PFDaA**



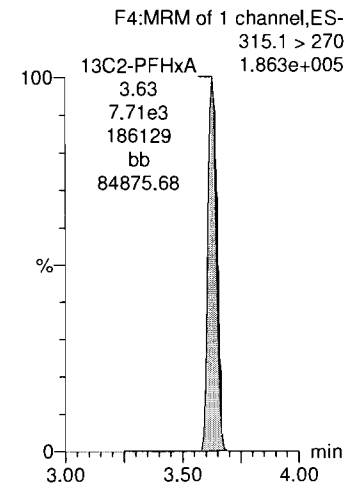
**PFTrDA**



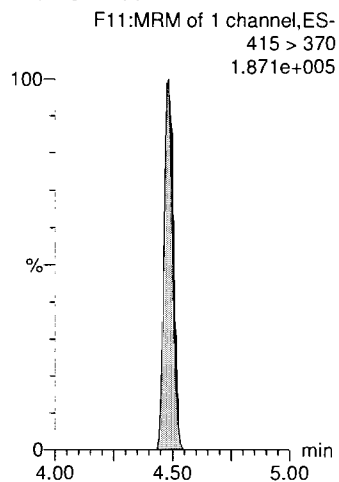
**PFTeDA**



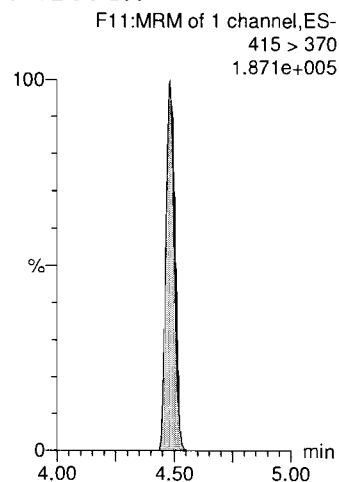
**13C2-PFHxA**



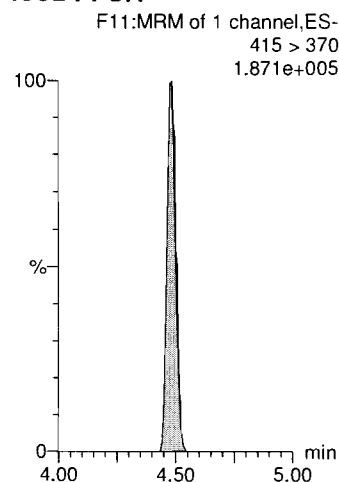
**13C2-PFOA**



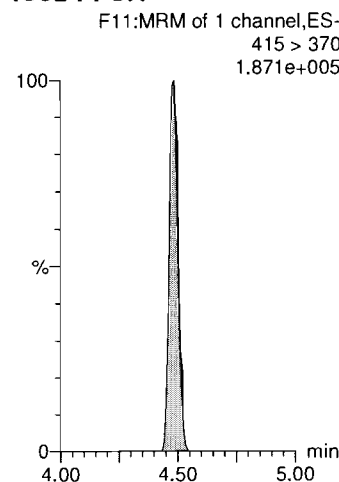
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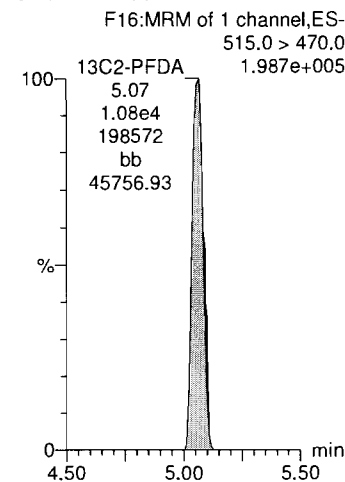
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



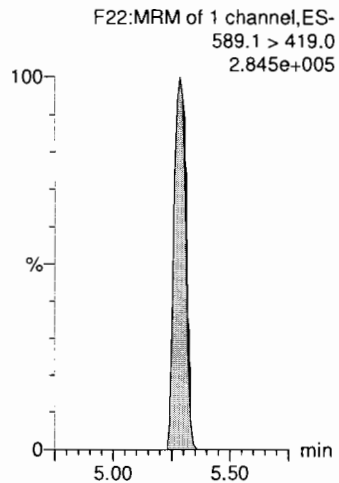
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Last Altered: Tuesday, December 18, 2018 07:09:29 Pacific Standard Time

Printed: Tuesday, December 18, 2018 07:23:59 Pacific Standard Time

Name: 181217P1\_29, Date: 17-Dec-2018, Time: 20:48:15, ID: ST181217P1-2 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

**d5-N-EtFOSAA**



**INITIAL CALIBRATION (ICAL)**  
**INCLUDING ASSOCIATED**  
**INITIAL CALIBRATION VERIFICATION (ICV)**

Vista Analytical Laboratory

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:09:37 Pacific Standard Time

low pt  
 PFBS = 0.444  
 PFHxS = 0.456  
 HFPO-DA = 0.5  
 11CI-PF3OUAS ↓  
 EtFOSAA ↓

high pt  
 HFPO-DA = 75  
 MeFOSAA ↓  
 EtFOSAA = 50

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 15 Dec 2018 10:04:32

Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

*John* 12/16/16  
 12/16/16  
 12/15/18

**Compound name: PFBS**

Coefficient of Determination: R<sup>2</sup> = 0.998244

Calibration curve: 0.767139 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.222	3.26	6.443	2634.121	0.070	0.1	-58.8	NO	0.998	NO	bbX
2	2 181214P2_3	Standard	0.444	3.36	25.840	2474.213	0.300	0.4	-12.0	NO	0.998	NO	bb
3	3 181214P2_4	Standard	0.888	3.37	52.810	2396.456	0.632	0.8	-7.2	NO	0.998	NO	bb
4	4 181214P2_5	Standard	1.780	3.37	122.853	2542.021	1.387	1.8	1.6	NO	0.998	NO	bb
5	5 181214P2_6	Standard	4.440	3.37	267.285	2446.030	3.136	4.1	-7.9	NO	0.998	NO	bb
6	6 181214P2_7	Standard	8.840	3.37	538.203	2327.423	6.637	8.7	-2.1	NO	0.998	NO	bb
7	7 181214P2_8	Standard	22.100	3.37	1406.195	2298.853	17.556	22.9	3.5	NO	0.998	NO	bb
8	8 181214P2_9	Standard	44.200	3.37	2848.181	2279.042	35.867	46.8	5.8	NO	0.998	NO	bb
9	9 181214P2_10	Standard	66.400	3.37	4293.443	2383.921	51.689	67.4	1.5	NO	0.998	NO	bb
10	10 181214P2_11	Standard	88.500	3.37	5662.135	2497.646	65.063	84.8	-4.2	NO	0.998	NO	bb

**Compound name: PFHxA**

Coefficient of Determination: R<sup>2</sup> = 0.998719

Calibration curve: 0.575411 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	3.60	90.776	5911.953	0.154	0.3	6.7	NO	0.999	NO	bb
2	2 181214P2_3	Standard	0.500	3.66	160.247	5684.619	0.282	0.5	-2.0	NO	0.999	NO	bb
3	3 181214P2_4	Standard	1.000	3.67	318.927	5210.434	0.612	1.1	6.4	NO	0.999	NO	MM
4	4 181214P2_5	Standard	2.000	3.67	624.993	5665.122	1.103	1.9	-4.1	NO	0.999	NO	MM
5	5 181214P2_6	Standard	5.000	3.68	1577.167	5615.395	2.809	4.9	-2.4	NO	0.999	NO	bb
6	6 181214P2_7	Standard	10.000	3.68	3223.547	5543.850	5.815	10.1	1.1	NO	0.999	NO	MM
7	7 181214P2_8	Standard	25.000	3.68	7651.477	5688.920	13.450	23.4	-6.5	NO	0.999	NO	db
8	8 181214P2_9	Standard	50.000	3.68	16404.814	5370.965	30.544	53.1	6.2	NO	0.999	NO	db
9	9 181214P2_10	Standard	75.000	3.68	23827.469	5522.653	43.145	75.0	-0.0	NO	0.999	NO	db
10	10 181214P2_11	Standard	100.000	3.68	31984.234	5638.047	56.729	98.6	-1.4	NO	0.999	NO	db

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**Compound name: HFPO-DA**

Coefficient of Determination:  $R^2 = 0.997247$

Calibration curve:  $0.000119042 * x^2 + 0.0699276 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	3.75	11.636	5911.953	0.020	0.3	12.5	NO	0.997	NO	bbX
2	2 181214P2_3	Standard	0.500	3.82	10.201	5684.619	0.018	0.3	-48.7	NO	0.997	NO	MM
3	3 181214P2_4	Standard	1.000	3.82	43.826	5210.434	0.084	1.2	20.0	NO	0.997	NO	MM
4	4 181214P2_5	Standard	2.000	3.83	74.579	5665.122	0.132	1.9	-6.2	NO	0.997	NO	MM
5	5 181214P2_6	Standard	5.000	3.84	193.973	5615.395	0.345	4.9	-2.0	NO	0.997	NO	db
6	6 181214P2_7	Standard	10.000	3.83	355.012	5543.850	0.640	9.0	-9.8	NO	0.997	NO	bb
7	7 181214P2_8	Standard	25.000	3.83	1044.201	5688.920	1.835	25.2	0.7	NO	0.997	NO	bb
8	8 181214P2_9	Standard	50.000	3.84	2152.100	5370.965	4.007	52.6	5.2	NO	0.997	NO	bb
9	9 181214P2_10	Standard	75.000	3.84	3190.989	5522.653	5.778	73.4	-2.1	NO	0.997	NO	bb
10	10 181214P2_11	Standard	100.000	3.84	4369.620	5638.047	7.750	95.4	-4.6	NO	0.997	NO	bbX

**Compound name: PFHpA**

Coefficient of Determination:  $R^2 = 0.999597$

Calibration curve:  $0.922271 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	4.07	122.898	5911.953	0.208	0.2	-9.8	NO	1.000	NO	MM
2	2 181214P2_3	Standard	0.500	4.14	277.782	5684.619	0.489	0.5	6.0	NO	1.000	NO	MM
3	3 181214P2_4	Standard	1.000	4.15	485.594	5210.434	0.932	1.0	1.1	NO	1.000	NO	dd
4	4 181214P2_5	Standard	2.000	4.15	988.323	5665.122	1.745	1.9	-5.4	NO	1.000	NO	bb
5	5 181214P2_6	Standard	5.000	4.15	2513.194	5615.395	4.476	4.9	-2.9	NO	1.000	NO	bb
6	6 181214P2_7	Standard	10.000	4.15	5141.384	5543.850	9.274	10.1	0.6	NO	1.000	NO	bb
7	7 181214P2_8	Standard	25.000	4.15	12708.967	5688.920	22.340	24.2	-3.1	NO	1.000	NO	bb
8	8 181214P2_9	Standard	50.000	4.15	25434.871	5370.965	47.356	51.3	2.7	NO	1.000	NO	bb
9	9 181214P2_10	Standard	75.000	4.15	38665.340	5522.653	70.012	75.9	1.2	NO	1.000	NO	bb
10	10 181214P2_11	Standard	100.000	4.15	51322.801	5638.047	91.029	98.7	-1.3	NO	1.000	NO	bb

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**Compound name: ADONA**

Coefficient of Determination: R<sup>2</sup> = 0.998350

Calibration curve: 1.22899 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	4.14	157.370	5911.953	0.266	0.2	-13.4	NO	0.998	NO	bb
2	2 181214P2_3	Standard	0.500	4.21	299.667	5684.619	0.527	0.4	-14.2	NO	0.998	NO	bb
3	3 181214P2_4	Standard	1.000	4.22	594.901	5210.434	1.142	0.9	-7.1	NO	0.998	NO	bb
4	4 181214P2_5	Standard	2.000	4.22	1285.666	5665.122	2.269	1.8	-7.7	NO	0.998	NO	bb
5	5 181214P2_6	Standard	5.000	4.22	3199.815	5615.395	5.698	4.6	-7.3	NO	0.998	NO	bb
6	6 181214P2_7	Standard	10.000	4.22	6069.438	5543.850	10.948	8.9	-10.9	NO	0.998	NO	bb
7	7 181214P2_8	Standard	25.000	4.22	16174.046	5688.920	28.431	23.1	-7.5	NO	0.998	NO	bb
8	8 181214P2_9	Standard	50.000	4.22	34455.465	5370.965	64.151	52.2	4.4	NO	0.998	NO	bb
9	9 181214P2_10	Standard	75.000	4.22	51207.465	5522.653	92.723	75.4	0.6	NO	0.998	NO	bb
10	10 181214P2_11	Standard	100.000	4.22	69988.617	5638.047	124.136	101.0	1.0	NO	0.998	NO	bb

**Compound name: PFHxS**

Coefficient of Determination: R<sup>2</sup> = 0.997577

Calibration curve: -0.00045622 \* x<sup>2</sup> + 0.918218 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.228	4.18	9.538	2634.121	0.104	0.1	-50.4	NO	0.998	NO	MMX
2	2 181214P2_3	Standard	0.456	4.25	23.536	2474.213	0.273	0.3	-34.8	NO	0.998	NO	MM
3	3 181214P2_4	Standard	0.912	4.26	57.522	2396.456	0.689	0.8	-17.7	NO	0.998	NO	MM
4	4 181214P2_5	Standard	1.820	4.26	148.070	2542.021	1.672	1.8	0.1	NO	0.998	NO	MM
5	5 181214P2_6	Standard	4.560	4.26	356.543	2446.030	4.183	4.6	0.1	NO	0.998	NO	MM
6	6 181214P2_7	Standard	9.120	4.26	632.412	2327.423	7.798	8.5	-6.5	NO	0.998	NO	MM
7	7 181214P2_8	Standard	22.800	4.26	1563.028	2298.853	19.514	21.5	-5.8	NO	0.998	NO	MM
8	8 181214P2_9	Standard	45.500	4.26	3513.474	2279.042	44.245	49.4	8.6	NO	0.998	NO	MM
9	9 181214P2_10	Standard	68.200	4.26	5008.888	2383.921	60.302	68.0	-0.3	NO	0.998	NO	MM
10	10 181214P2_11	Standard	91.000	4.26	6838.147	2497.646	78.576	89.6	-1.6	NO	0.998	NO	MM

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**Compound name: PFOA**

Coefficient of Determination: R<sup>2</sup> = 0.998672

Calibration curve: 0.920346 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	4.46	128.370	5911.953	0.217	0.2	-5.6	NO	0.999	NO	MM
2	2 181214P2_3	Standard	0.500	4.51	287.768	5684.619	0.506	0.6	10.0	NO	0.999	NO	bb
3	3 181214P2_4	Standard	1.000	4.52	498.427	5210.434	0.957	1.0	3.9	NO	0.999	NO	MM
4	4 181214P2_5	Standard	2.000	4.53	980.002	5665.122	1.730	1.9	-6.0	NO	0.999	NO	MM
5	5 181214P2_6	Standard	5.000	4.53	2577.429	5615.395	4.590	5.0	-0.3	NO	0.999	NO	MM
6	6 181214P2_7	Standard	10.000	4.53	5319.550	5543.850	9.595	10.4	4.3	NO	0.999	NO	bb
7	7 181214P2_8	Standard	25.000	4.53	12394.828	5688.920	21.788	23.7	-5.3	NO	0.999	NO	bb
8	8 181214P2_9	Standard	50.000	4.53	26199.643	5370.965	48.780	53.0	6.0	NO	0.999	NO	bb
9	9 181214P2_10	Standard	75.000	4.53	38280.910	5522.653	69.316	75.3	0.4	NO	0.999	NO	bb
10	10 181214P2_11	Standard	100.000	4.53	50665.680	5638.047	89.864	97.6	-2.4	NO	0.999	NO	bb

**Compound name: PFNA**

Coefficient of Determination: R<sup>2</sup> = 0.998301

Calibration curve: 0.837534 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	4.77	124.612	5911.953	0.211	0.3	0.7	NO	0.998	NO	bb
2	2 181214P2_3	Standard	0.500	4.83	257.785	5684.619	0.453	0.5	8.3	NO	0.998	NO	MM
3	3 181214P2_4	Standard	1.000	4.84	455.353	5210.434	0.874	1.0	4.3	NO	0.998	NO	MM
4	4 181214P2_5	Standard	2.000	4.84	955.493	5665.122	1.687	2.0	0.7	NO	0.998	NO	bb
5	5 181214P2_6	Standard	5.000	4.84	2348.357	5615.395	4.182	5.0	-0.1	NO	0.998	NO	bb
6	6 181214P2_7	Standard	10.000	4.84	4534.447	5543.850	8.179	9.8	-2.3	NO	0.998	NO	bd
7	7 181214P2_8	Standard	25.000	4.84	12012.312	5688.920	21.115	25.2	0.8	NO	0.998	NO	bb
8	8 181214P2_9	Standard	50.000	4.84	24217.967	5370.965	45.091	53.8	7.7	NO	0.998	NO	bb
9	9 181214P2_10	Standard	75.000	4.84	33305.348	5522.653	60.307	72.0	-4.0	NO	0.998	NO	bb
10	10 181214P2_11	Standard	100.000	4.84	46789.332	5638.047	82.989	99.1	-0.9	NO	0.998	NO	bb

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**Compound name: PFOS**

Coefficient of Determination: R<sup>2</sup> = 0.997446

Calibration curve: 0.899774 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.232	4.82	18.253	2634.121	0.199	0.2	-4.7	NO	0.997	NO	MM
2	2 181214P2_3	Standard	0.464	4.88	28.338	2474.213	0.329	0.4	-21.3	NO	0.997	NO	MM
3	3 181214P2_4	Standard	0.928	4.89	60.894	2396.456	0.729	0.8	-12.7	NO	0.997	NO	MM
4	4 181214P2_5	Standard	1.860	4.89	113.235	2542.021	1.278	1.4	-23.6	NO	0.997	NO	MM
5	5 181214P2_6	Standard	4.640	4.89	319.255	2446.030	3.746	4.2	-10.3	NO	0.997	NO	MM
6	6 181214P2_7	Standard	9.240	4.89	591.770	2327.423	7.297	8.1	-12.2	NO	0.997	NO	MM
7	7 181214P2_8	Standard	23.100	4.89	1737.960	2298.853	21.698	24.1	4.4	NO	0.997	NO	MM
8	8 181214P2_9	Standard	46.200	4.89	3467.155	2279.042	43.662	48.5	5.0	NO	0.997	NO	MM
9	9 181214P2_10	Standard	69.400	4.89	5312.224	2383.921	63.954	71.1	2.4	NO	0.997	NO	MM
10	10 181214P2_11	Standard	92.500	4.89	7028.194	2497.646	80.760	89.8	-3.0	NO	0.997	NO	MM

**Compound name: 9CI-PF3ONS**

Coefficient of Determination: R<sup>2</sup> = 0.994100

Calibration curve: 3.18847 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	4.99	52.232	2634.121	0.569	0.2	-28.6	NO	0.994	NO	MM
2	2 181214P2_3	Standard	0.500	5.04	164.403	2474.213	1.907	0.6	19.6	NO	0.994	NO	MM
3	3 181214P2_4	Standard	1.000	5.04	189.020	2396.456	2.264	0.7	-29.0	NO	0.994	NO	bb
4	4 181214P2_5	Standard	2.000	5.05	507.367	2542.021	5.728	1.8	-10.2	NO	0.994	NO	bb
5	5 181214P2_6	Standard	5.000	5.04	1214.050	2446.030	14.245	4.5	-10.6	NO	0.994	NO	bb
6	6 181214P2_7	Standard	10.000	5.05	2531.741	2327.423	31.219	9.8	-2.1	NO	0.994	NO	bb
7	7 181214P2_8	Standard	25.000	5.05	6184.165	2298.853	77.206	24.2	-3.1	NO	0.994	NO	bb
8	8 181214P2_9	Standard	50.000	5.05	14346.701	2279.042	180.668	56.7	13.3	NO	0.994	NO	bb
9	9 181214P2_10	Standard	75.000	5.05	20258.875	2383.921	243.896	76.5	2.0	NO	0.994	NO	bb
10	10 181214P2_11	Standard	100.000	5.05	26037.963	2497.646	299.198	93.8	-6.2	NO	0.994	NO	bb



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**Compound name: PFDA**

Coefficient of Determination: R<sup>2</sup> = 0.999015

Calibration curve: -0.000221295 \* x<sup>2</sup> + 0.834247 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.03	133.461	5911.953	0.226	0.3	8.2	NO	0.999	NO	bb
2	2 181214P2_3	Standard	0.500	5.09	202.627	5684.619	0.356	0.4	-14.5	NO	0.999	NO	MM
3	3 181214P2_4	Standard	1.000	5.10	413.064	5210.434	0.793	1.0	-4.9	NO	0.999	NO	MM
4	4 181214P2_5	Standard	2.000	5.10	945.822	5665.122	1.670	2.0	0.1	NO	0.999	NO	MM
5	5 181214P2_6	Standard	5.000	5.10	2257.921	5615.395	4.021	4.8	-3.5	NO	0.999	NO	bb
6	6 181214P2_7	Standard	10.000	5.10	4595.763	5543.850	8.290	10.0	-0.4	NO	0.999	NO	bb
7	7 181214P2_8	Standard	25.000	5.10	11219.362	5688.920	19.721	23.8	-4.8	NO	0.999	NO	bb
8	8 181214P2_9	Standard	50.000	5.10	23351.916	5370.965	43.478	52.9	5.7	NO	0.999	NO	bb
9	9 181214P2_10	Standard	75.000	5.10	33502.344	5522.653	60.663	74.2	-1.1	NO	0.999	NO	bb
10	10 181214P2_11	Standard	100.000	5.10	45559.660	5638.047	80.808	99.5	-0.5	NO	0.999	NO	bb

**Compound name: N-MeFOSAA**

Coefficient of Determination: R<sup>2</sup> = 0.997830

Calibration curve: -0.00072913 \* x<sup>2</sup> + 0.914639 \* x

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.15	51.683	10104.299	0.205	0.2	-10.5	NO	0.998	NO	MM
2	2 181214P2_3	Standard	0.500	5.21	119.036	9958.873	0.478	0.5	4.6	NO	0.998	NO	MM
3	3 181214P2_4	Standard	1.000	5.22	276.359	9410.290	1.175	1.3	28.6	NO	0.998	NO	bb
4	4 181214P2_5	Standard	2.000	5.22	465.441	10550.824	1.765	1.9	-3.4	NO	0.998	NO	bb
5	5 181214P2_6	Standard	5.000	5.22	1022.705	10229.688	3.999	4.4	-12.2	NO	0.998	NO	bb
6	6 181214P2_7	Standard	10.000	5.22	2521.621	10503.686	9.603	10.6	5.9	NO	0.998	NO	bb
7	7 181214P2_8	Standard	25.000	5.22	5475.294	10232.063	21.404	23.9	-4.6	NO	0.998	NO	MM
8	8 181214P2_9	Standard	50.000	5.22	10963.122	9633.877	45.519	51.9	3.8	NO	0.998	NO	bb
9	9 181214P2_10	Standard	75.000	5.22	15749.637	9886.291	63.723	74.0	-1.3	NO	0.998	NO	bb
10	10 181214P2_11	Standard	100.000	5.22	22217.422	10227.562	86.892	103.5	3.5	NO	0.998	NO	MMX

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**Compound name: N-EtFOSAA**

Coefficient of Determination: R<sup>2</sup> = 0.998450

Calibration curve: 0.00236696 \* x<sup>2</sup> + 0.536971 \* x

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.27	31.485	10104.299	0.125	0.2	-7.2	NO	0.998	NO	MMX
2	2 181214P2_3	Standard	0.500	5.32	46.911	9958.873	0.188	0.4	-29.9	NO	0.998	NO	bb
3	3 181214P2_4	Standard	1.000	5.33	95.547	9410.290	0.406	0.8	-24.6	NO	0.998	NO	MM
4	4 181214P2_5	Standard	2.000	5.33	330.637	10550.824	1.254	2.3	15.5	NO	0.998	NO	MM
5	5 181214P2_6	Standard	5.000	5.33	721.496	10229.688	2.821	5.1	2.8	NO	0.998	NO	bb
6	6 181214P2_7	Standard	10.000	5.33	1503.421	10503.686	5.725	10.2	2.0	NO	0.998	NO	MM
7	7 181214P2_8	Standard	25.000	5.33	3752.278	10232.063	14.669	24.6	-1.4	NO	0.998	NO	MM
8	8 181214P2_9	Standard	50.000	5.33	7911.481	9633.877	32.849	50.1	0.2	NO	0.998	NO	bb
9	9 181214P2_10	Standard	75.000	5.33	11600.585	9886.291	46.936	67.4	-10.1	NO	0.998	NO	MMX
10	10 181214P2_11	Standard	100.000	5.33	15229.918	10227.562	59.564	81.6	-18.4	NO	0.998	NO	bbX

**Compound name: PFUnA**

Coefficient of Determination: R<sup>2</sup> = 0.998136

Calibration curve: 0.864966 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.27	101.152	5911.953	0.171	0.2	-20.9	NO	0.998	NO	MM
2	2 181214P2_3	Standard	0.500	5.32	187.575	5684.619	0.330	0.4	-23.7	NO	0.998	NO	MM
3	3 181214P2_4	Standard	1.000	5.33	503.071	5210.434	0.966	1.1	11.6	NO	0.998	NO	bb
4	4 181214P2_5	Standard	2.000	5.33	887.824	5665.122	1.567	1.8	-9.4	NO	0.998	NO	bb
5	5 181214P2_6	Standard	5.000	5.33	1848.491	5615.395	3.292	3.8	-23.9	NO	0.998	NO	bb
6	6 181214P2_7	Standard	10.000	5.33	5013.787	5543.850	9.044	10.5	4.6	NO	0.998	NO	bb
7	7 181214P2_8	Standard	25.000	5.33	12150.262	5688.920	21.358	24.7	-1.2	NO	0.998	NO	bb
8	8 181214P2_9	Standard	50.000	5.33	24215.092	5370.965	45.085	52.1	4.2	NO	0.998	NO	bb
9	9 181214P2_10	Standard	75.000	5.33	35398.992	5522.653	64.098	74.1	-1.2	NO	0.998	NO	bb
10	10 181214P2_11	Standard	100.000	5.33	48797.020	5638.047	86.550	100.1	0.1	NO	0.998	NO	bb

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**Compound name: 11CI-PF3OUdS**

Coefficient of Determination: R<sup>2</sup> = 0.997306

Calibration curve: 2.63344 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.41	34.987	2634.121	0.381	0.1	-42.1	NO	0.997	NO	bbX
2	2 181214P2_3	Standard	0.500	5.45	71.915	2474.213	0.834	0.3	-36.6	NO	0.997	NO	bb
3	3 181214P2_4	Standard	1.000	5.47	163.433	2396.456	1.957	0.7	-25.7	NO	0.997	NO	bb
4	4 181214P2_5	Standard	2.000	5.47	391.956	2542.021	4.425	1.7	-16.0	NO	0.997	NO	bb
5	5 181214P2_6	Standard	5.000	5.47	1120.639	2446.030	13.149	5.0	-0.1	NO	0.997	NO	bb
6	6 181214P2_7	Standard	10.000	5.47	2200.085	2327.423	27.130	10.3	3.0	NO	0.997	NO	bb
7	7 181214P2_8	Standard	25.000	5.47	5085.521	2298.853	63.490	24.1	-3.6	NO	0.997	NO	bb
8	8 181214P2_9	Standard	50.000	5.47	11261.545	2279.042	141.817	53.9	7.7	NO	0.997	NO	bb
9	9 181214P2_10	Standard	75.000	5.47	16668.299	2383.921	200.669	76.2	1.6	NO	0.997	NO	bb
10	10 181214P2_11	Standard	100.000	5.47	22070.332	2497.646	253.606	96.3	-3.7	NO	0.997	NO	bb

**Compound name: PFDoA**

Coefficient of Determination: R<sup>2</sup> = 0.998508

Calibration curve: 1.2306 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.47	161.624	5911.953	0.273	0.2	-11.1	NO	0.999	NO	MM
2	2 181214P2_3	Standard	0.500	5.52	287.652	5684.619	0.506	0.4	-17.8	NO	0.999	NO	MM
3	3 181214P2_4	Standard	1.000	5.52	660.225	5210.434	1.267	1.0	3.0	NO	0.999	NO	bb
4	4 181214P2_5	Standard	2.000	5.53	1264.859	5665.122	2.233	1.8	-9.3	NO	0.999	NO	bb
5	5 181214P2_6	Standard	5.000	5.53	3538.267	5615.395	6.301	5.1	2.4	NO	0.999	NO	bb
6	6 181214P2_7	Standard	10.000	5.53	7084.208	5543.850	12.778	10.4	3.8	NO	0.999	NO	bb
7	7 181214P2_8	Standard	25.000	5.53	16702.564	5688.920	29.360	23.9	-4.6	NO	0.999	NO	bb
8	8 181214P2_9	Standard	50.000	5.53	35057.152	5370.965	65.272	53.0	6.1	NO	0.999	NO	bb
9	9 181214P2_10	Standard	75.000	5.53	51495.164	5522.653	93.244	75.8	1.0	NO	0.999	NO	bb
10	10 181214P2_11	Standard	100.000	5.53	67369.273	5638.047	119.490	97.1	-2.9	NO	0.999	NO	bb

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**Compound name: PFTrDA**

Coefficient of Determination: R<sup>2</sup> = 0.999286

Calibration curve: 1.32773 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.64	167.964	5911.953	0.284	0.2	-14.4	NO	0.999	NO	MM
2	2 181214P2_3	Standard	0.500	5.69	349.247	5684.619	0.614	0.5	-7.5	NO	0.999	NO	bb
3	3 181214P2_4	Standard	1.000	5.69	718.692	5210.434	1.379	1.0	3.9	NO	0.999	NO	bb
4	4 181214P2_5	Standard	2.000	5.69	1465.232	5665.122	2.586	1.9	-2.6	NO	0.999	NO	bb
5	5 181214P2_6	Standard	5.000	5.69	3634.396	5615.395	6.472	4.9	-2.5	NO	0.999	NO	bb
6	6 181214P2_7	Standard	10.000	5.69	7084.438	5543.850	12.779	9.6	-3.8	NO	0.999	NO	bb
7	7 181214P2_8	Standard	25.000	5.69	18181.461	5688.920	31.959	24.1	-3.7	NO	0.999	NO	bb
8	8 181214P2_9	Standard	50.000	5.69	37349.246	5370.965	69.539	52.4	4.7	NO	0.999	NO	bb
9	9 181214P2_10	Standard	75.000	5.69	54422.832	5522.653	98.545	74.2	-1.0	NO	0.999	NO	bb
10	10 181214P2_11	Standard	100.000	5.69	74799.367	5638.047	132.669	99.9	-0.1	NO	0.999	NO	bb

**Compound name: PFTeDA**

Coefficient of Determination: R<sup>2</sup> = 0.999100

Calibration curve: 1.32618 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	0.250	5.80	176.513	5911.953	0.299	0.2	-9.9	NO	0.999	NO	MM
2	2 181214P2_3	Standard	0.500	5.84	362.578	5684.619	0.638	0.5	-3.8	NO	0.999	NO	bb
3	3 181214P2_4	Standard	1.000	5.84	718.779	5210.434	1.379	1.0	4.0	NO	0.999	NO	MM
4	4 181214P2_5	Standard	2.000	5.85	1550.707	5665.122	2.737	2.1	3.2	NO	0.999	NO	bb
5	5 181214P2_6	Standard	5.000	5.85	3837.176	5615.395	6.833	5.2	3.1	NO	0.999	NO	bb
6	6 181214P2_7	Standard	10.000	5.85	7596.571	5543.850	13.703	10.3	3.3	NO	0.999	NO	bb
7	7 181214P2_8	Standard	25.000	5.85	18243.668	5688.920	32.069	24.2	-3.3	NO	0.999	NO	bb
8	8 181214P2_9	Standard	50.000	5.85	37500.074	5370.965	69.820	52.6	5.3	NO	0.999	NO	bb
9	9 181214P2_10	Standard	75.000	5.85	54635.441	5522.653	98.930	74.6	-0.5	NO	0.999	NO	bb
10	10 181214P2_11	Standard	100.000	5.85	73296.703	5638.047	130.004	98.0	-2.0	NO	0.999	NO	bb

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**Compound name: 13C2-PFHxA**

Response Factor: 0.758593

RRF SD: 0.0249004, Relative SD: 3.28244

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	10.000	3.60	4292.634	5911.953	7.261	9.6	-4.3	NO		NO	bb
2	2 181214P2_3	Standard	10.000	3.67	4330.092	5684.619	7.617	10.0	0.4	NO		NO	bb
3	3 181214P2_4	Standard	10.000	3.67	4079.294	5210.434	7.829	10.3	3.2	NO		NO	bb
4	4 181214P2_5	Standard	10.000	3.67	4315.544	5665.122	7.618	10.0	0.4	NO		NO	bb
5	5 181214P2_6	Standard	10.000	3.67	4217.649	5615.395	7.511	9.9	-1.0	NO		NO	bb
6	6 181214P2_7	Standard	10.000	3.68	4298.911	5543.850	7.754	10.2	2.2	NO		NO	bb
7	7 181214P2_8	Standard	10.000	3.68	4025.341	5688.920	7.076	9.3	-6.7	NO		NO	bb
8	8 181214P2_9	Standard	10.000	3.68	4216.067	5370.965	7.850	10.3	3.5	NO		NO	bb
9	9 181214P2_10	Standard	10.000	3.68	4192.938	5522.653	7.592	10.0	0.1	NO		NO	bb
10	10 181214P2_11	Standard	10.000	3.68	4370.258	5638.047	7.751	10.2	2.2	NO		NO	bb

**Compound name: 13C3-HFPO-DA**

Response Factor: 0.0702697

RRF SD: 0.00366149, Relative SD: 5.21063

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	10.000	3.74	400.534	5911.953	0.677	9.6	-3.6	NO		NO	bb
2	2 181214P2_3	Standard	10.000	3.82	397.367	5684.619	0.699	9.9	-0.5	NO		NO	bb
3	3 181214P2_4	Standard	10.000	3.83	362.333	5210.434	0.695	9.9	-1.0	NO		NO	bb
4	4 181214P2_5	Standard	10.000	3.83	397.190	5665.122	0.701	10.0	-0.2	NO		NO	bb
5	5 181214P2_6	Standard	10.000	3.84	391.777	5615.395	0.698	9.9	-0.7	NO		NO	bb
6	6 181214P2_7	Standard	10.000	3.83	375.052	5543.850	0.677	9.6	-3.7	NO		NO	bb
7	7 181214P2_8	Standard	10.000	3.83	375.220	5688.920	0.660	9.4	-6.1	NO		NO	bb
8	8 181214P2_9	Standard	10.000	3.83	404.162	5370.965	0.752	10.7	7.1	NO		NO	bb
9	9 181214P2_10	Standard	10.000	3.83	431.092	5522.653	0.781	11.1	11.1	NO		NO	bb
10	10 181214P2_11	Standard	10.000	3.84	387.381	5638.047	0.687	9.8	-2.2	NO		NO	bb

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**Compound name: 13C2-PFDA**

Response Factor: 1.05163

RRF SD: 0.0358783, Relative SD: 3.4117

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	10.000	5.03	5769.443	5911.953	9.759	9.3	-7.2	NO		NO	bb
2	2 181214P2_3	Standard	10.000	5.09	5767.434	5684.619	10.146	9.6	-3.5	NO		NO	bb
3	3 181214P2_4	Standard	10.000	5.10	5619.726	5210.434	10.786	10.3	2.6	NO		NO	bb
4	4 181214P2_5	Standard	10.000	5.10	6070.341	5665.122	10.715	10.2	1.9	NO		NO	bb
5	5 181214P2_6	Standard	10.000	5.10	5927.881	5615.395	10.556	10.0	0.4	NO		NO	bb
6	6 181214P2_7	Standard	10.000	5.10	5683.124	5543.850	10.251	9.7	-2.5	NO		NO	bb
7	7 181214P2_8	Standard	10.000	5.10	6042.317	5688.920	10.621	10.1	1.0	NO		NO	bb
8	8 181214P2_9	Standard	10.000	5.10	5856.635	5370.965	10.904	10.4	3.7	NO		NO	bb
9	9 181214P2_10	Standard	10.000	5.10	5978.265	5522.653	10.825	10.3	2.9	NO		NO	bb
10	10 181214P2_11	Standard	10.000	5.10	5975.731	5638.047	10.599	10.1	0.8	NO		NO	bb

**Compound name: d5-N-EtFOSAA**

Response Factor: 0.830956

RRF SD: 0.0615189, Relative SD: 7.40339

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	40.000	5.26	8250.089	10104.299	32.660	39.3	-1.7	NO		NO	bb
2	2 181214P2_3	Standard	40.000	5.32	8588.882	9958.873	34.497	41.5	3.8	NO		NO	bb
3	3 181214P2_4	Standard	40.000	5.32	8313.844	9410.290	35.339	42.5	6.3	NO		NO	bb
4	4 181214P2_5	Standard	40.000	5.32	8769.366	10550.824	33.246	40.0	0.0	NO		NO	bb
5	5 181214P2_6	Standard	40.000	5.32	8786.381	10229.688	34.356	41.3	3.4	NO		NO	bb
6	6 181214P2_7	Standard	40.000	5.32	7313.557	10503.686	27.851	33.5	-16.2	NO		NO	bb
7	7 181214P2_8	Standard	40.000	5.32	8913.029	10232.063	34.844	41.9	4.8	NO		NO	bb
8	8 181214P2_9	Standard	40.000	5.32	7247.781	9633.877	30.093	36.2	-9.5	NO		NO	bb
9	9 181214P2_10	Standard	40.000	5.32	8750.898	9886.291	35.406	42.6	6.5	NO		NO	bb
10	10 181214P2_11	Standard	40.000	5.32	8716.251	10227.562	34.089	41.0	2.6	NO		NO	bb

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**Compound name: 13C2-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	10.000	4.46	5911.953	5911.953	10.000	10.0	0.0	NO		NO	bb
2	2 181214P2_3	Standard	10.000	4.51	5684.619	5684.619	10.000	10.0	0.0	NO		NO	bb
3	3 181214P2_4	Standard	10.000	4.52	5210.434	5210.434	10.000	10.0	0.0	NO		NO	bb
4	4 181214P2_5	Standard	10.000	4.53	5665.122	5665.122	10.000	10.0	0.0	NO		NO	bb
5	5 181214P2_6	Standard	10.000	4.53	5615.395	5615.395	10.000	10.0	0.0	NO		NO	bb
6	6 181214P2_7	Standard	10.000	4.53	5543.850	5543.850	10.000	10.0	0.0	NO		NO	bb
7	7 181214P2_8	Standard	10.000	4.53	5688.920	5688.920	10.000	10.0	0.0	NO		NO	bb
8	8 181214P2_9	Standard	10.000	4.53	5370.965	5370.965	10.000	10.0	0.0	NO		NO	bb
9	9 181214P2_10	Standard	10.000	4.53	5522.653	5522.653	10.000	10.0	0.0	NO		NO	bb
10	10 181214P2_11	Standard	10.000	4.53	5638.047	5638.047	10.000	10.0	0.0	NO		NO	bb

**Compound name: 13C4-PFOS**

Response Factor: 1

RRF SD: 1.04673e-016, Relative SD: 1.04673e-014

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	28.700	4.83	2634.121	2634.121	28.700	28.7	0.0	NO		NO	bb
2	2 181214P2_3	Standard	28.700	4.88	2474.213	2474.213	28.700	28.7	0.0	NO		NO	bb
3	3 181214P2_4	Standard	28.700	4.89	2396.456	2396.456	28.700	28.7	0.0	NO		NO	bb
4	4 181214P2_5	Standard	28.700	4.89	2542.021	2542.021	28.700	28.7	0.0	NO		NO	bb
5	5 181214P2_6	Standard	28.700	4.89	2446.030	2446.030	28.700	28.7	0.0	NO		NO	bb
6	6 181214P2_7	Standard	28.700	4.89	2327.423	2327.423	28.700	28.7	0.0	NO		NO	bb
7	7 181214P2_8	Standard	28.700	4.89	2298.853	2298.853	28.700	28.7	0.0	NO		NO	bb
8	8 181214P2_9	Standard	28.700	4.89	2279.042	2279.042	28.700	28.7	0.0	NO		NO	bb
9	9 181214P2_10	Standard	28.700	4.89	2383.921	2383.921	28.700	28.7	0.0	NO		NO	bb
10	10 181214P2_11	Standard	28.700	4.89	2497.646	2497.646	28.700	28.7	0.0	NO		NO	bb

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

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**Compound name: d3-N-MeFOSAA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181214P2_2	Standard	40.000	5.15	10104.299	10104.299	40.000	40.0	0.0	NO		NO	bb
2	2 181214P2_3	Standard	40.000	5.21	9958.873	9958.873	40.000	40.0	0.0	NO		NO	bb
3	3 181214P2_4	Standard	40.000	5.21	9410.290	9410.290	40.000	40.0	0.0	NO		NO	bb
4	4 181214P2_5	Standard	40.000	5.21	10550.824	10550.824	40.000	40.0	0.0	NO		NO	bb
5	5 181214P2_6	Standard	40.000	5.21	10229.688	10229.688	40.000	40.0	0.0	NO		NO	bb
6	6 181214P2_7	Standard	40.000	5.22	10503.686	10503.686	40.000	40.0	0.0	NO		NO	bb
7	7 181214P2_8	Standard	40.000	5.22	10232.063	10232.063	40.000	40.0	0.0	NO		NO	bb
8	8 181214P2_9	Standard	40.000	5.22	9633.877	9633.877	40.000	40.0	0.0	NO		NO	bb
9	9 181214P2_10	Standard	40.000	5.22	9886.291	9886.291	40.000	40.0	0.0	NO		NO	bb
10	10 181214P2_11	Standard	40.000	5.21	10227.562	10227.562	40.000	40.0	0.0	NO		NO	bb



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:12:06 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 15 Dec 2018 10:04:32  
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_2, Date: 14-Dec-2018, Time: 12:26:47, ID: ST181214P2-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

#	Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBS	24	0.9982	NO	
2	2 PFHxA	23	0.9987	NO	
3	3 HFPO-DA	23	0.9972	NO	
4	4 PFHpA	23	0.9996	NO	
5	5 ADONA	23	0.9983	NO	
6	6 PFHxS	24	0.9976	NO	
7	7 PFOA	23	0.9987	NO	
8	8 PFNA	23	0.9983	NO	
9	9 PFOS	24	0.9974	NO	
10	10 9Cl-PF3ONS	24	0.9941	NO	
11	11 PFDA	23	0.9990	NO	
12	12 N-MeFOSAA	25	0.9978	NO	
13	13 N-EtFOSAA	25	0.9984	NO	
14	14 PFUnA	23	0.9981	NO	
15	15 11Cl-PF3OUdS	24	0.9973	NO	
16	16 PFDoA	23	0.9985	NO	
17	17 PFTrDA	23	0.9993	NO	
18	18 PFTeDA	23	0.9991	NO	
19	19 13C2-PFHxA	23		NO	3.282
20	20 13C3-HFPO-DA	23		NO	5.211
21	21 13C2-PFDA	23		NO	3.412
22	22 d5-N-EtFOSAA	25		NO	7.403
23	23 13C2-PFOA	23		NO	0.000
24	24 13C4-PFOS	24		NO	0.000
25	25 d3-N-MeFOSAA	25		NO	0.000

Dataset: Untitled

Last Altered: Saturday, December 15, 2018 10:42:45 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:42:57 Pacific Standard Time

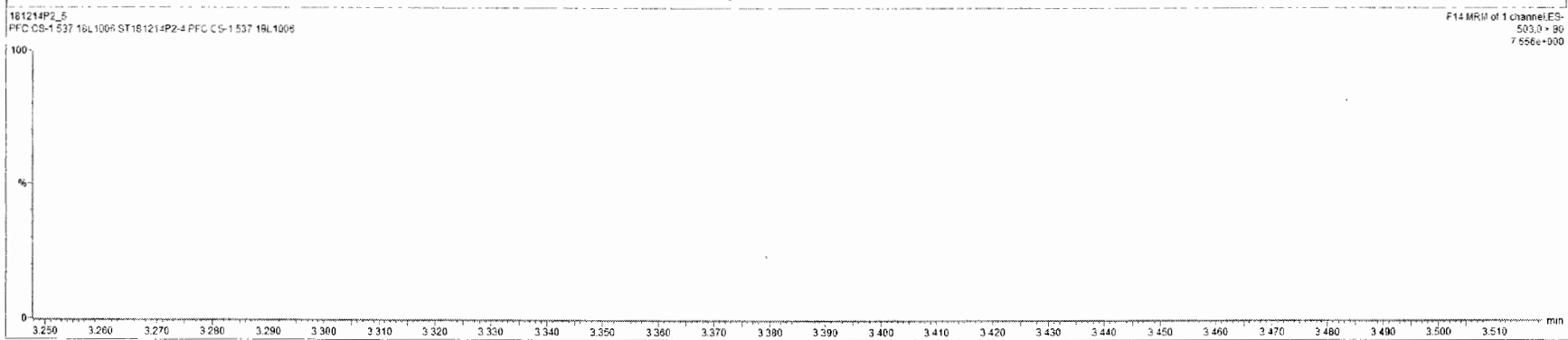
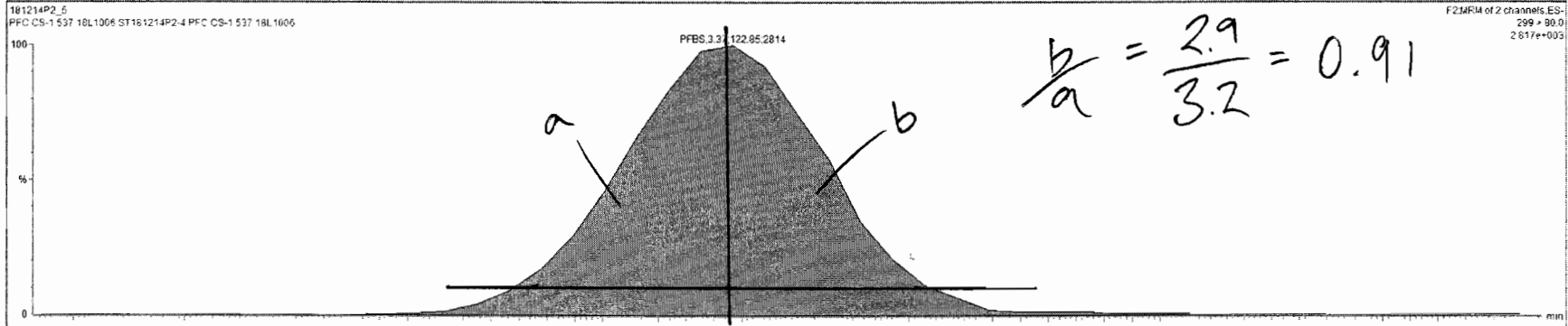
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Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Compound name: PFBS

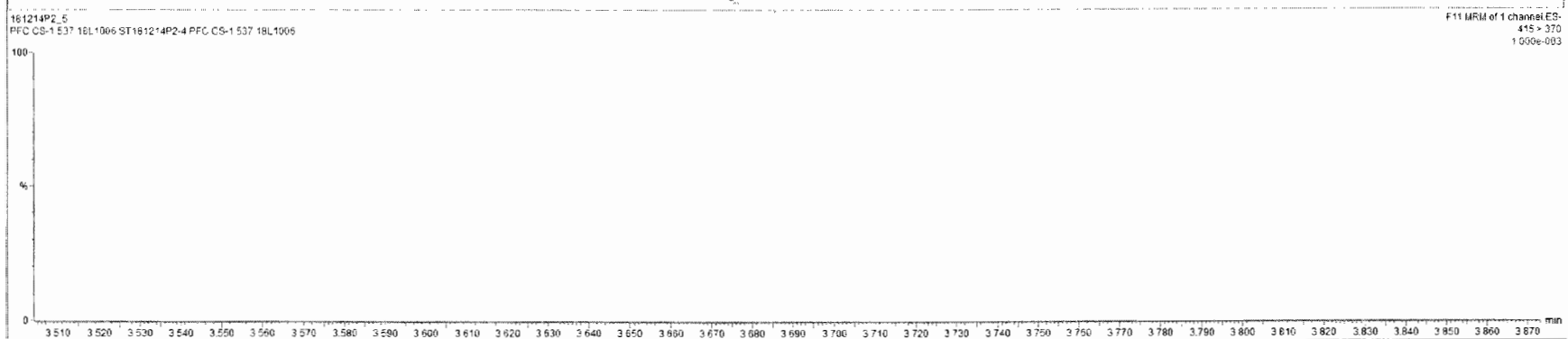
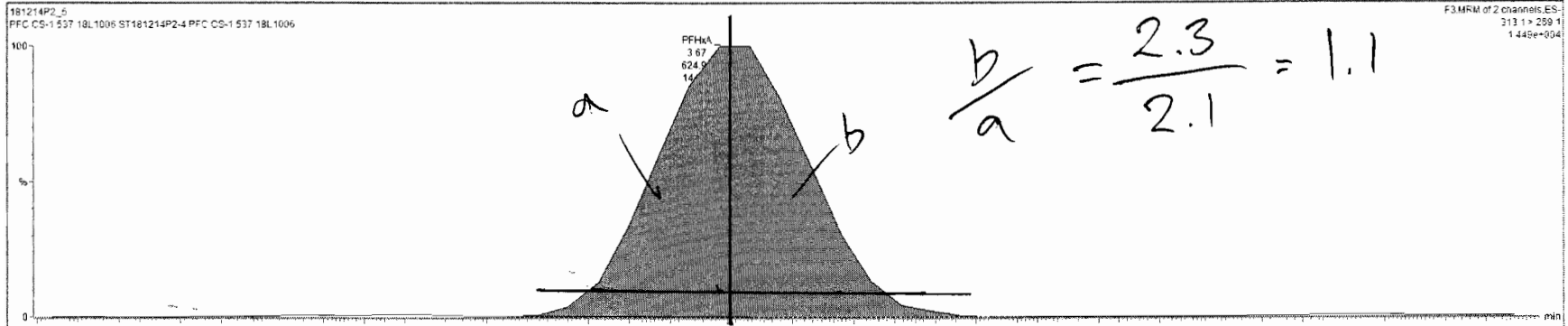
	# Name	ID	Acq.Date	Acq.Time
1	1 181214P2_1	IPA	14-Dec-18	12:15:34
2	2 181214P2_2	ST181214P2-1 PFC CS-4 537 18L1003	14-Dec-18	12:26:47
3	3 181214P2_3	ST181214P2-2 PFC CS-3 537 18L1004	14-Dec-18	12:37:57
4	4 181214P2_4	ST181214P2-3 PFC CS-2 537 18L1005	14-Dec-18	12:49:08
5	5 181214P2_5	ST181214P2-4 PFC CS-1 537 18L1006	14-Dec-18	13:00:27
6	6 181214P2_6	ST181214P2-5 PFC CS0 537 18L1007	14-Dec-18	13:11:39
7	7 181214P2_7	ST181214P2-6 PFC CS1 537 18L1008	14-Dec-18	13:22:50
8	8 181214P2_8	ST181214P2-7 PFC CS2 537 18L1009	14-Dec-18	13:34:01
9	9 181214P2_9	ST181214P2-8 PFC CS3 537 18L1010	14-Dec-18	13:45:12
10	10 181214P2_10	ST181214P2-9 PFC CS4 537 18L1011	14-Dec-18	13:56:22
11	11 181214P2_11	ST181214P2-10 PFC CS5 537 18L1012	14-Dec-18	14:07:33
12	12 181214P2_12	IPA	14-Dec-18	14:18:43
13	13 181214P2_13	ST181214P2-1 PFC ICV 537 18L1013	14-Dec-18	14:29:54
14	14 181214P2_14	IPA	14-Dec-18	15:18:41

PFBS

#	Name	Type	Std. Conc.	RT	Resp.	Ratio	Ratio Flag	IS Resp.	Response	Conc.	%Dev.	Primary Flags	Coeff. D.F.D.	RRF Mean	RRF %RSD	RRF 1 <sup>st</sup> Det.
1	181214P2_2	Standard	0.222	3.26	6.442e0			2.634e3	0.070	0.1	-58.8	bx	0.99824			0.316
2	181214P2_3	Standard	0.444	3.26	2.584e1			2.474e3	0.360	0.4	-12.0	bb	0.99824			0.675
3	181214P2_4	Standard	0.888	3.37	5.281e1			2.396e3	0.632	0.8	-7.2	bb	0.99824			0.712
4	181214P2_5	Standard	1.780	3.37	1.229e2			2.542e3	1.387	1.8	-1.6	bb	0.99824			0.778
5	181214P2_6	Standard	4.440	3.37	2.673e2			2.446e3	3.136	4.1	-7.9	bb	0.99824			0.706



#	Name	Type	Std. Conc.	RT	Resp.	Ratio	Ratio Flag	IS Flag	Response	Conc.	%Dev	Primary Flag	Coef. Of G.	RRF Mean	RRF %RSD	RRF	1 <sup>st</sup> Det.
3	181214P2_4	Standard	1.000	3.67	3.189e2				5.210e3	0.612	1.1	0.4	MM	0.99872		0.612	
4	181214P2_5	Standard	2.000	3.67	6.258e2				1.065e3	1.103	1.9	-4.1	MM	0.99872		0.662	
5	181214P2_6	Standard	5.000	3.68	1.577e3				5.615e3	2.809	4.9	-2.4	hh	0.99872		0.562	
6	181214P2_7	Standard	10.000	3.68	3.224e3				5.544e3	5.815	10.1	1.1	MM	0.99872		0.581	
7	181214P2_8	Standard	25.000	3.68	7.651e3				5.689e3	13.450	23.4	-6.5	db	0.99872		0.538	



# ICAL

## Compound 18: 13C2-PFOA

high 5911.95 RPD  
low 5210.43 12.61

ID	Name	Type	Std. Coi RT	Area	IS Area	Respor Primary	Flags
1	ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Standard	10	4.46 5911.95	5911.95	10.00 bb
2	ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Standard	10	4.51 5684.62	5684.62	10.00 bb
3	ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Standard	10	4.52 5210.43	5210.43	10.00 bb
4	ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Standard	10	4.53 5665.12	5665.12	10.00 bb
5	ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Standard	10	4.53 5615.40	5615.40	10.00 bb
6	ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Standard	10	4.53 5543.85	5543.85	10.00 bb
7	ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Standard	10	4.53 5688.92	5688.92	10.00 bb
8	ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Standard	10	4.53 5370.97	5370.97	10.00 bb
9	ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Standard	10	4.53 5522.65	5522.65	10.00 bb
10	ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Standard	10	4.53 5638.05	5638.05	10.00 bb

**AVG 5585.20**

## Compound 19: 13C4-PFOS

high 2634.12 RPD  
low 2279.04 14.45

ID	Name	Type	Std. Coi RT	Area	IS Area	Respor Primary	Flags
1	ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Standard	28.7	4.83 2634.12	2634.12	28.70 bb
2	ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Standard	28.7	4.88 2474.21	2474.21	28.70 bb
3	ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Standard	28.7	4.89 2396.46	2396.46	28.70 bb
4	ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Standard	28.7	4.89 2542.02	2542.02	28.70 bb
5	ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Standard	28.7	4.89 2446.03	2446.03	28.70 bb
6	ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Standard	28.7	4.89 2327.42	2327.42	28.70 bb
7	ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Standard	28.7	4.89 2298.85	2298.85	28.70 bb
8	ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Standard	28.7	4.89 2279.04	2279.04	28.70 bb
9	ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Standard	28.7	4.89 2383.92	2383.92	28.70 bb
10	ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Standard	28.7	4.89 2497.65	2497.65	28.70 bb

**AVG 2427.97**

**Compound 20: d3-N-MeFOSAA**high 10550.82 RPD  
low 9410.29 11.43

ID	Name	Type	Std. Col RT	Area	IS Area	Respor Primary	Flags
1 ST181214P2-1 PFC CS-4 537 18L1003	181214P2_2	Standard	40	5.15 10104.30	10104.30	40.00	bb
2 ST181214P2-2 PFC CS-3 537 18L1004	181214P2_3	Standard	40	5.21 9958.87	9958.87	40.00	bb
3 ST181214P2-3 PFC CS-2 537 18L1005	181214P2_4	Standard	40	5.21 9410.29	9410.29	40.00	bb
4 ST181214P2-4 PFC CS-1 537 18L1006	181214P2_5	Standard	40	5.21 10550.82	10550.82	40.00	bb
5 ST181214P2-5 PFC CS0 537 18L1007	181214P2_6	Standard	40	5.21 10229.69	10229.69	40.00	bb
6 ST181214P2-6 PFC CS1 537 18L1008	181214P2_7	Standard	40	5.22 10503.69	10503.69	40.00	bb
7 ST181214P2-7 PFC CS2 537 18L1009	181214P2_8	Standard	40	5.22 10232.06	10232.06	40.00	bb
8 ST181214P2-8 PFC CS3 537 18L1010	181214P2_9	Standard	40	5.22 9633.88	9633.88	40.00	bb
9 ST181214P2-9 PFC CS4 537 18L1011	181214P2_10	Standard	40	5.22 9886.29	9886.29	40.00	bb
10 ST181214P2-10 PFC CS5 537 18L1012	181214P2_11	Standard	40	5.21 10227.56	10227.56	40.00	bb
				<b>AVG</b>	<b>10073.75</b>		

Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 15 Dec 2018 10:04:32

Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

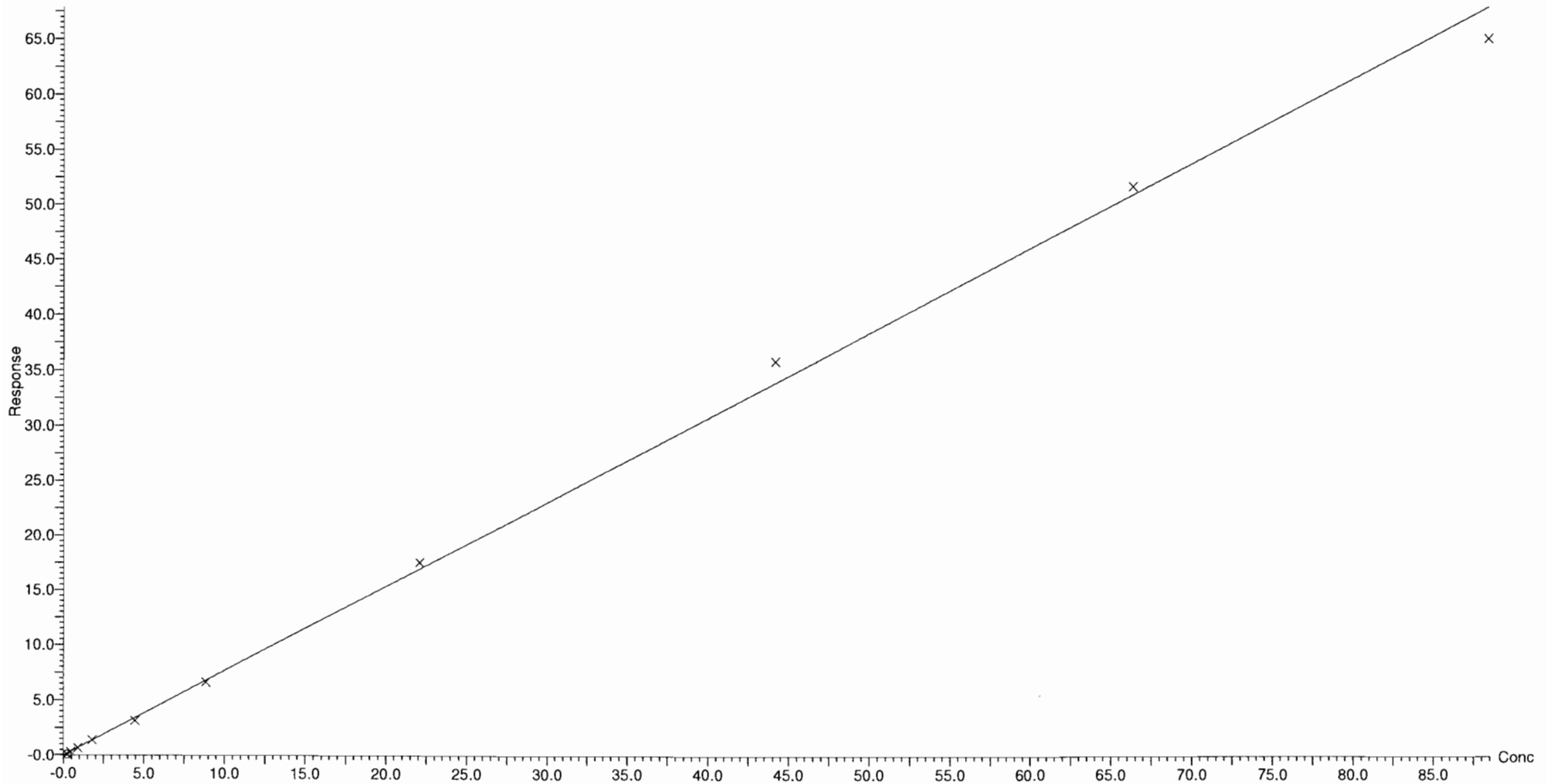
Compound name: PFBS

Coefficient of Determination:  $R^2 = 0.998244$

Calibration curve:  $0.767139 * x$

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

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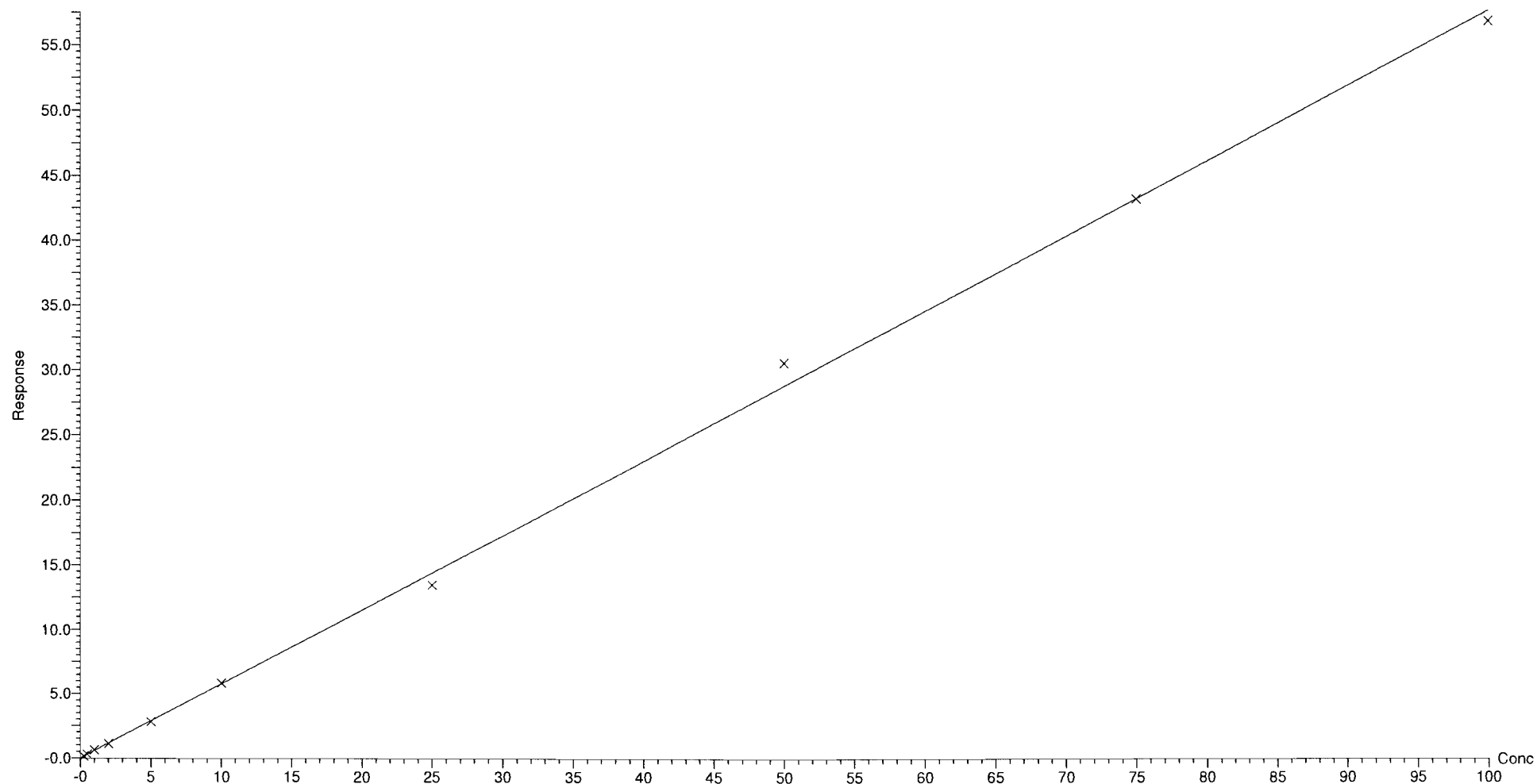
Compound name: PFHxA

Coefficient of Determination:  $R^2 = 0.998719$

Calibration curve:  $0.575411 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

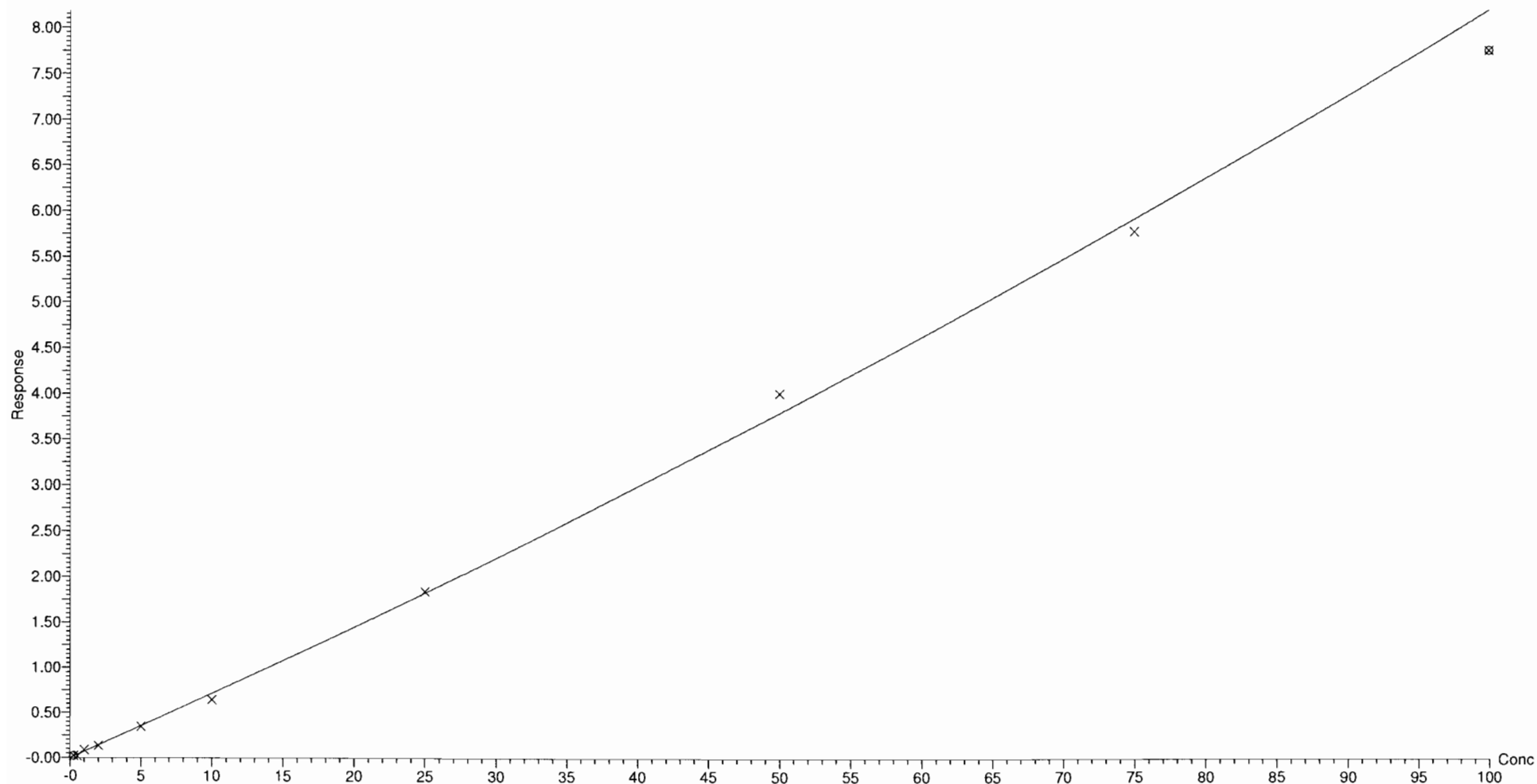




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Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
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Compound name: HFPO-DA  
Coefficient of Determination:  $R^2 = 0.997247$   
Calibration curve:  $0.000119042 * x^2 + 0.0699276 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

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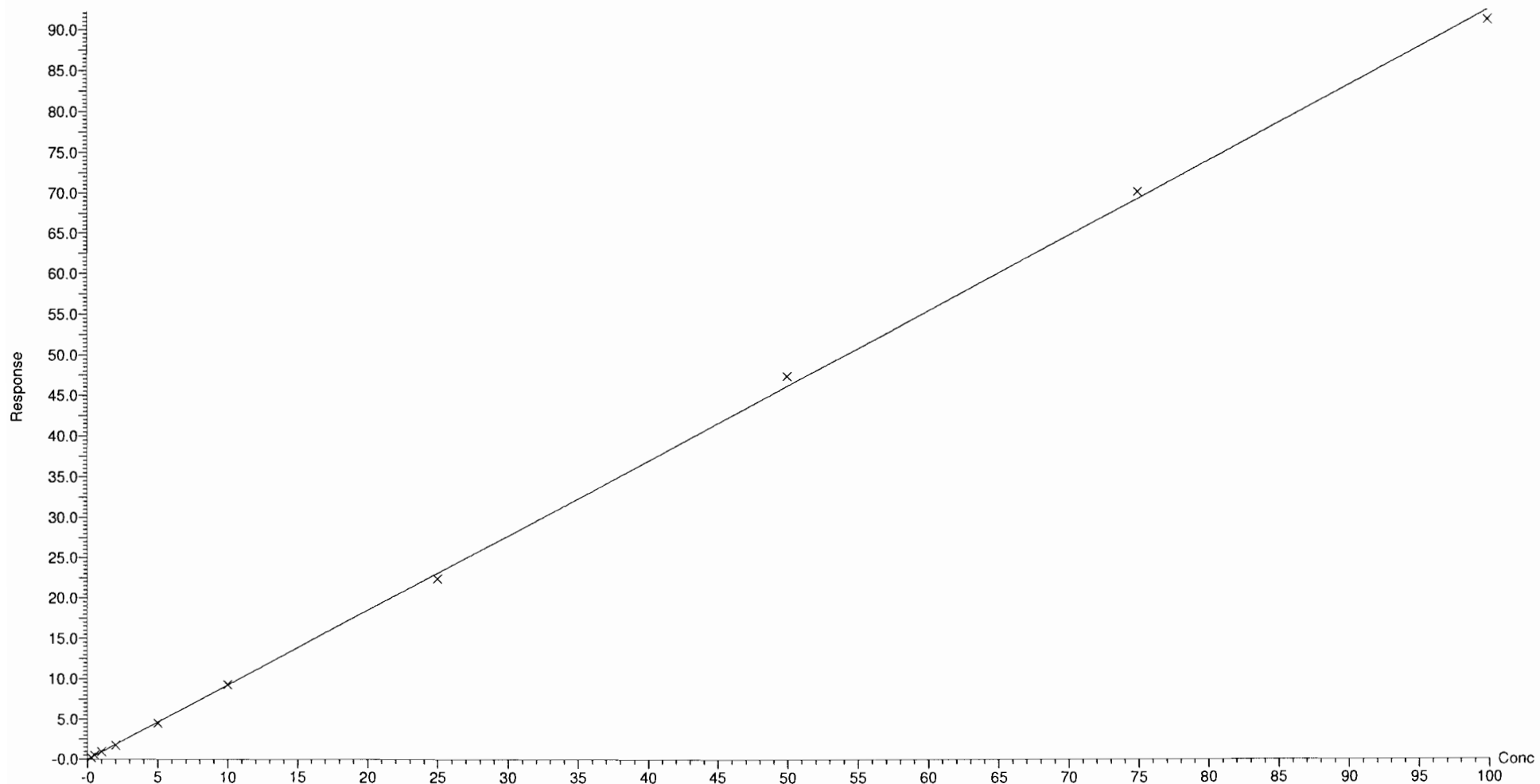
Compound name: PFHpA

Coefficient of Determination:  $R^2 = 0.999597$

Calibration curve:  $0.922271 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

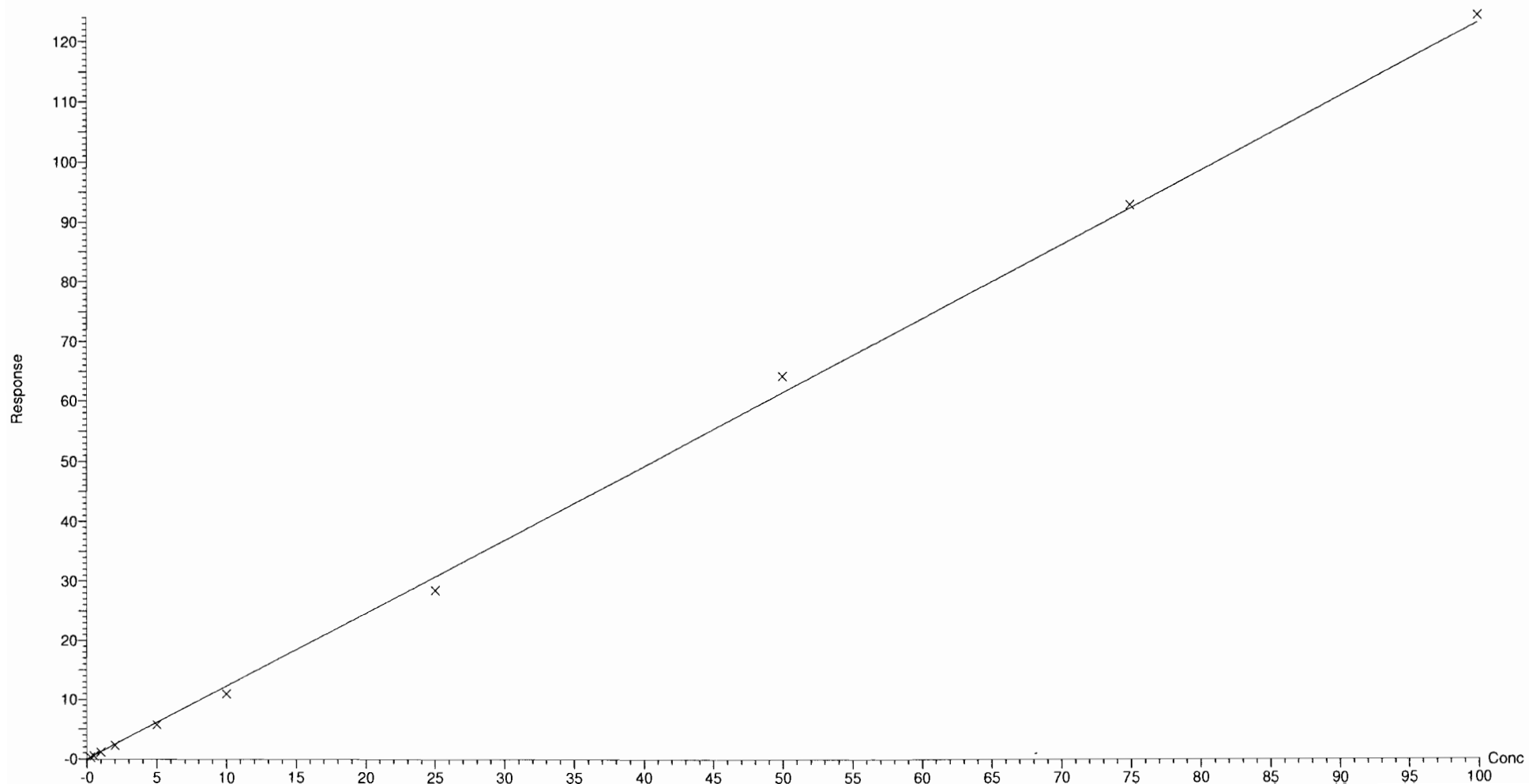
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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

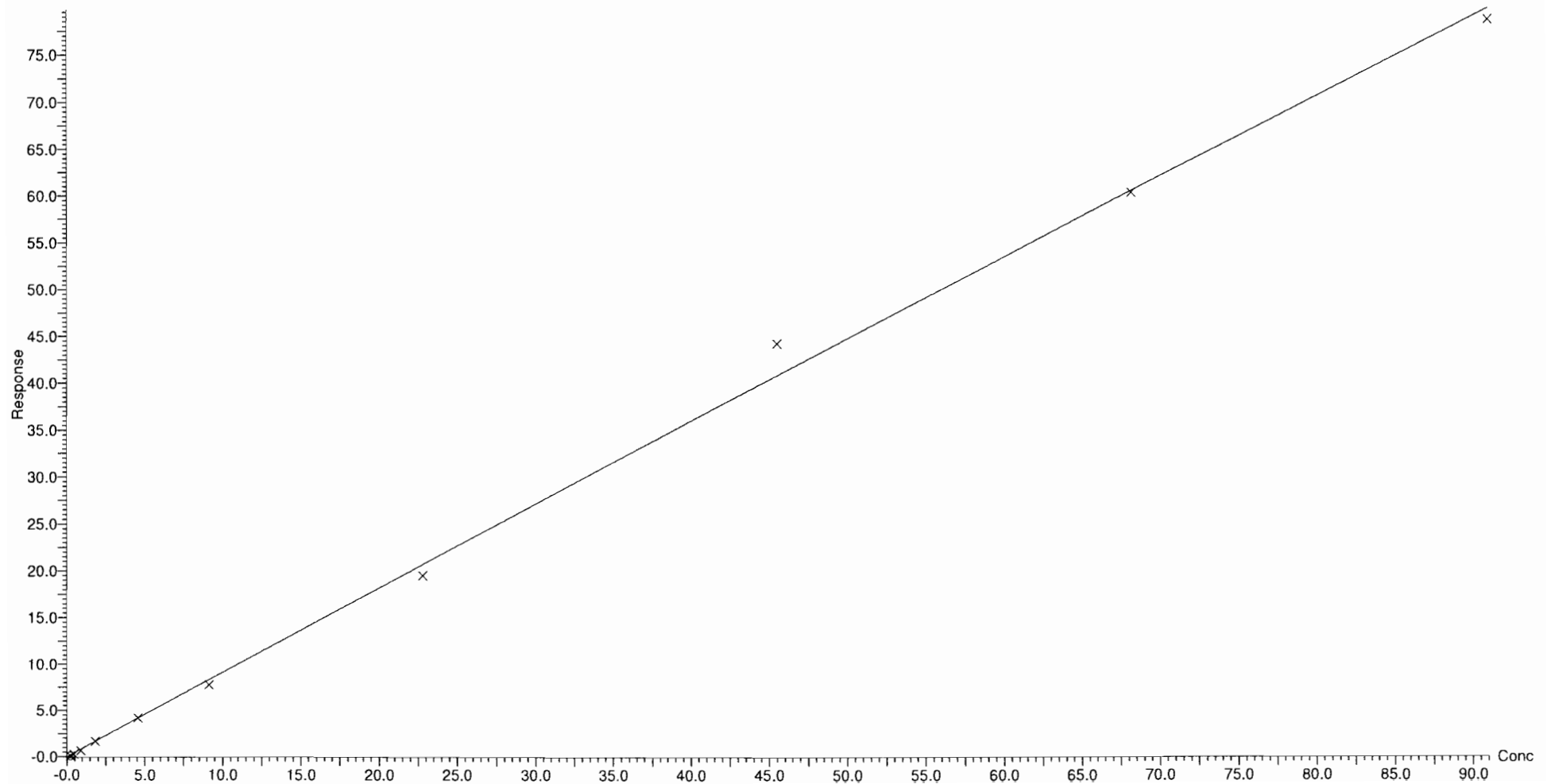
Compound name: ADONA  
Coefficient of Determination:  $R^2 = 0.998350$   
Calibration curve:  $1.22899 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

Compound name: PFHxS  
Coefficient of Determination:  $R^2 = 0.997577$   
Calibration curve:  $-0.00045622 * x^2 + 0.918218 * x$   
Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )  
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

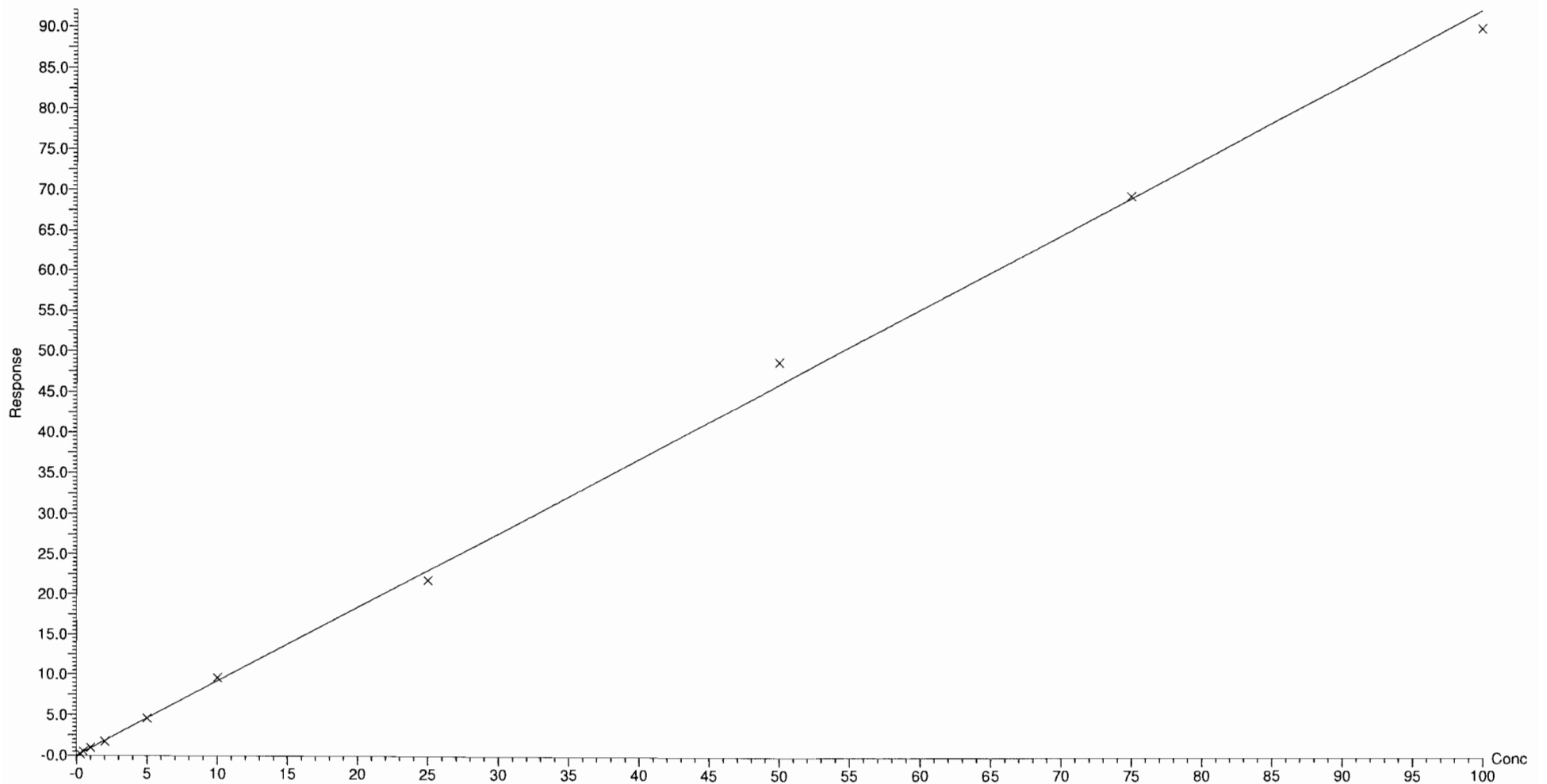
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.998672$

Calibration curve:  $0.920346 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

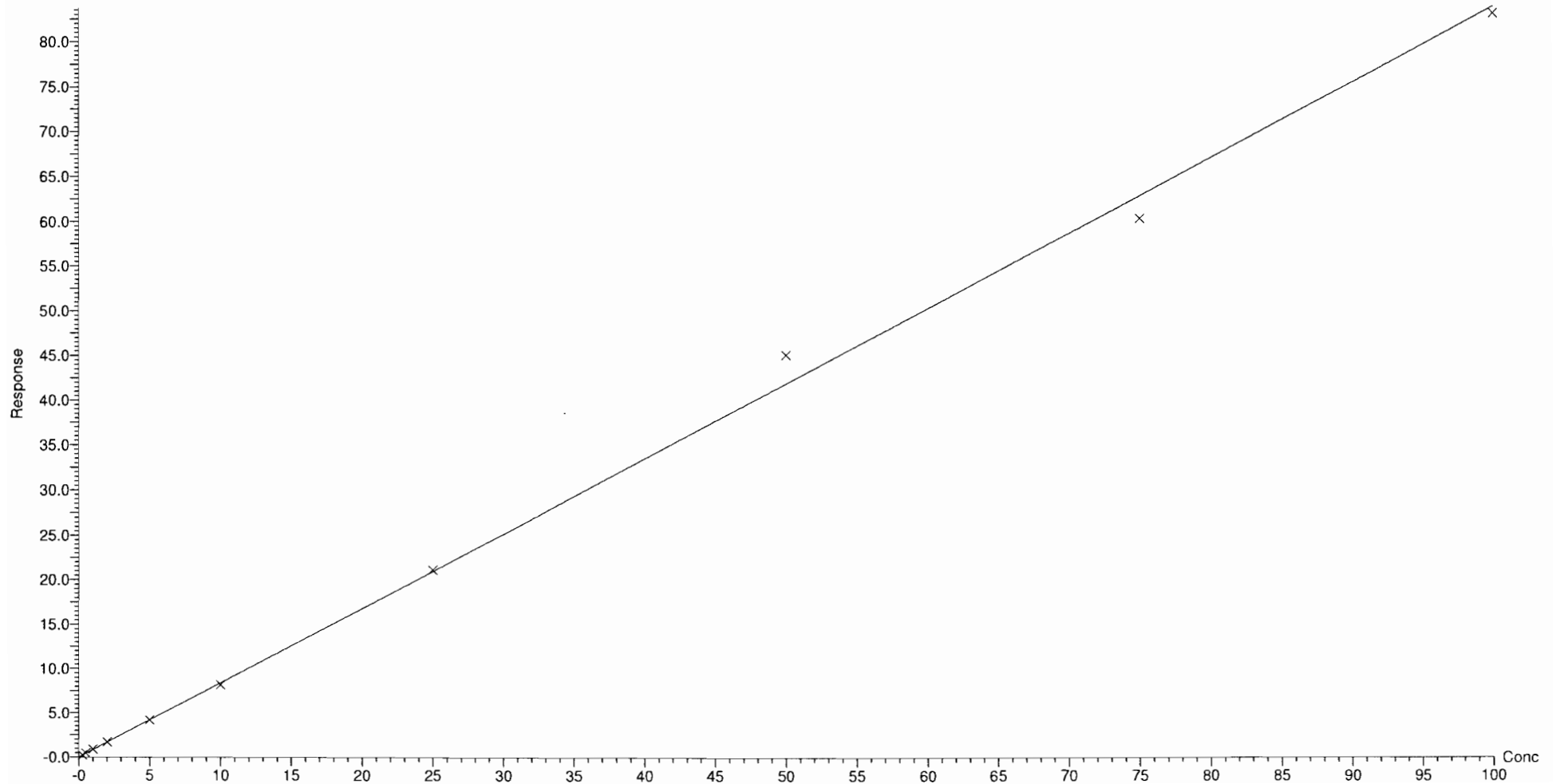
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
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Compound name: PFNA  
Coefficient of Determination:  $R^2 = 0.998301$   
Calibration curve:  $0.837534 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

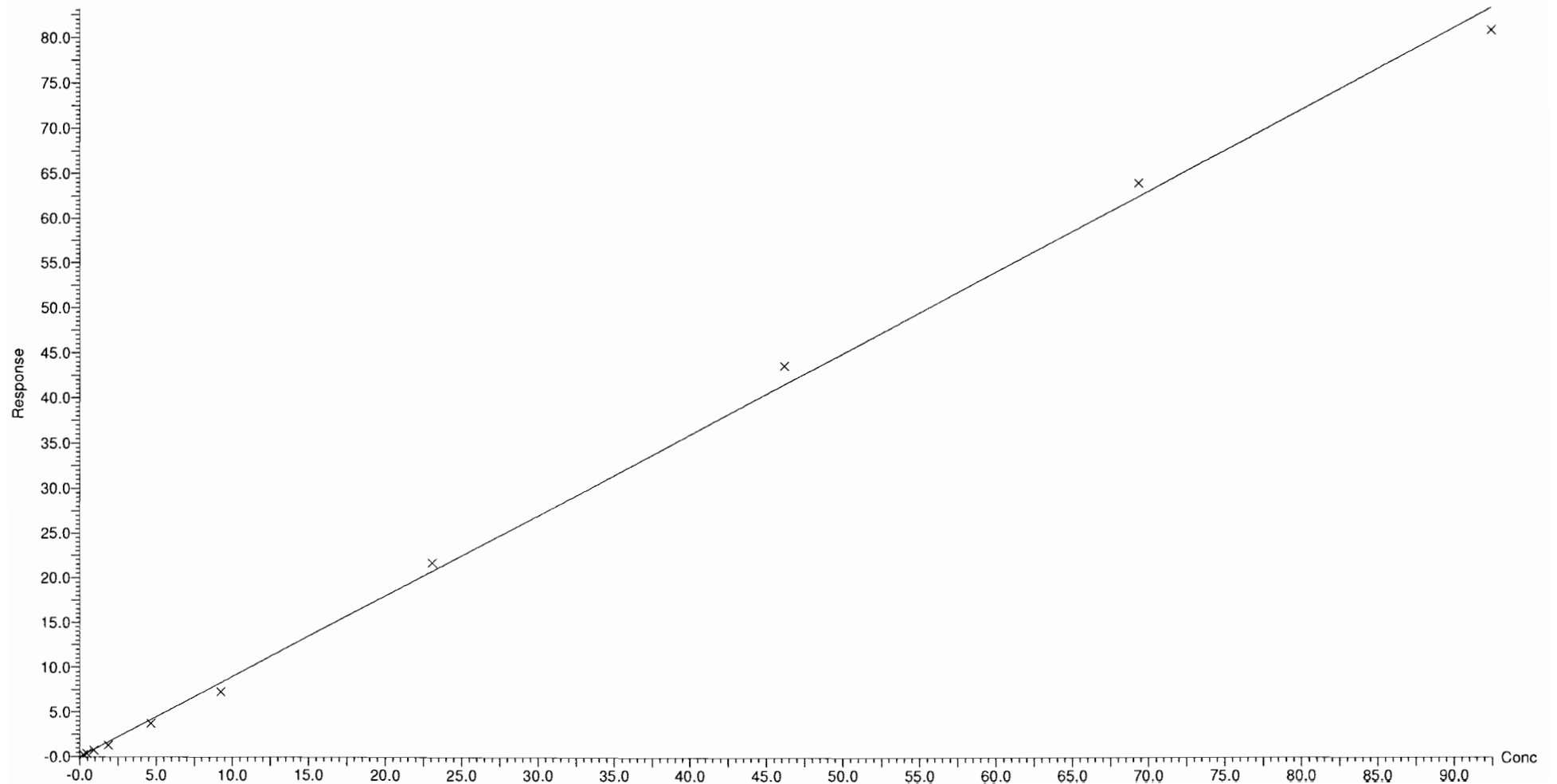
Compound name: PFOS

Coefficient of Determination:  $R^2 = 0.997446$

Calibration curve:  $0.899774 * x$

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

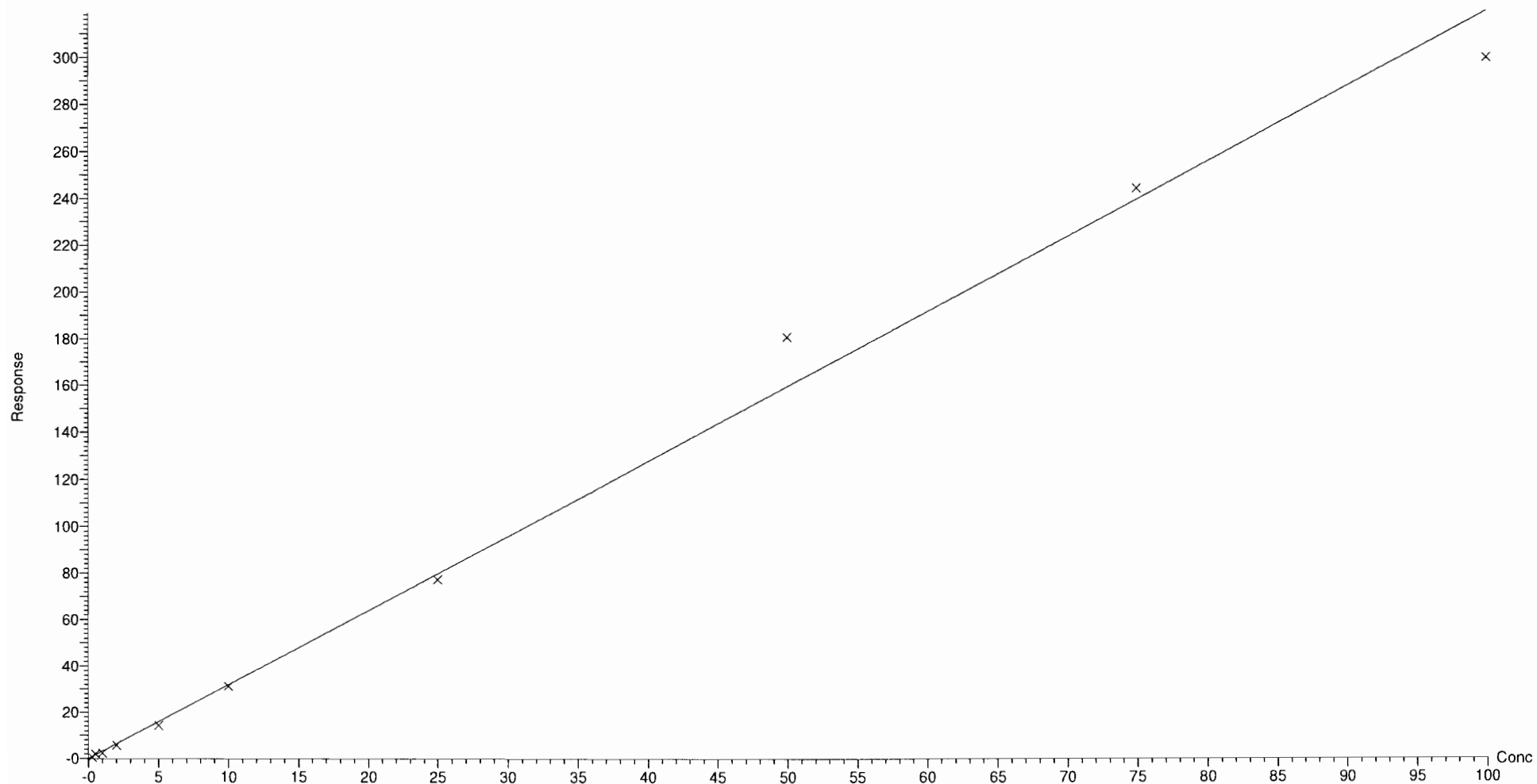
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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

Compound name: 9CI-PF3ONS  
Coefficient of Determination:  $R^2 = 0.994100$   
Calibration curve:  $3.18847 * x$   
Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

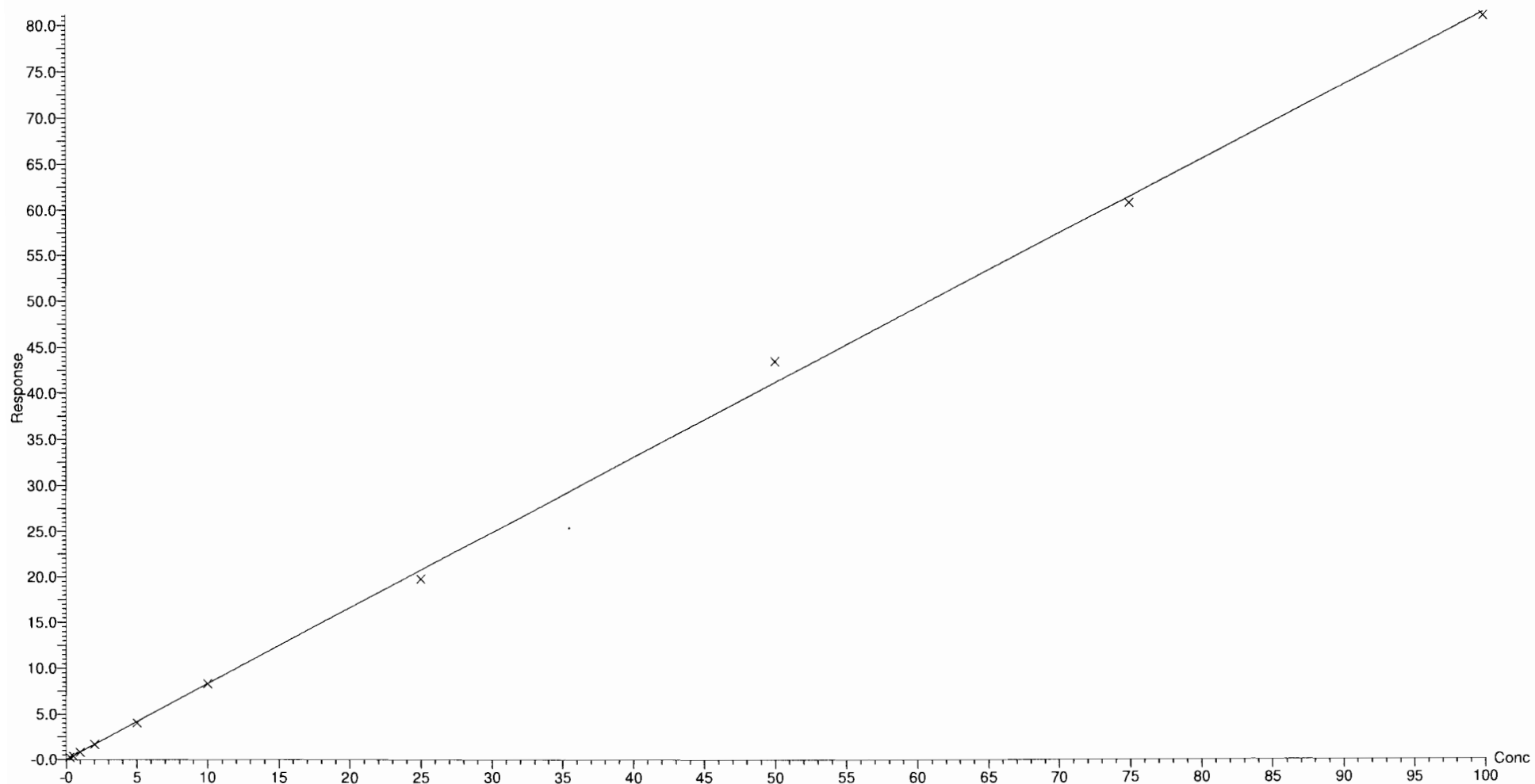




Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

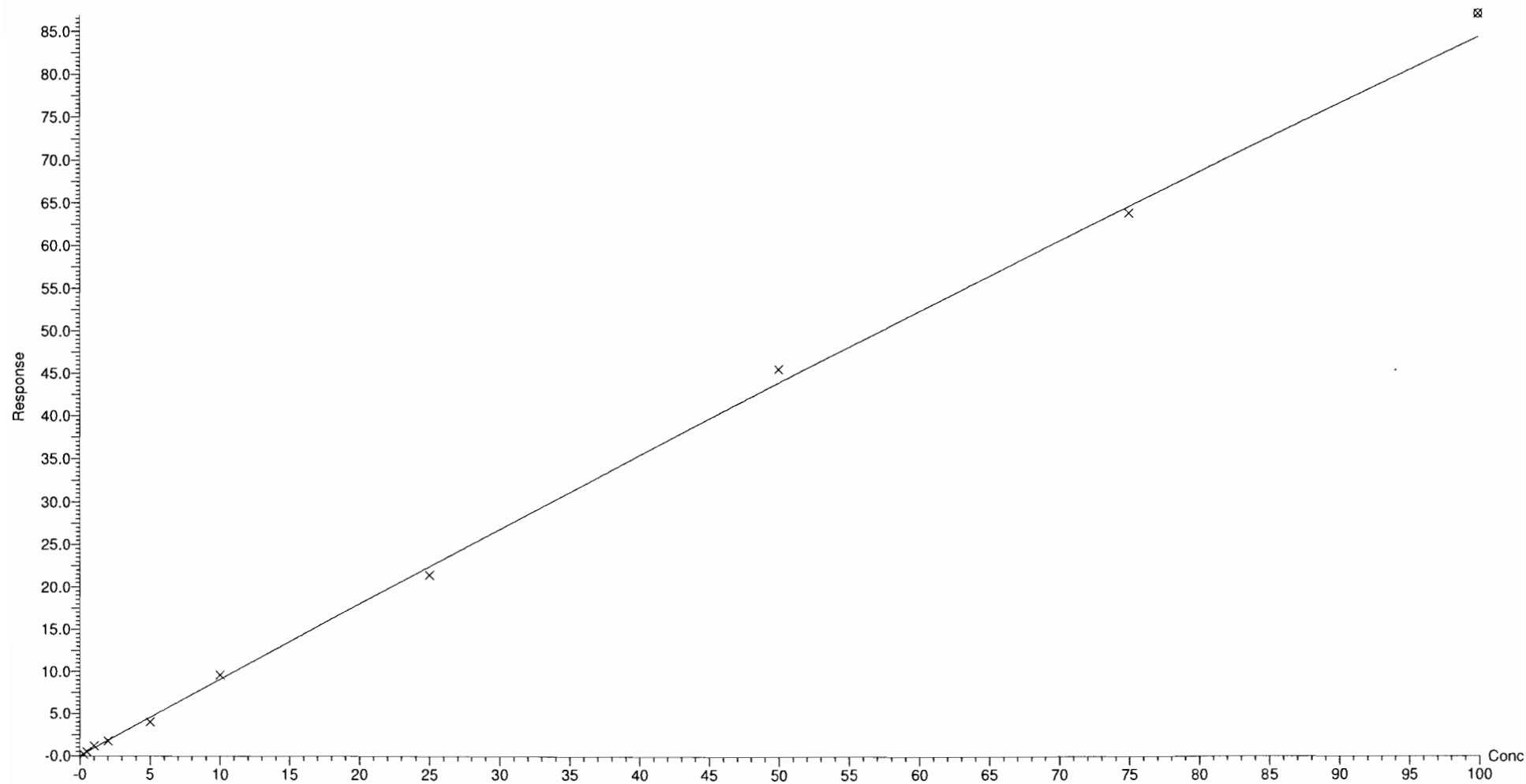
Compound name: PFDA  
Coefficient of Determination:  $R^2 = 0.999015$   
Calibration curve:  $-0.000221295 * x^2 + 0.834247 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

Compound name: N-MeFOSAA  
Coefficient of Determination:  $R^2 = 0.997830$   
Calibration curve:  $-0.00072913 * x^2 + 0.914639 * x$   
Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )  
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

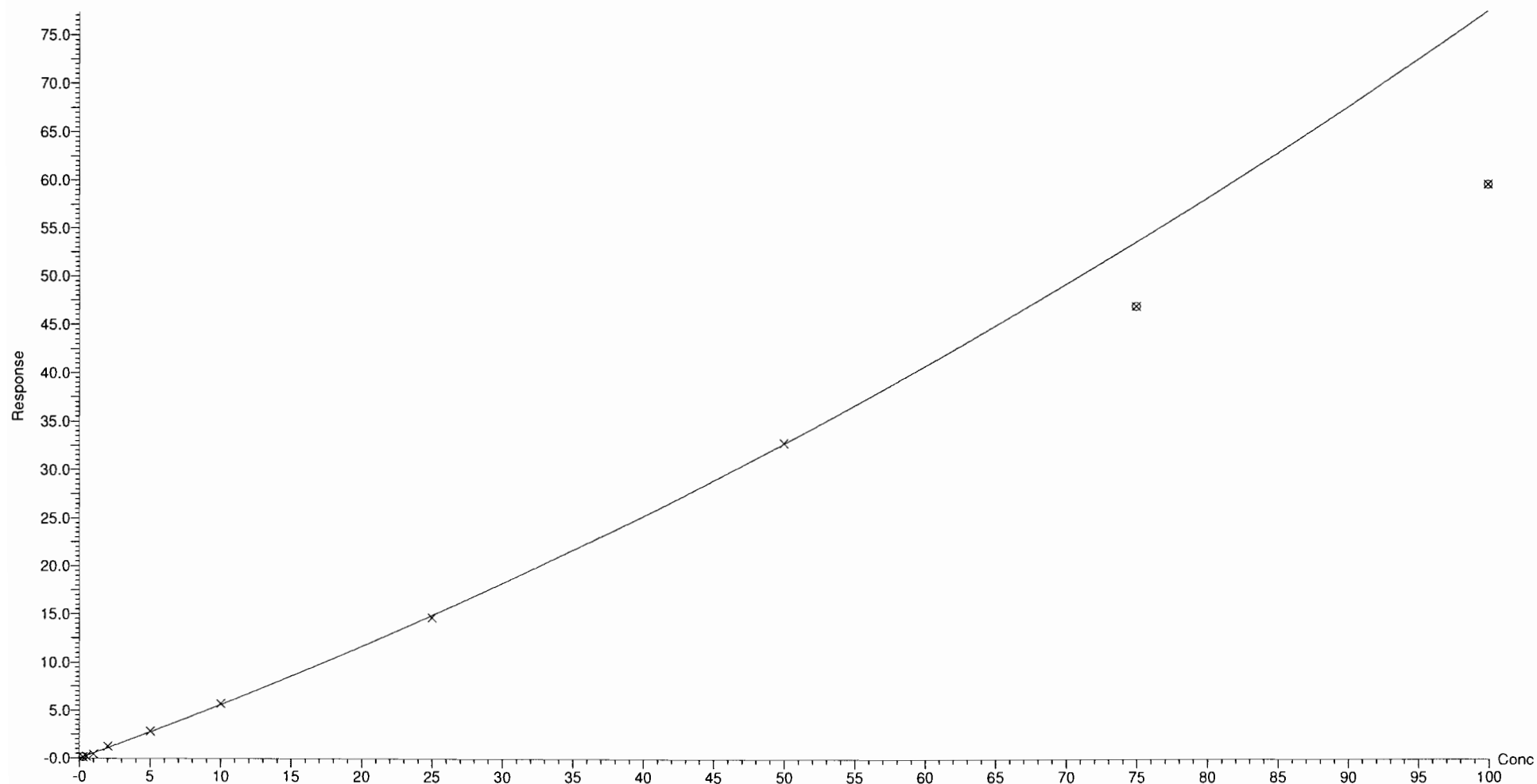
Compound name: N-EtFOSAA

Coefficient of Determination:  $R^2 = 0.998450$

Calibration curve:  $0.00236696 * x^2 + 0.536971 * x$

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

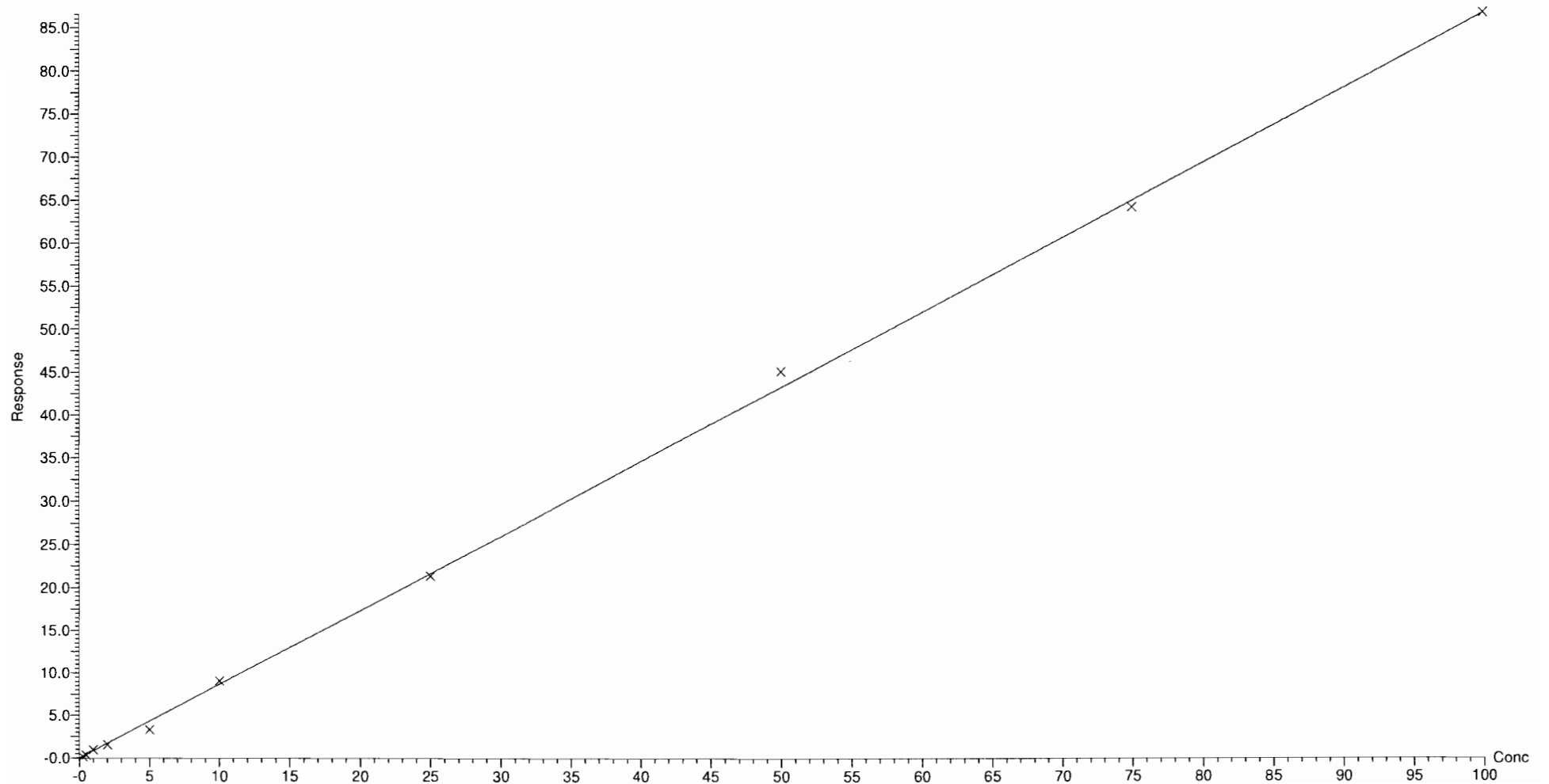
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

Compound name: PFUnA  
Coefficient of Determination:  $R^2 = 0.998136$   
Calibration curve:  $0.864966 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

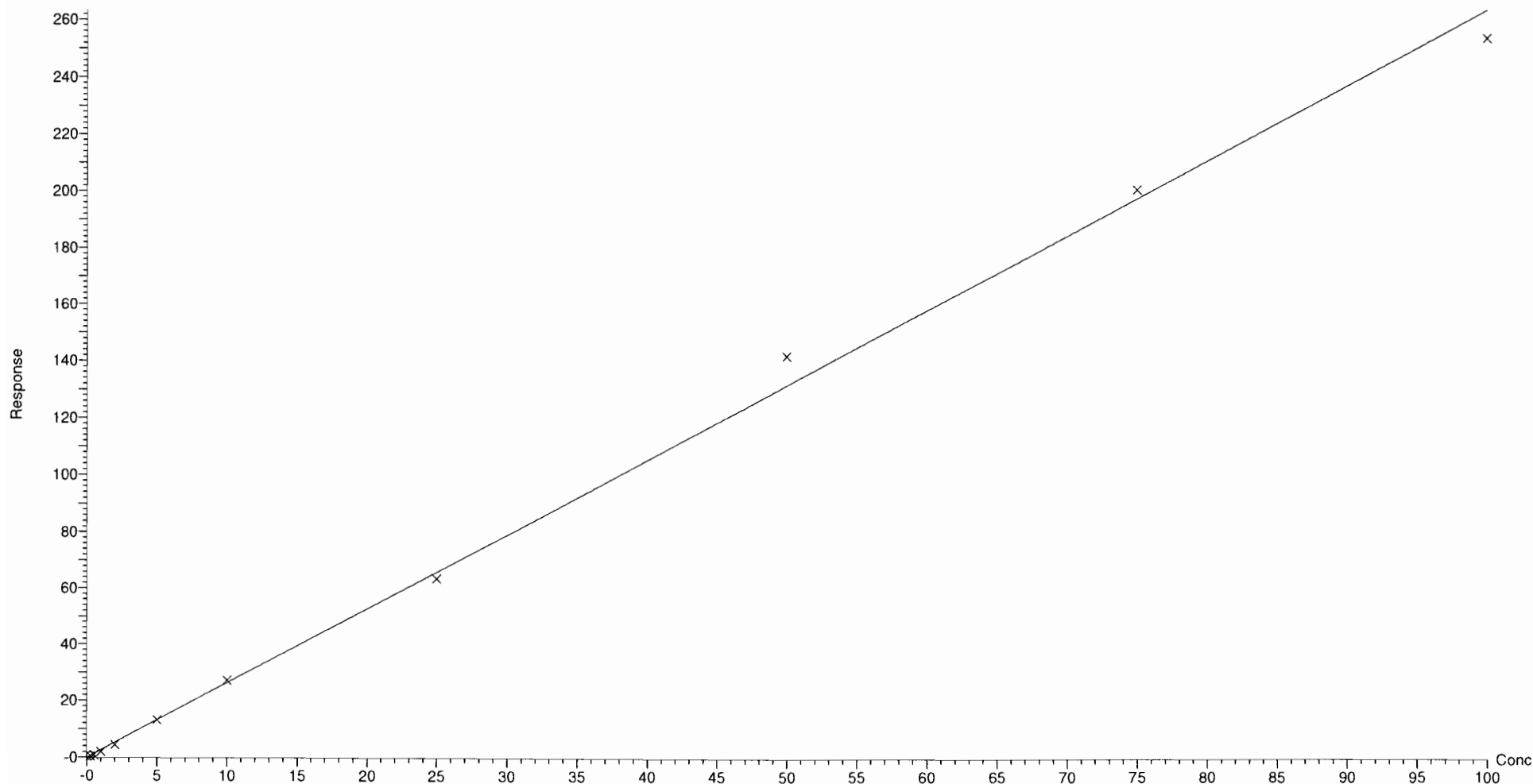
Compound name: 11Cl-PF3OUdS

Coefficient of Determination:  $R^2 = 0.997306$

Calibration curve:  $2.63344 * x$

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

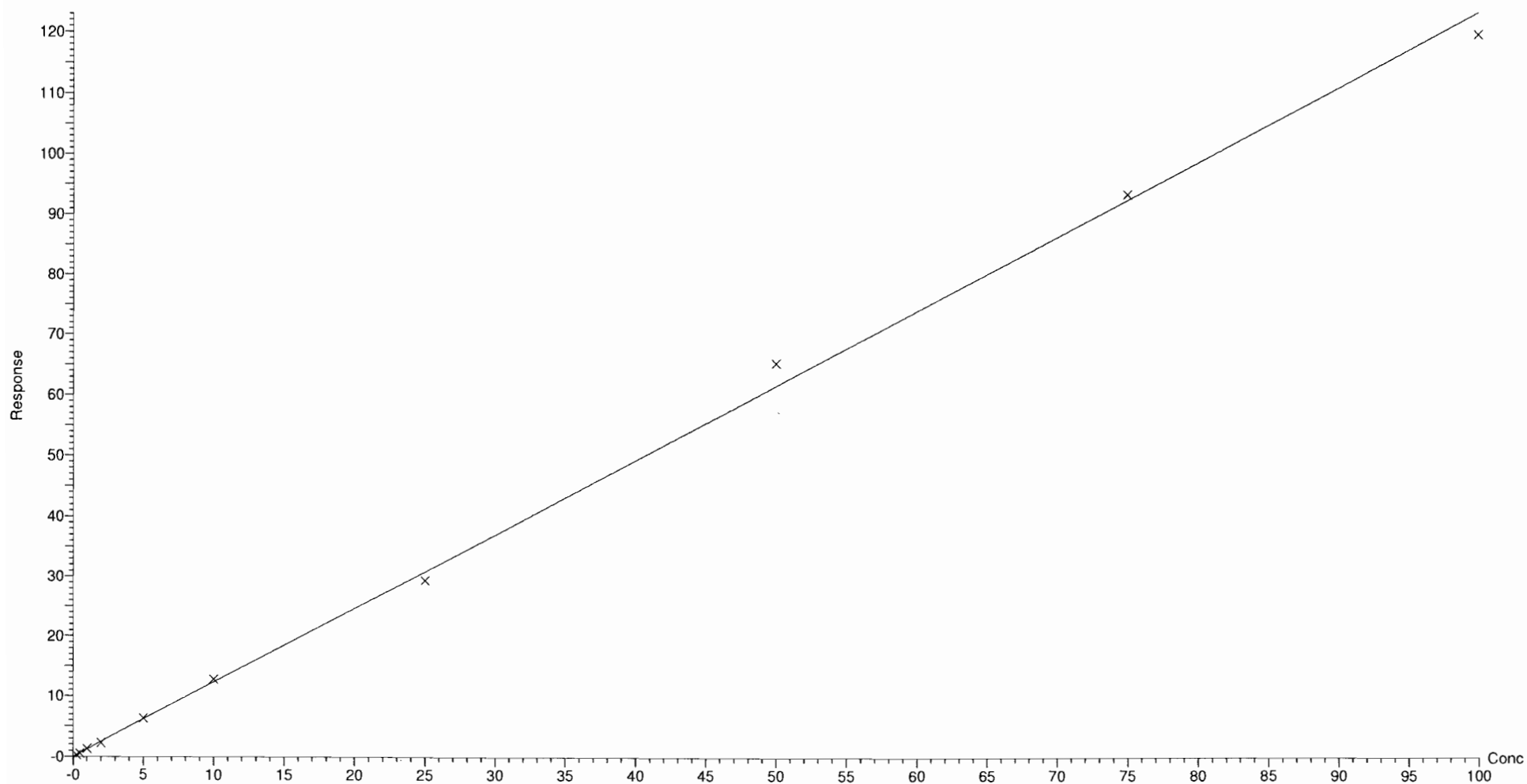
Compound name: PFD<sub>o</sub>A

Coefficient of Determination:  $R^2 = 0.998508$

Calibration curve:  $1.2306 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

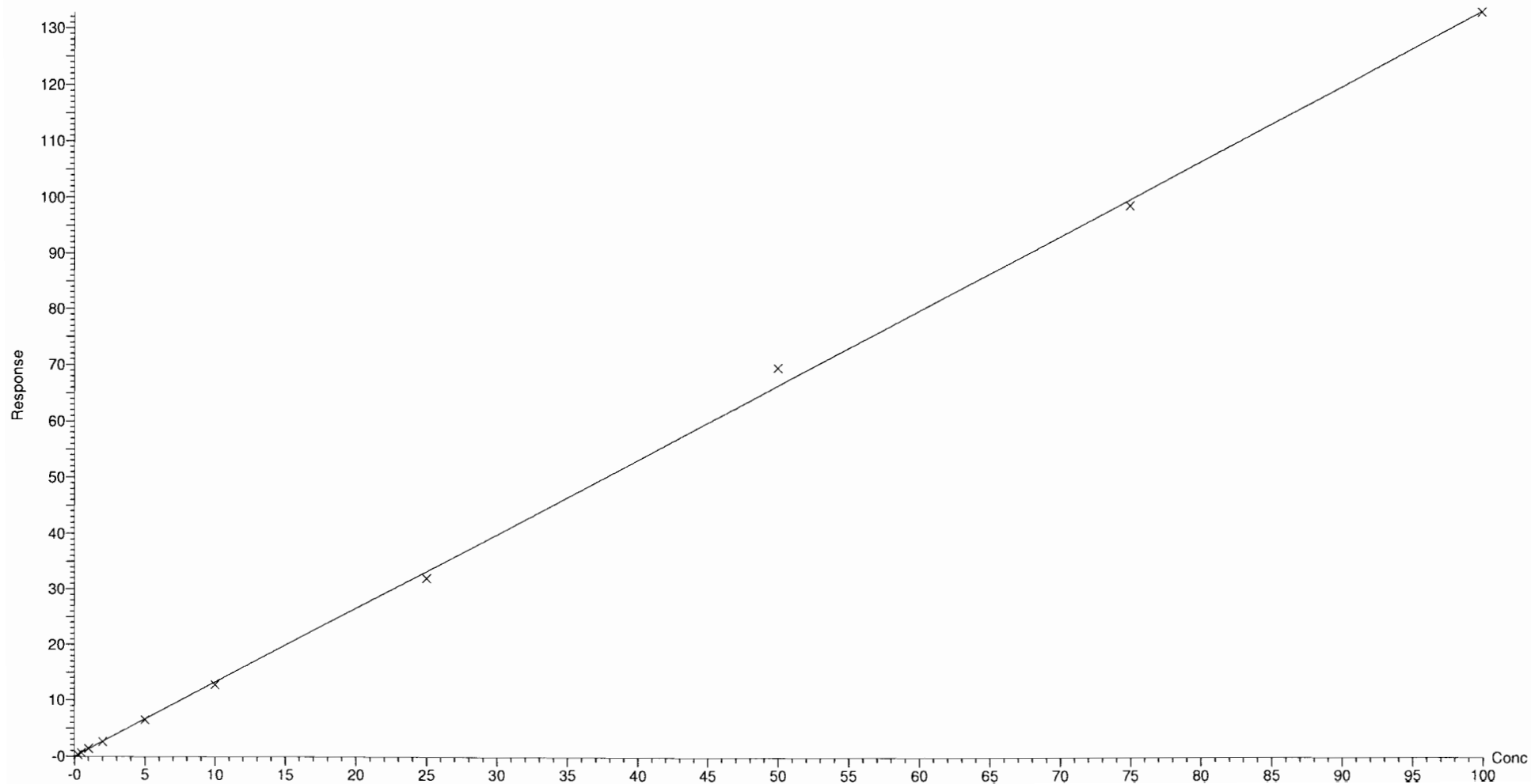
Compound name: PFTTrDA

Coefficient of Determination:  $R^2 = 0.999286$

Calibration curve:  $1.32773 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:41:43 Pacific Standard Time

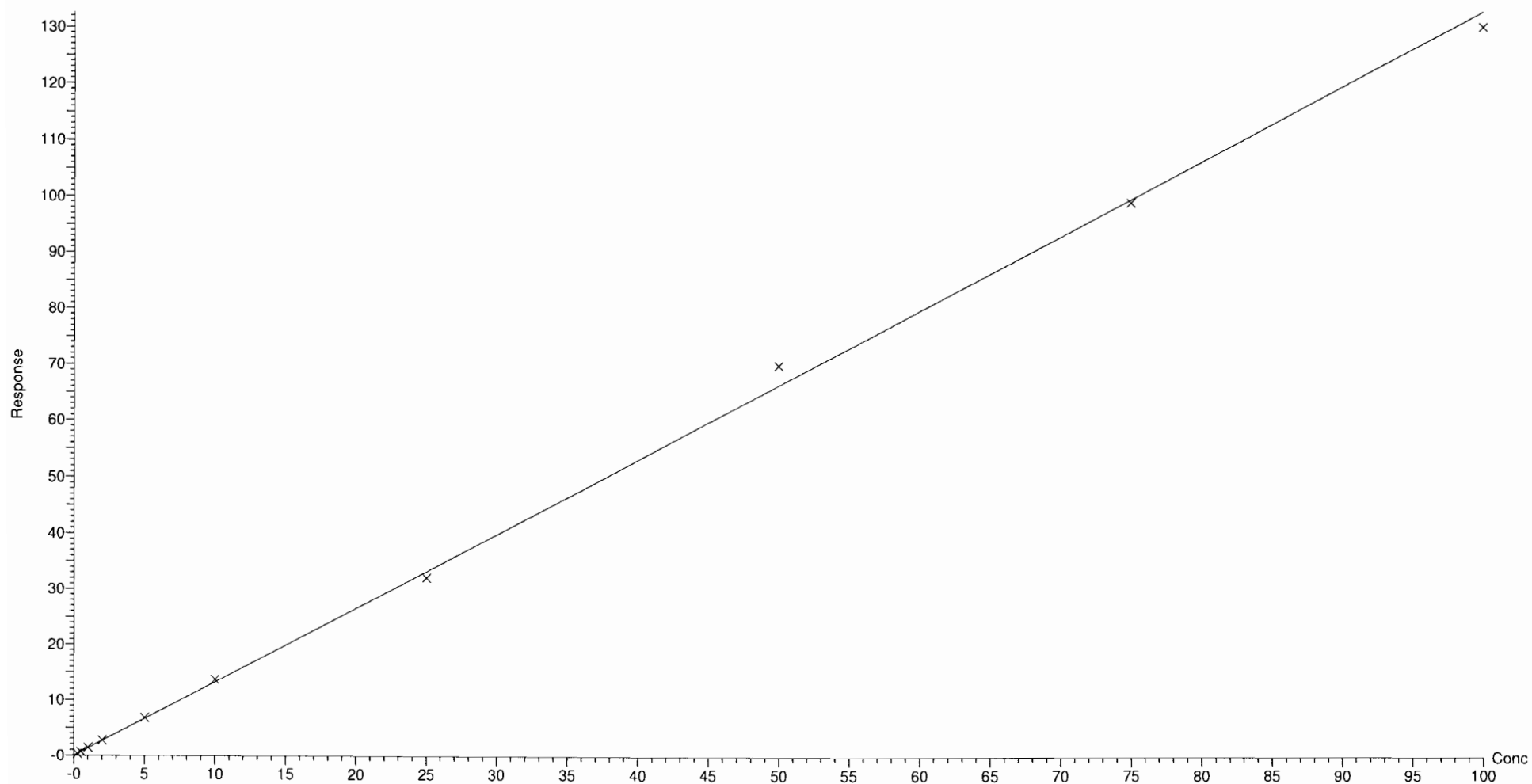
Compound name: PFTeDA

Coefficient of Determination:  $R^2 = 0.999100$

Calibration curve:  $1.32618 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None





Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:08:51 Pacific Standard Time

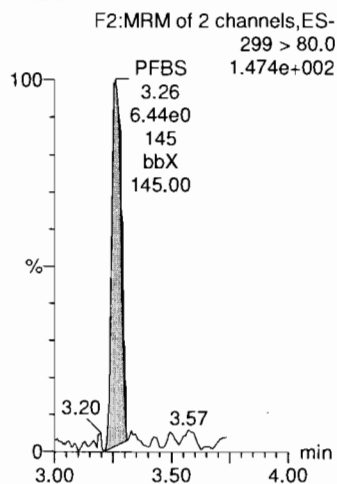
Printed: Saturday, December 15, 2018 10:11:10 Pacific Standard Time

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 15 Dec 2018 10:04:32

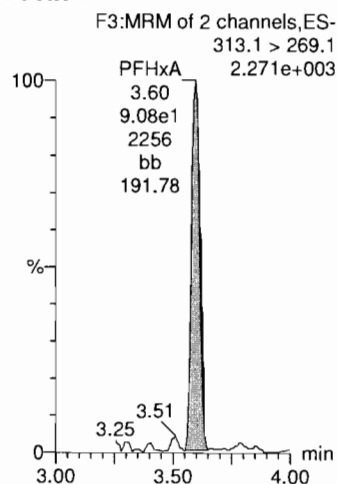
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_2, Date: 14-Dec-2018, Time: 12:26:47, ID: ST181214P2-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

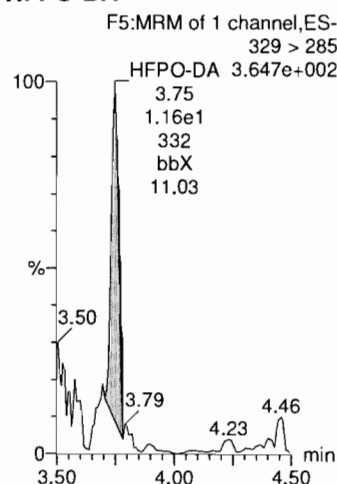
**PFBS**



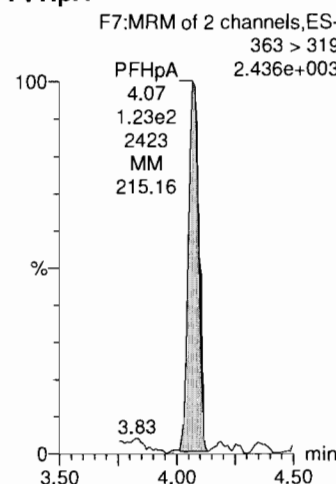
**PFHxA**



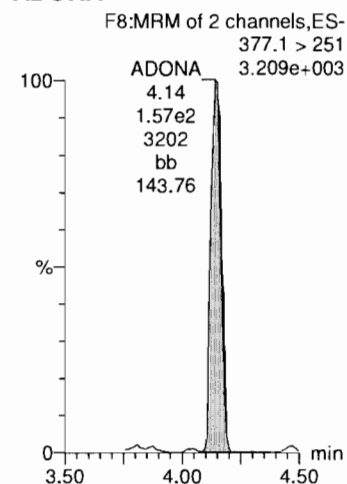
**HFPO-DA**



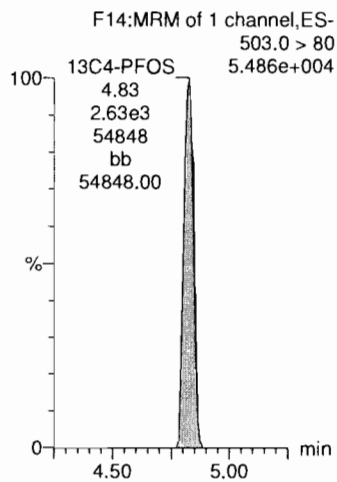
**PFHpA**



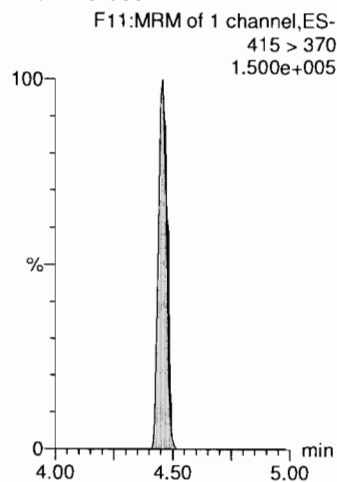
**ADONA**



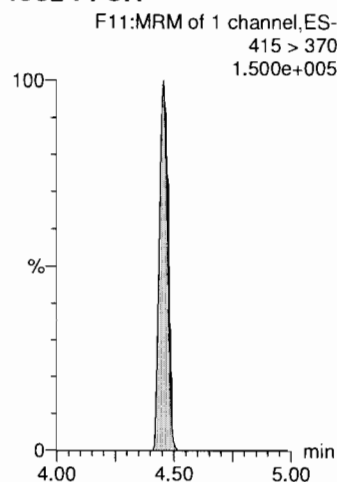
**13C4-PFOS**



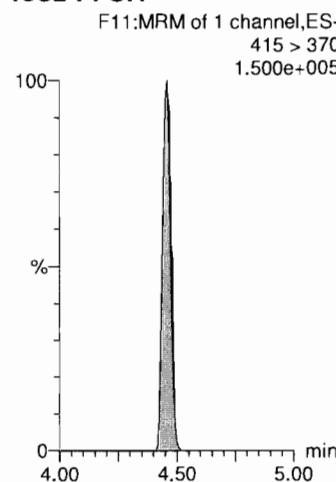
**13C2-PFOA**



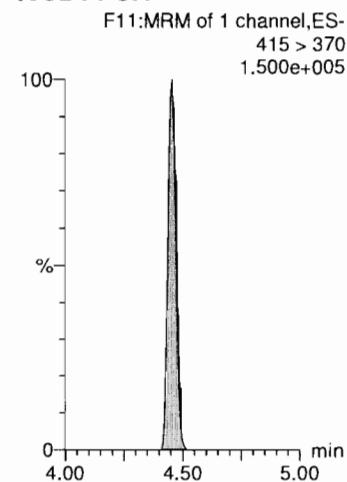
**13C2-PFOA**



**13C2-PFOA**



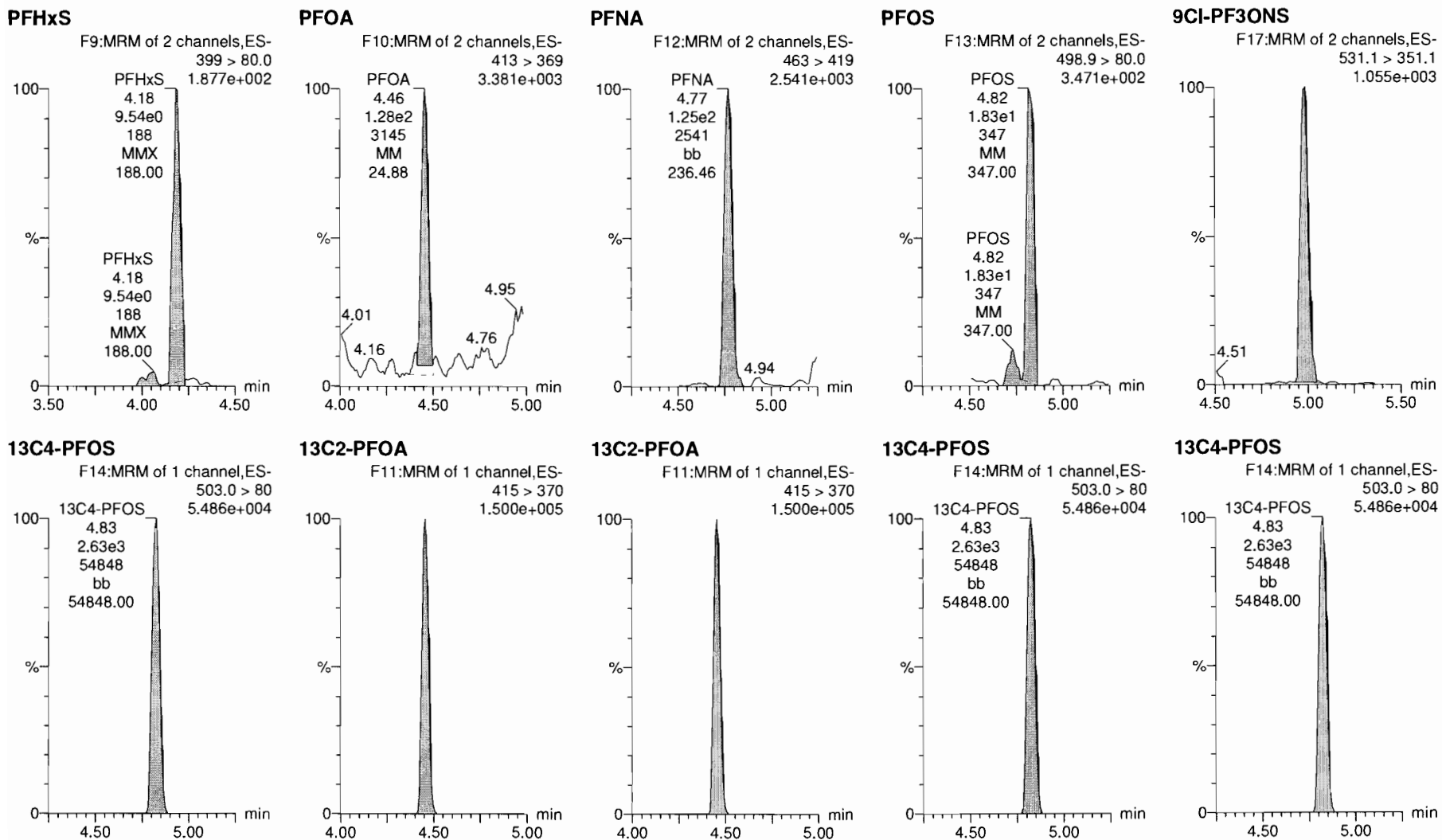
**13C2-PFOA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_2, Date: 14-Dec-2018, Time: 12:26:47, ID: ST181214P2-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

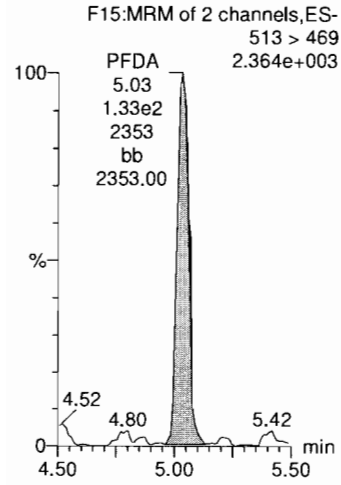


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

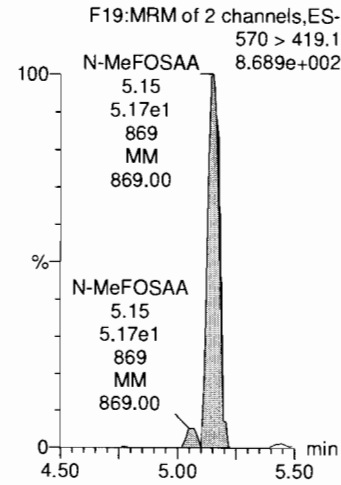
Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_2, Date: 14-Dec-2018, Time: 12:26:47, ID: ST181214P2-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

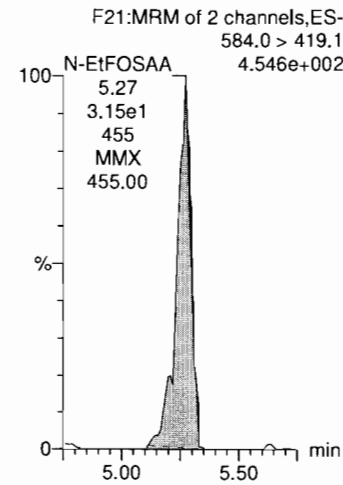
**PFDA**



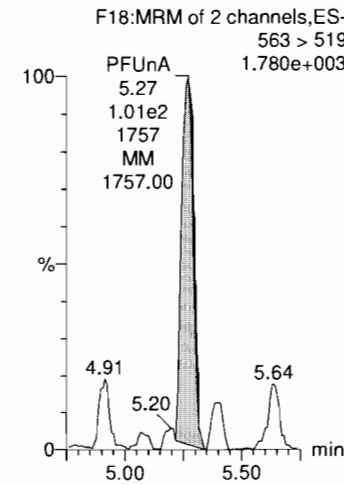
**N-MeFOSAA**



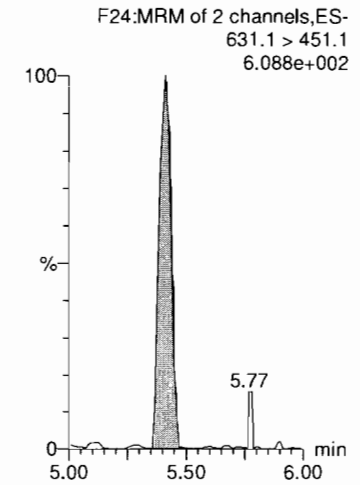
**N-EtFOSAA**



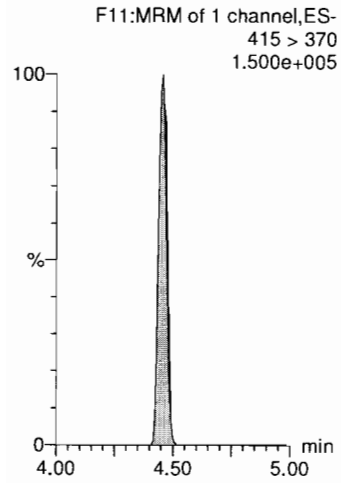
**PFUnA**



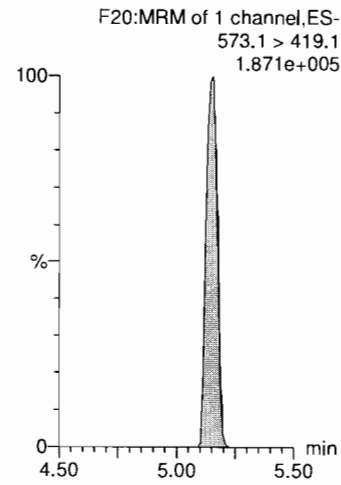
**11Cl-PF3OUdS**



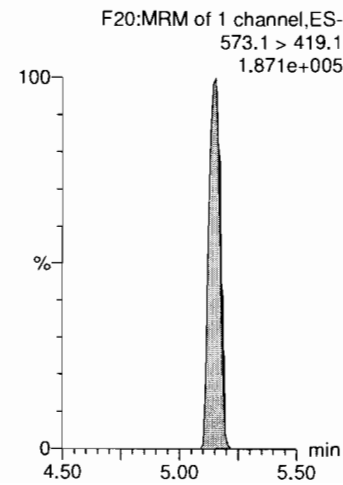
**13C2-PFOA**



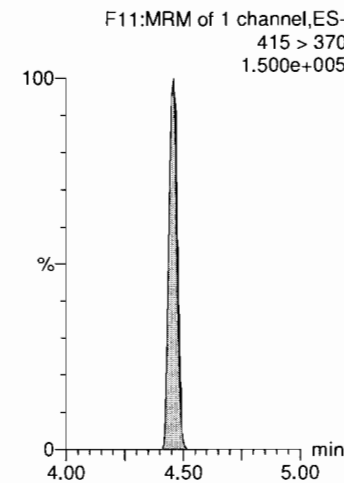
**d3-N-MeFOSAA**



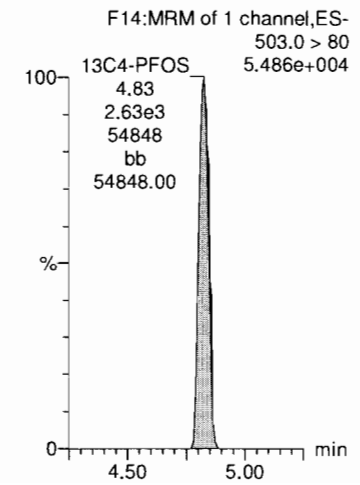
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**

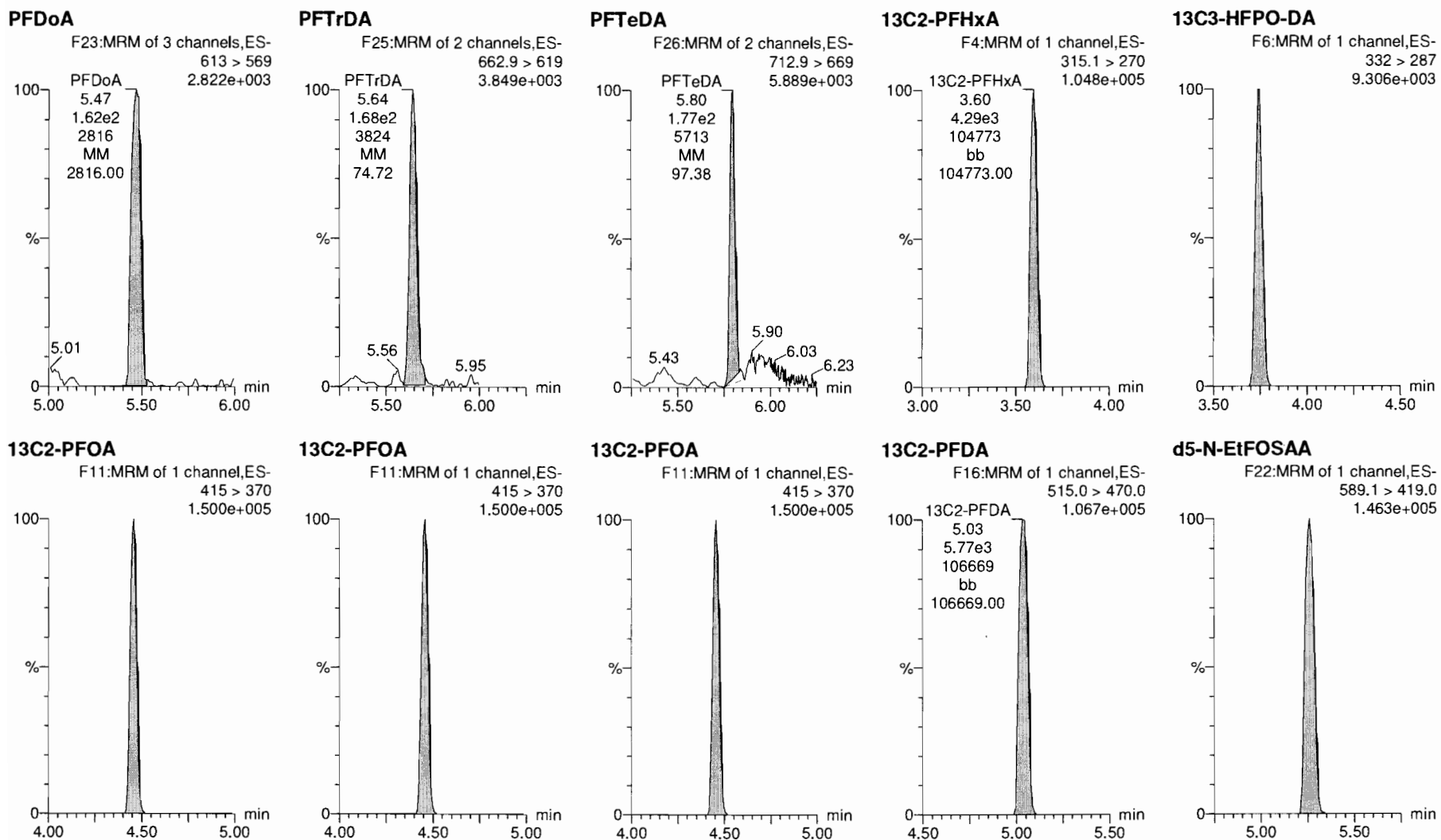


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_2, Date: 14-Dec-2018, Time: 12:26:47, ID: ST181214P2-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

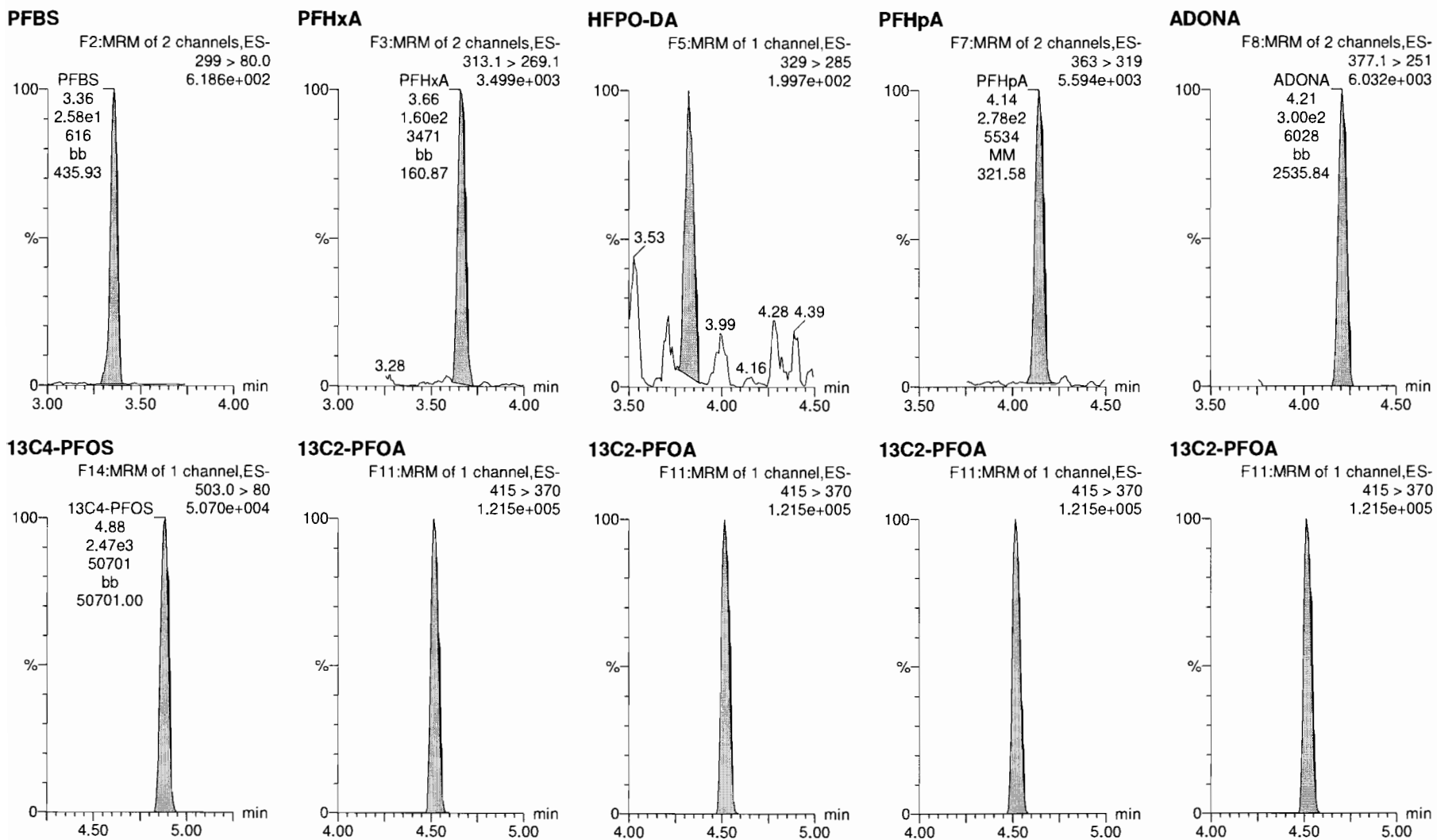


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_3, Date: 14-Dec-2018, Time: 12:37:57, ID: ST181214P2-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004



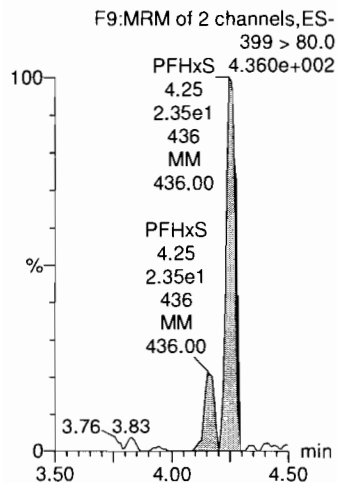
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

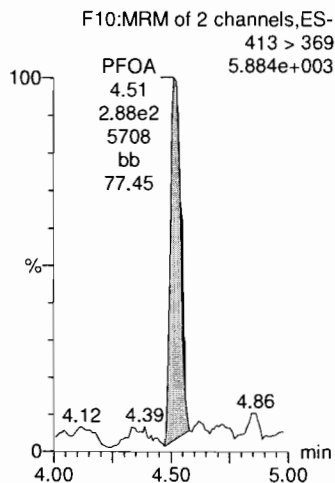
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_3, Date: 14-Dec-2018, Time: 12:37:57, ID: ST181214P2-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004

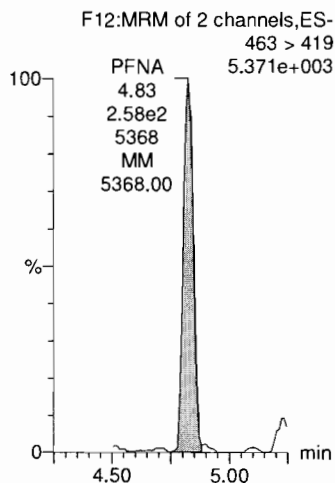
**PFHxS**



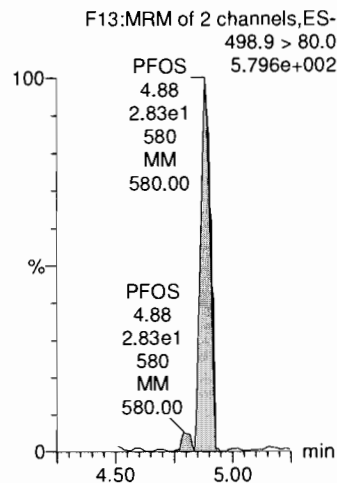
**PFOA**



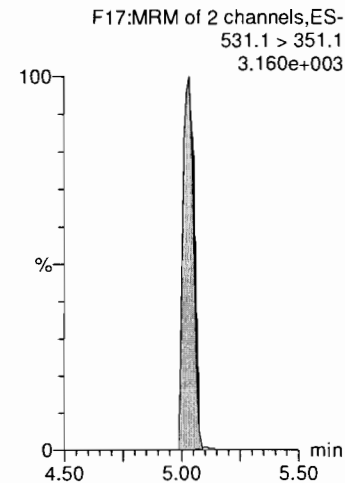
**PFNA**



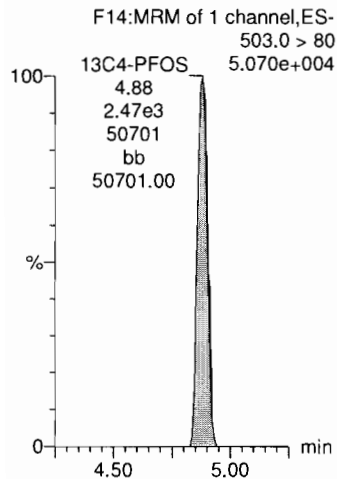
**PFOS**



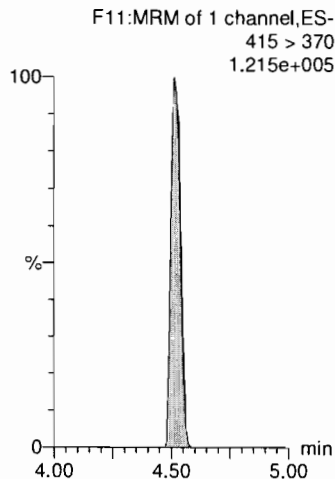
**9CI-PF3ONS**



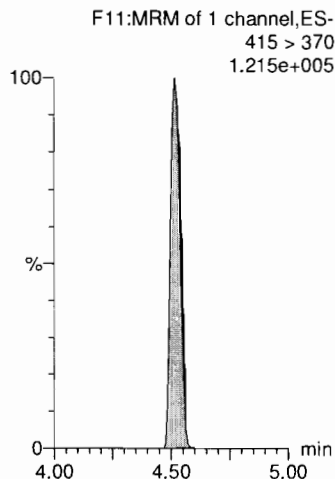
**13C4-PFOS**



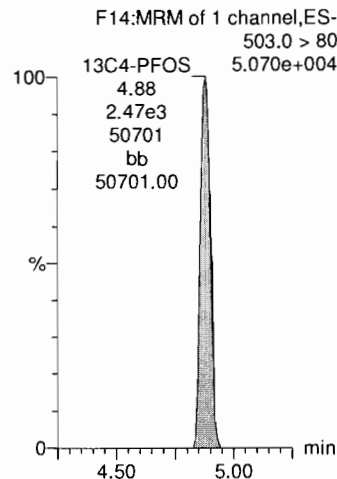
**13C2-PFOA**



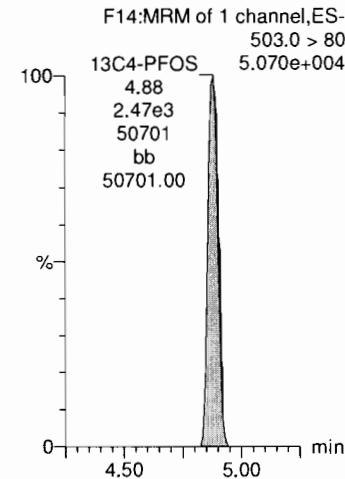
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**

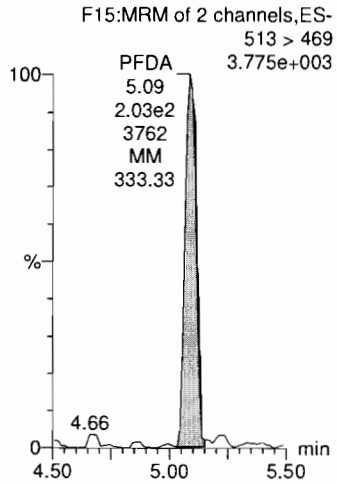


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

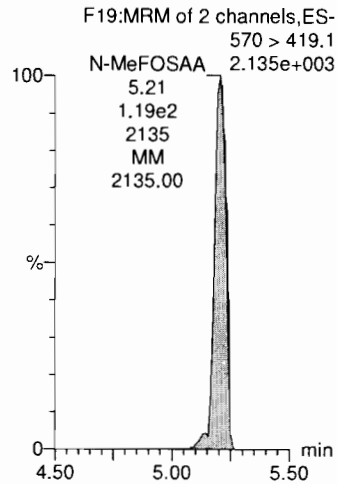
Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_3, Date: 14-Dec-2018, Time: 12:37:57, ID: ST181214P2-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004

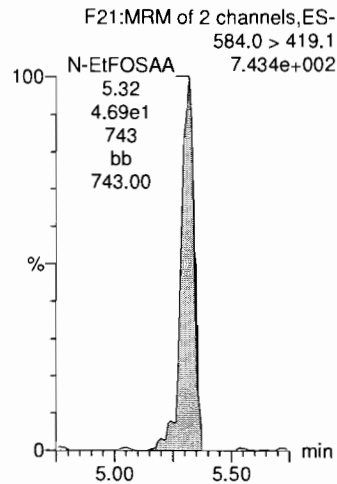
**PFDA**



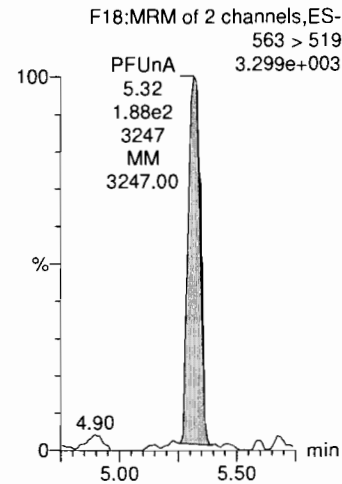
**N-MeFOSAA**



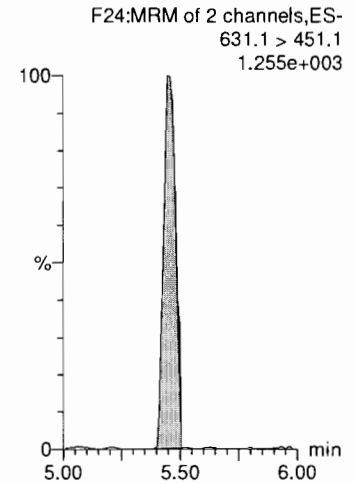
**N-EtFOSAA**



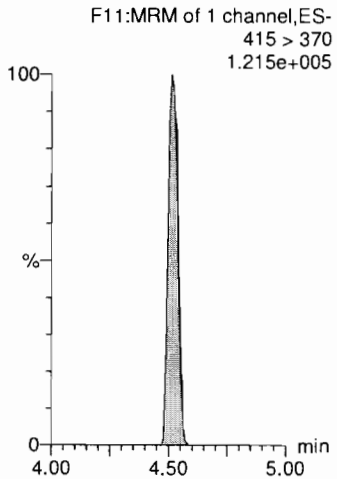
**PFUnA**



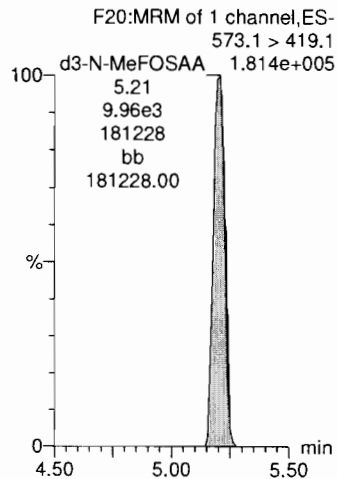
**11CI-PF3OUds**



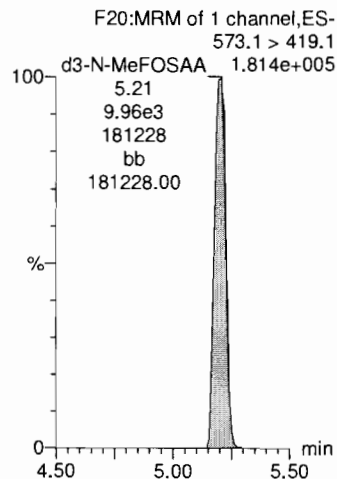
**13C2-PFOA**



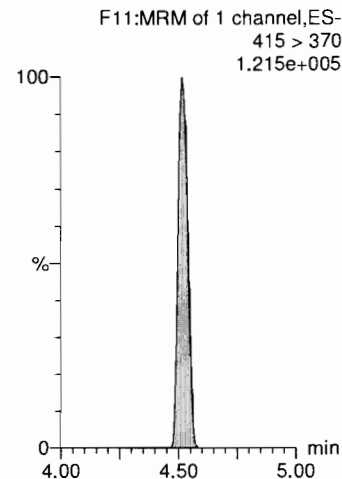
**d3-N-MeFOSAA**



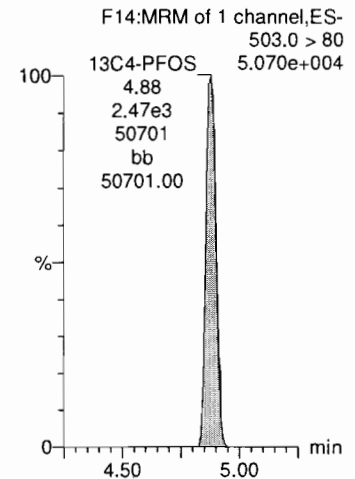
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



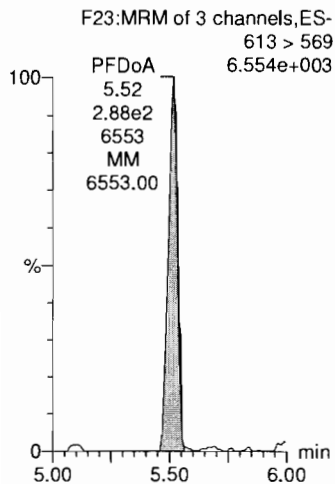
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

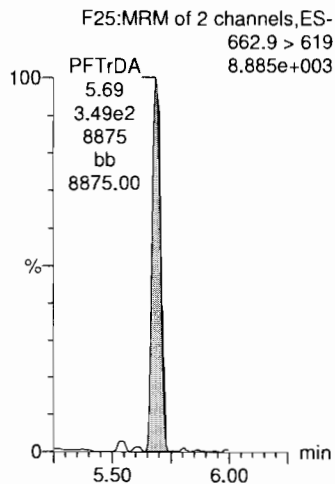
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_3, Date: 14-Dec-2018, Time: 12:37:57, ID: ST181214P2-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004

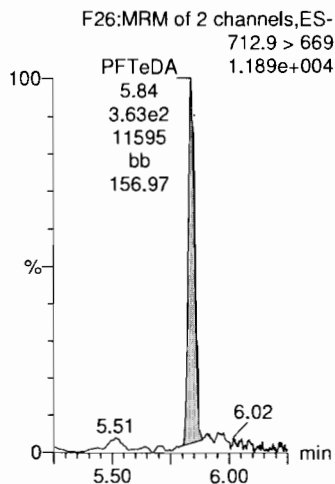
**PFDoA**



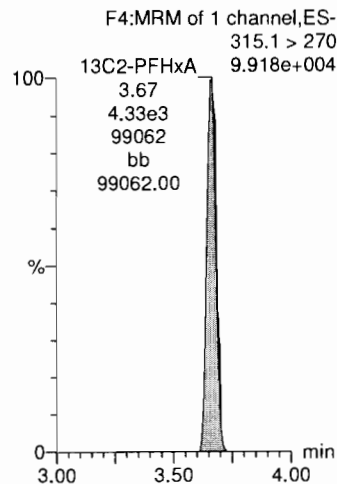
**PFTrDA**



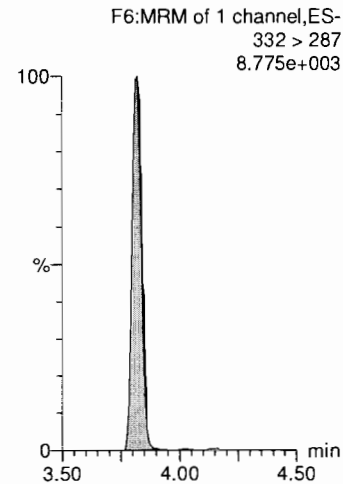
**PFTeDA**



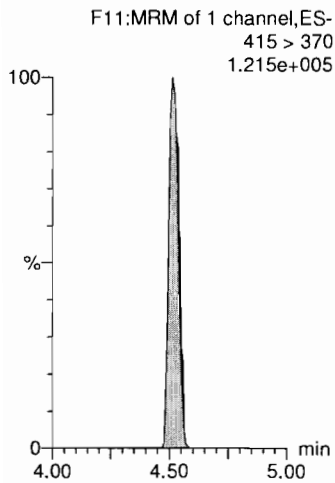
**13C2-PFHxA**



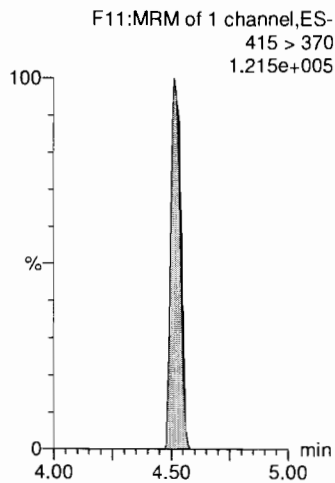
**13C3-HFPO-DA**



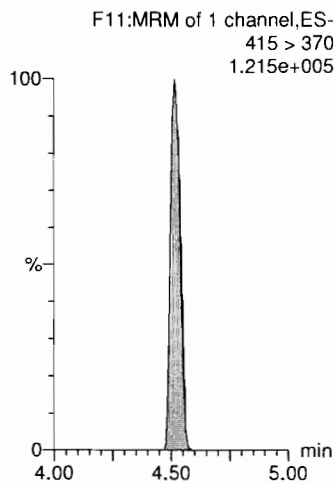
**13C2-PFOA**



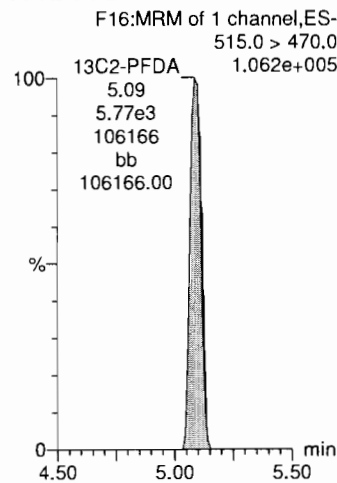
**13C2-PFOA**



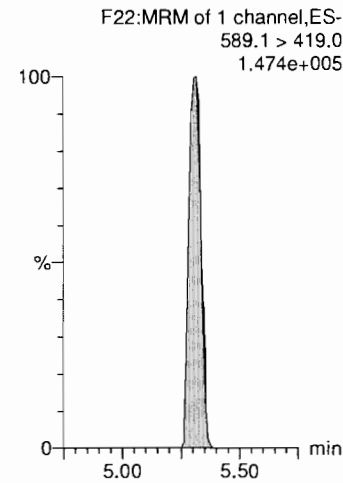
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**

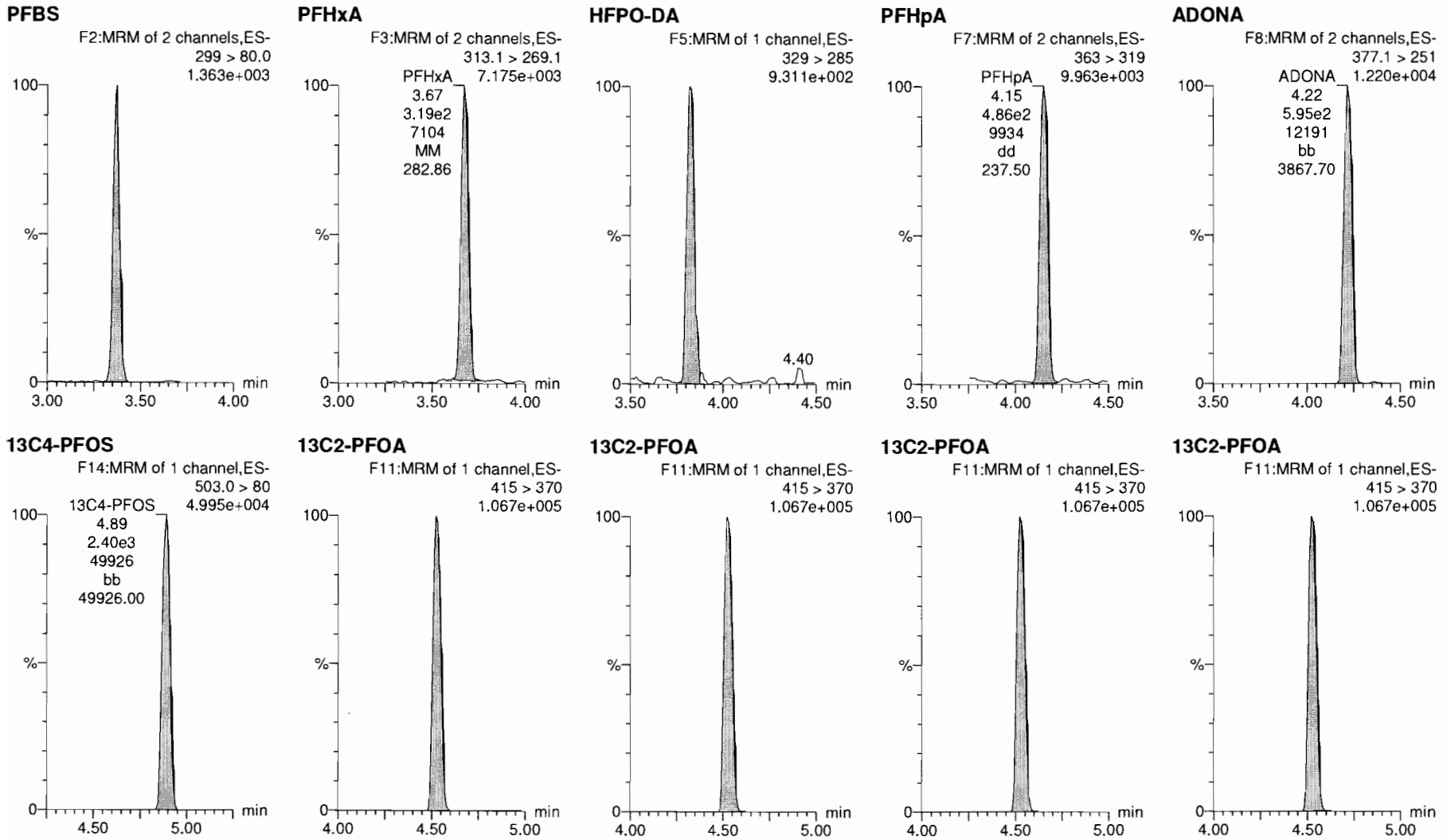




Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_4, Date: 14-Dec-2018, Time: 12:49:08, ID: ST181214P2-3 PFC CS-2 537 18L1005, Description: PFC CS-2 537 18L1005



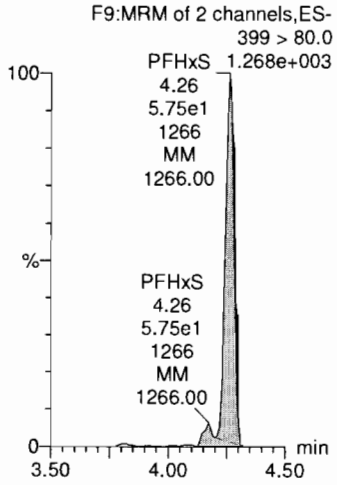
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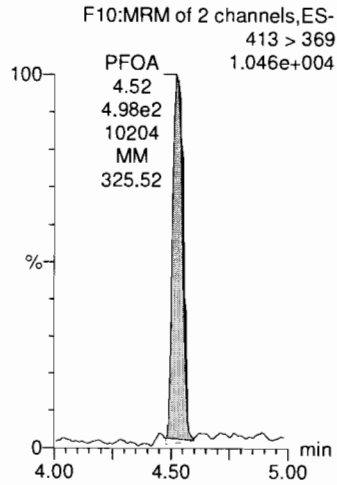
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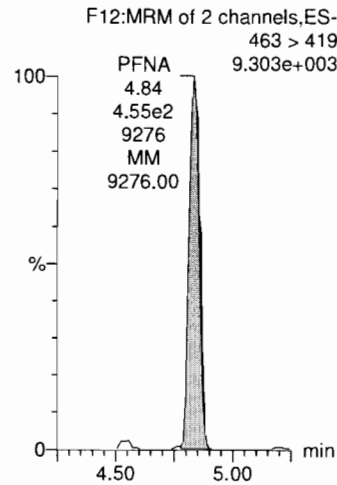
**PFHxS**



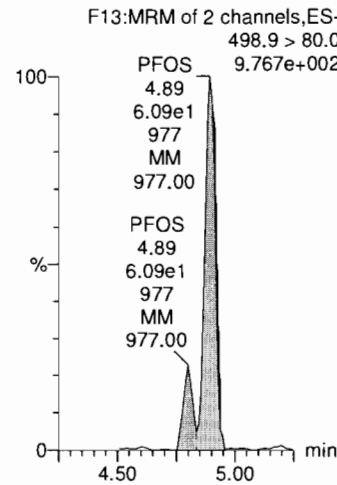
**PFOA**



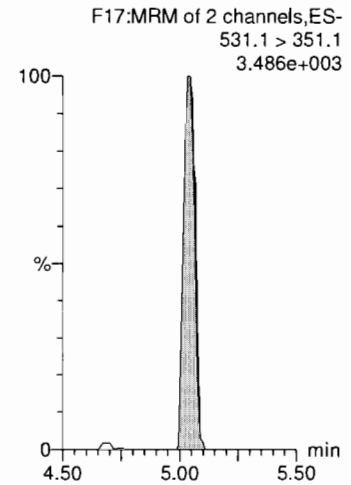
**PFNA**



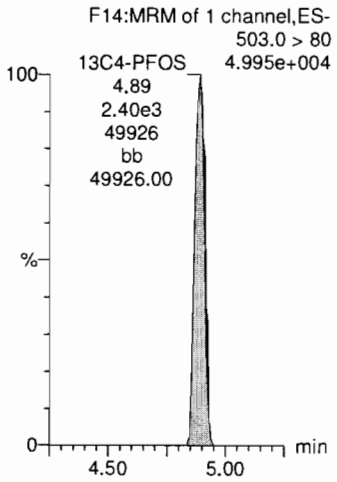
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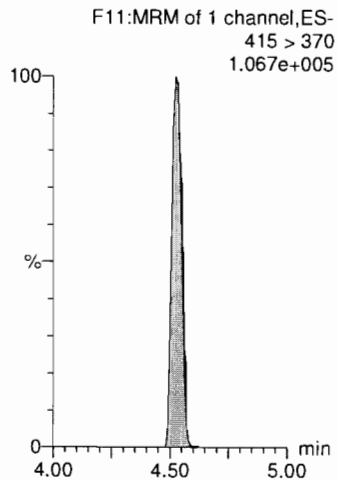
**9CI-PF3ONS**



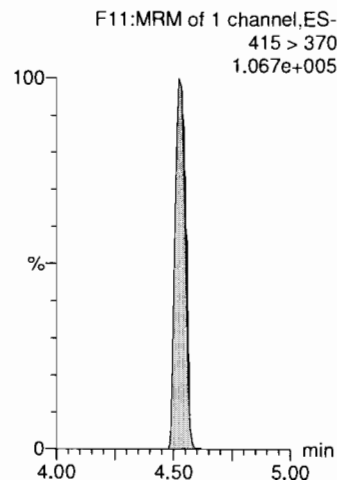
**13C4-PFOS**



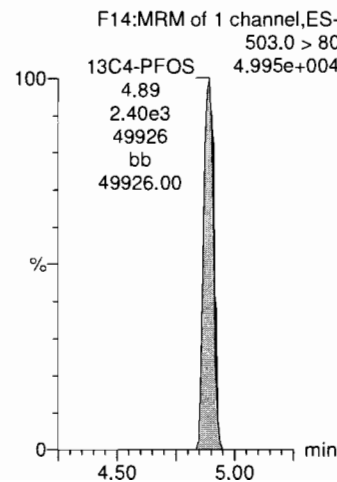
**13C2-PFOA**



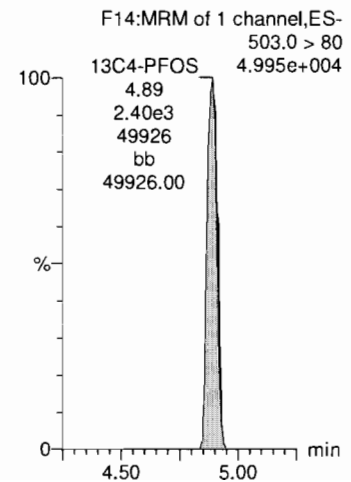
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**



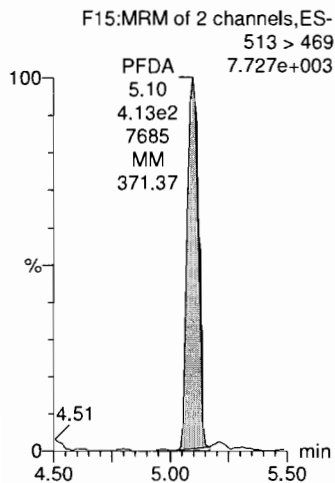
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

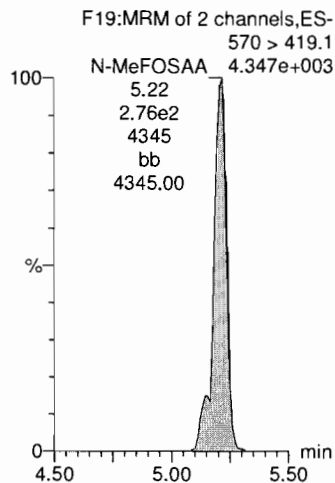
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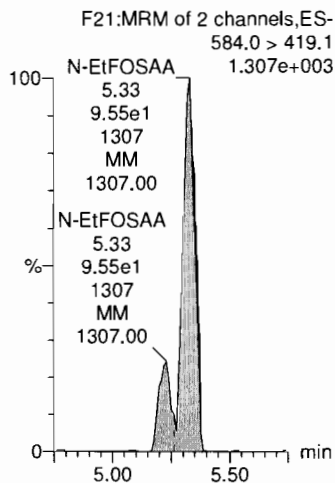
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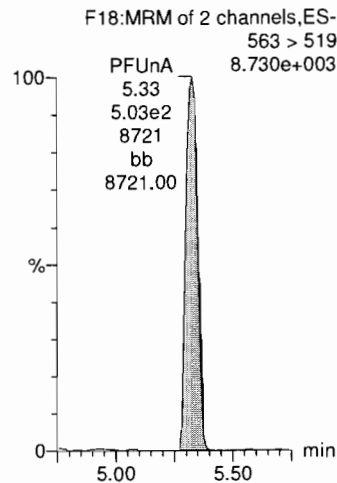
**N-MeFOSAA**



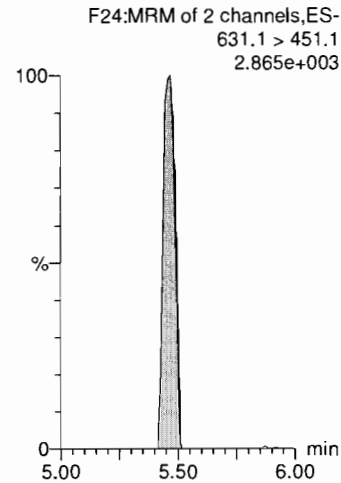
**N-EtFOSAA**



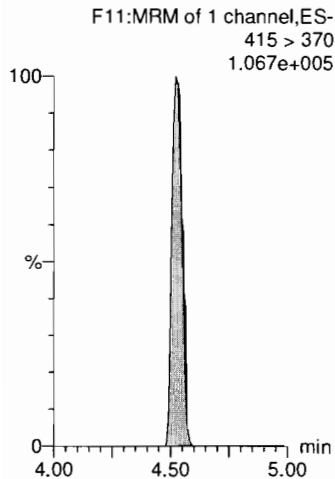
**PFUnA**



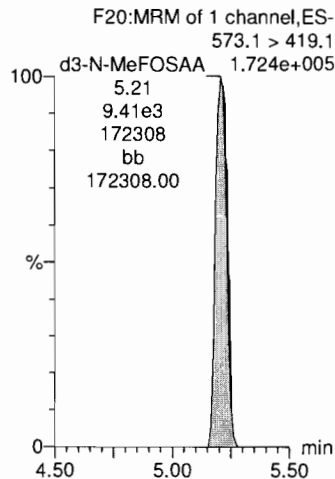
**11Cl-PF3OUdS**



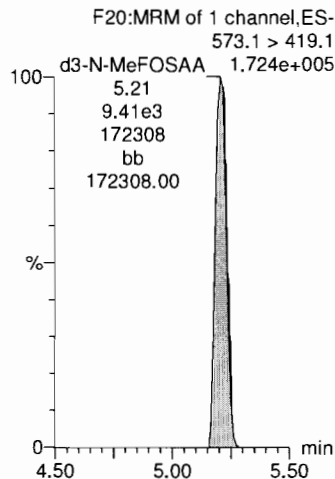
**13C2-PFOA**



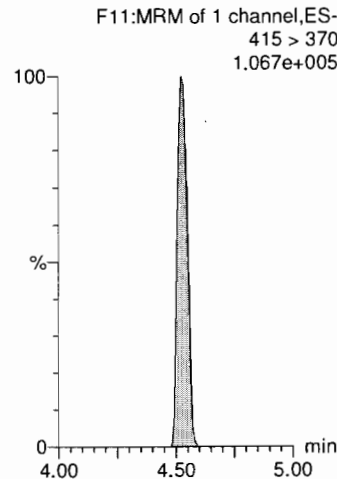
**d3-N-MeFOSAA**



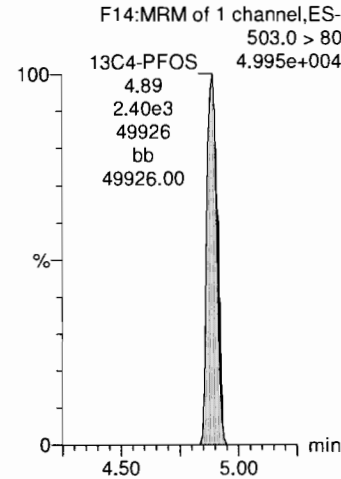
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**

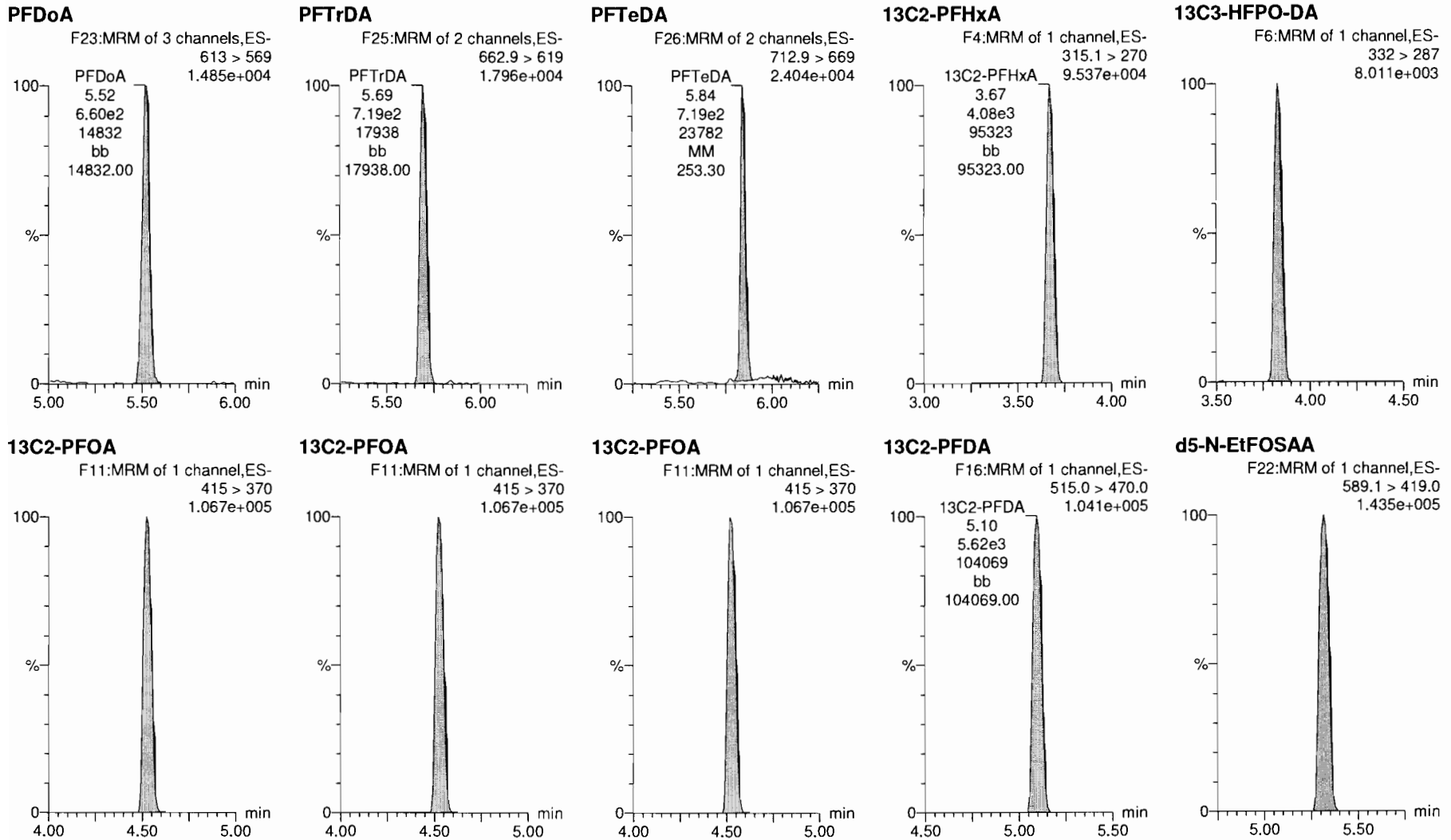


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Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_4, Date: 14-Dec-2018, Time: 12:49:08, ID: ST181214P2-3 PFC CS-2 537 18L1005, Description: PFC CS-2 537 18L1005

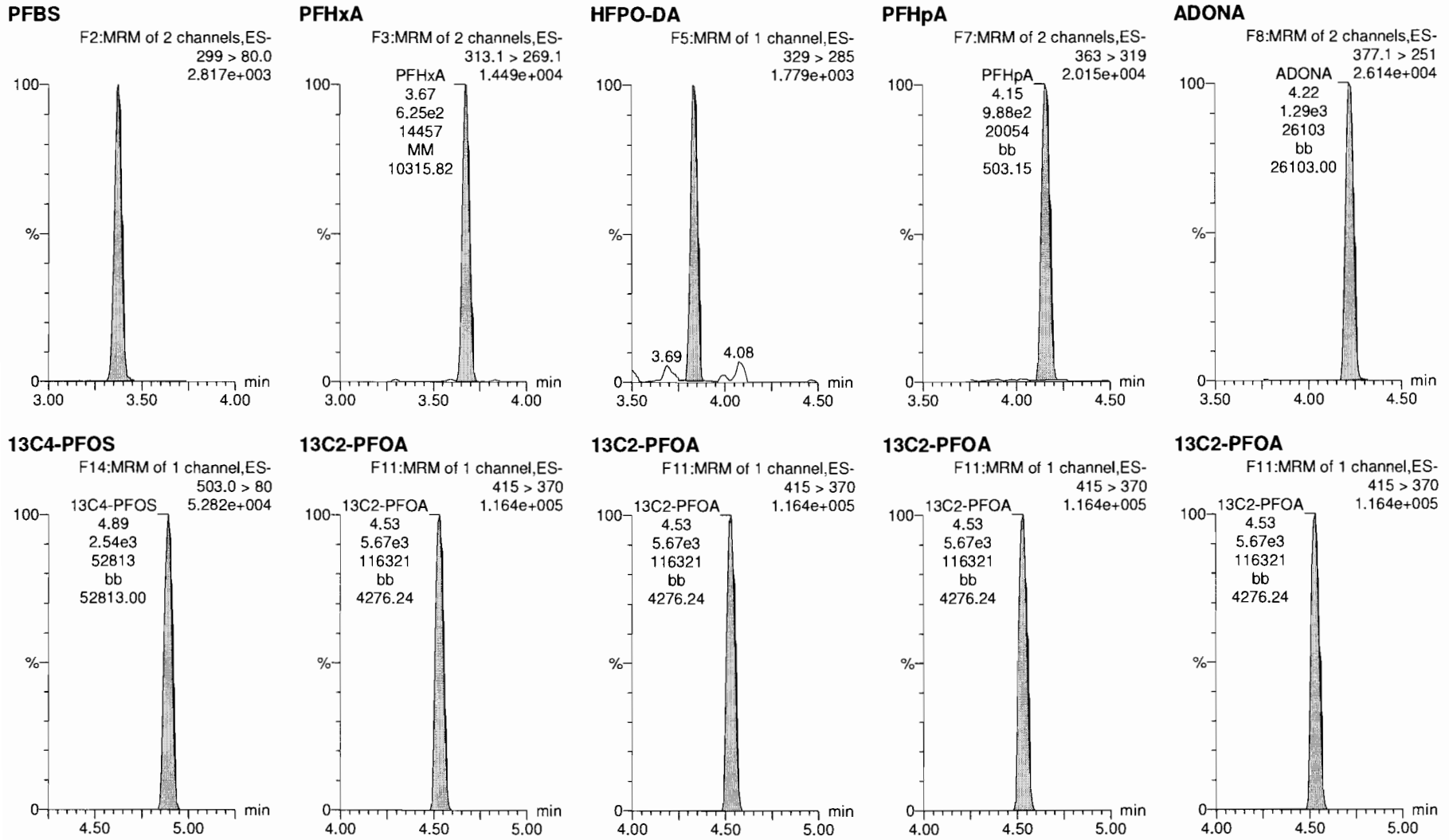


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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

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Name: 181214P2\_5, Date: 14-Dec-2018, Time: 13:00:27, ID: ST181214P2-4 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006



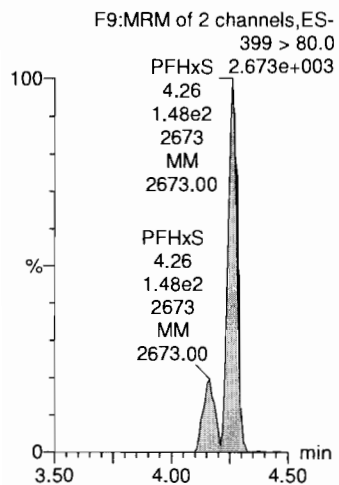
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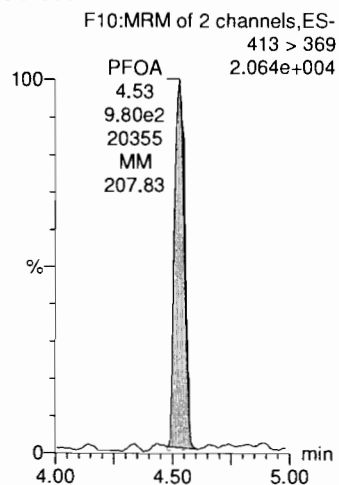
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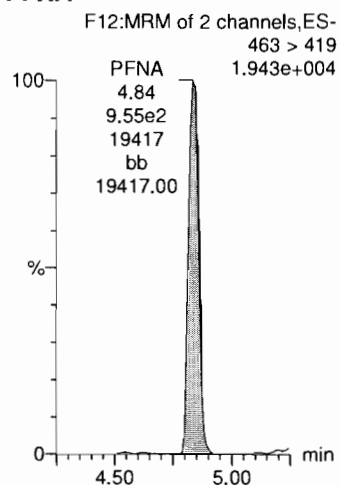
**PFHxS**



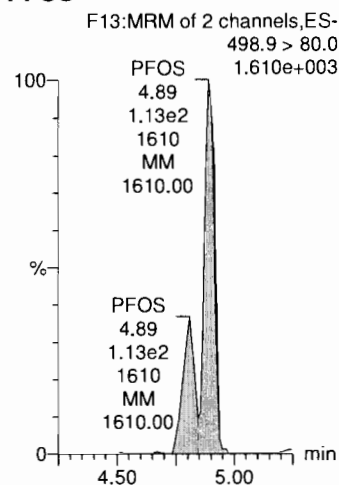
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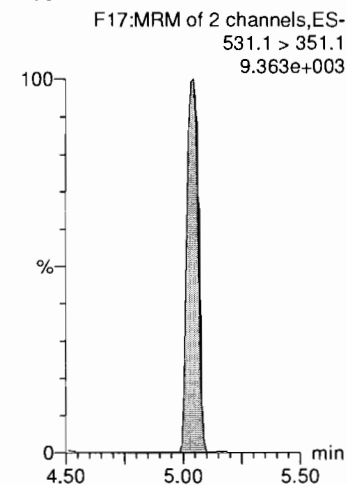
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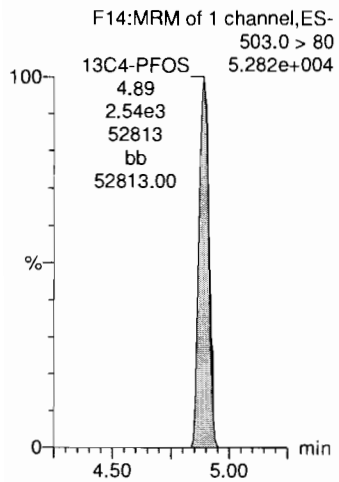
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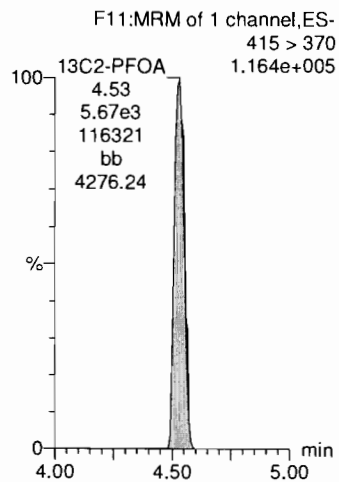
**9CI-PF3ONS**



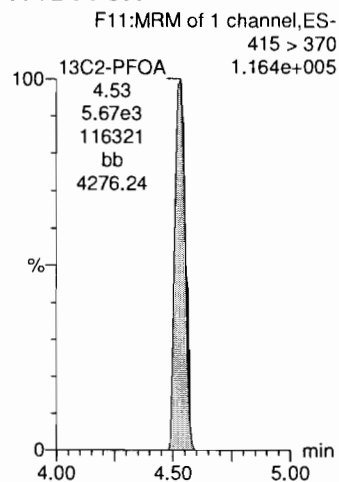
**13C4-PFOS**



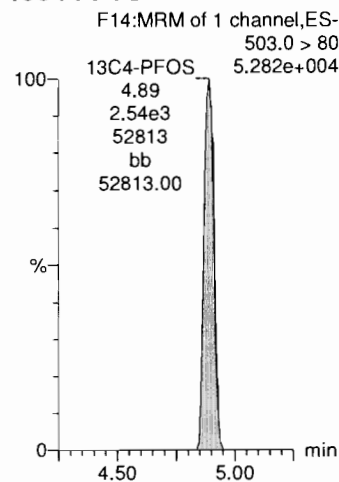
**13C2-PFOA**



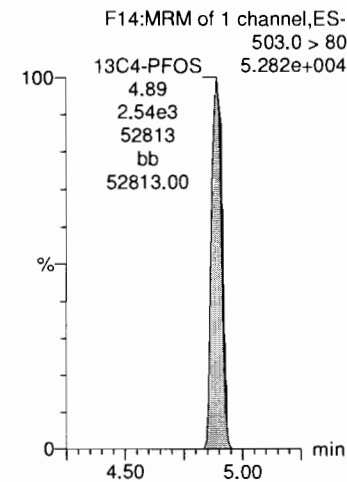
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**

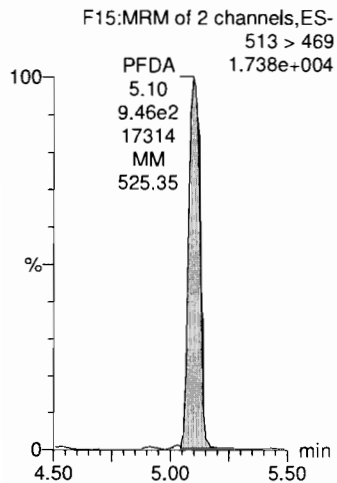


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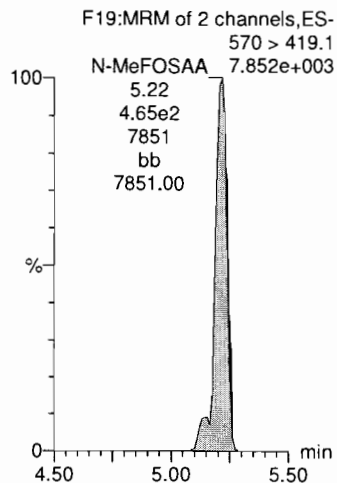
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Name: 181214P2\_5, Date: 14-Dec-2018, Time: 13:00:27, ID: ST181214P2-4 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

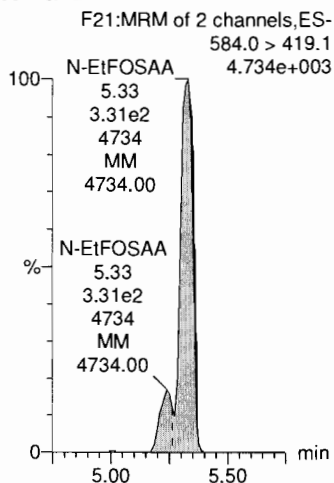
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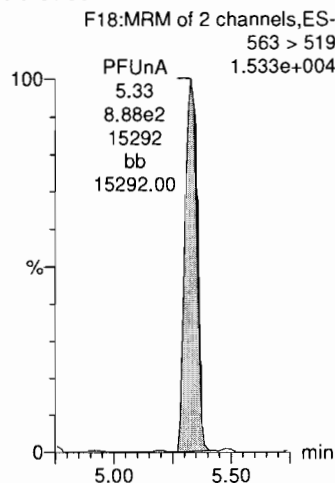
**N-MeFOSAA**



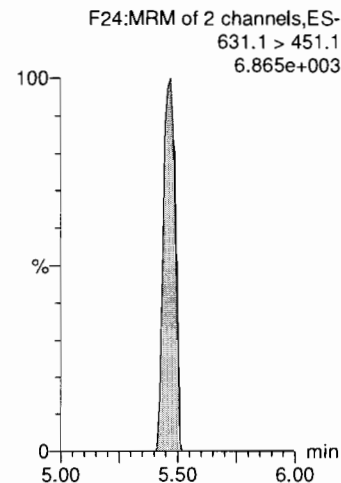
**N-EtFOSAA**



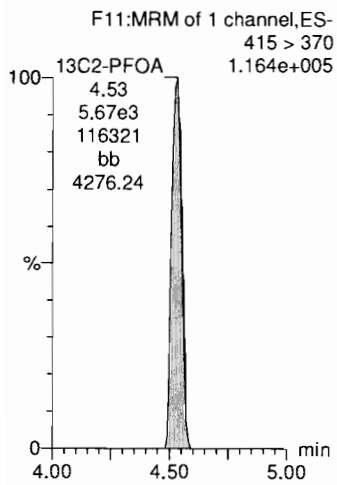
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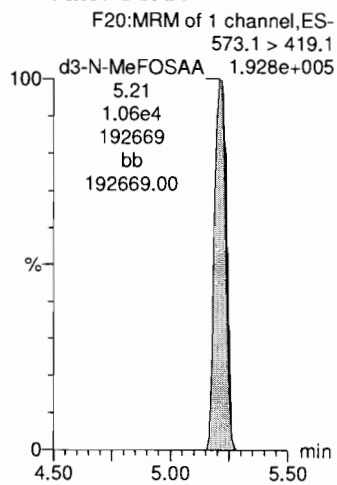
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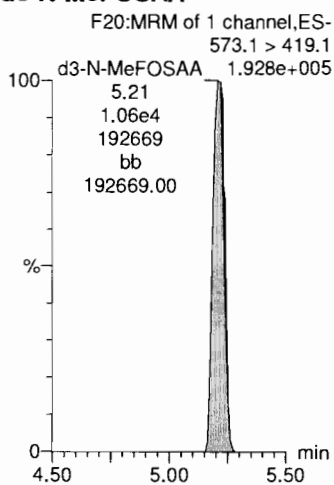
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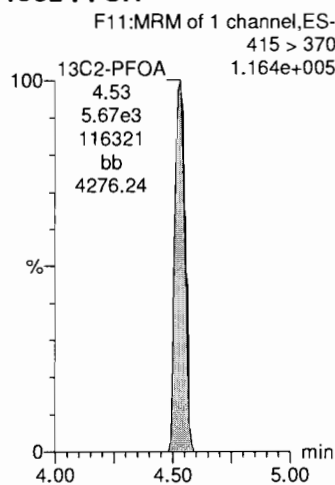
**d3-N-MeFOSAA**



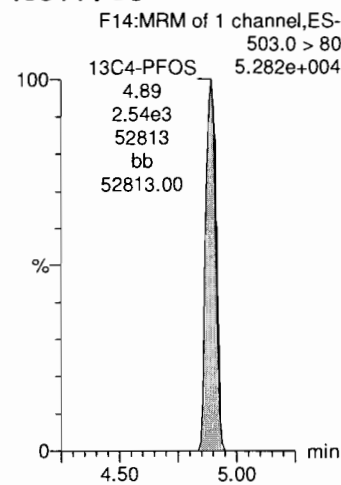
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



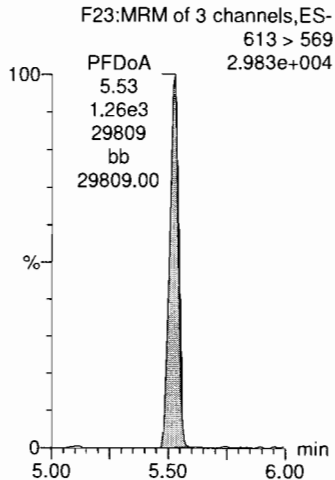
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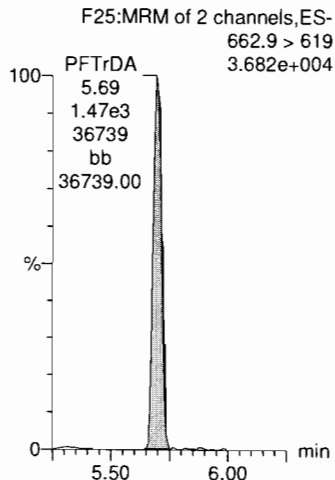
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Name: 181214P2\_5, Date: 14-Dec-2018, Time: 13:00:27, ID: ST181214P2-4 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

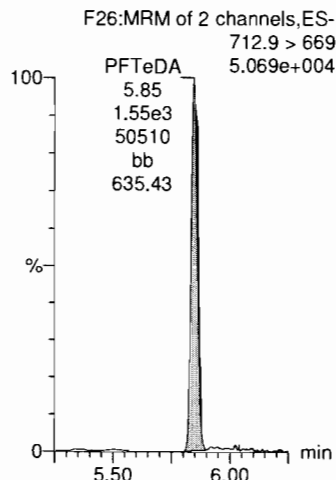
**PFDoA**



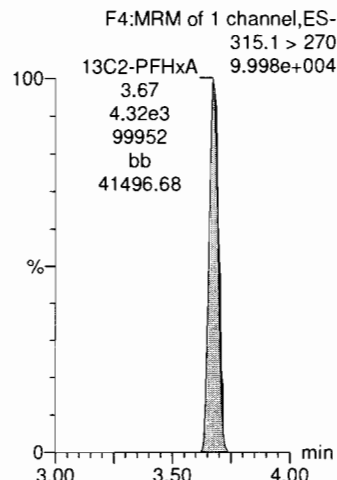
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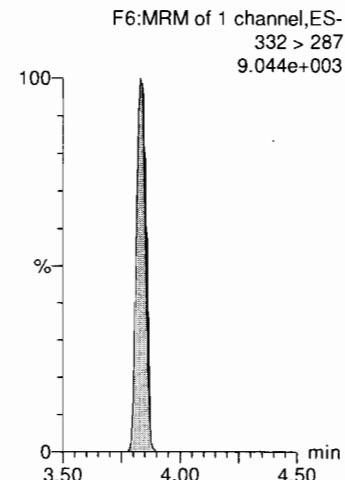
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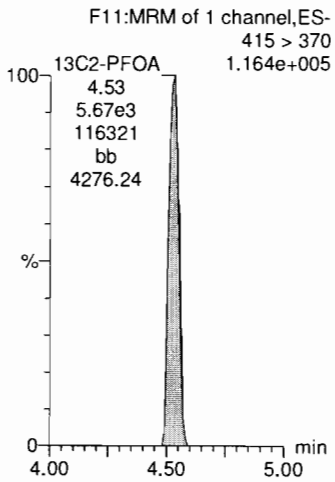
**13C2-PFHxA**



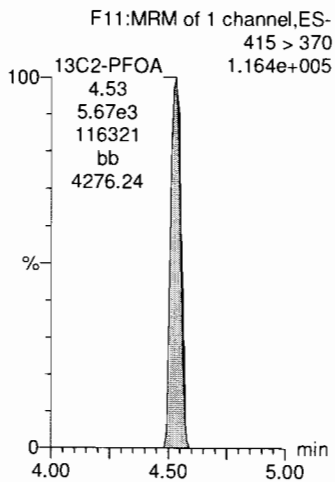
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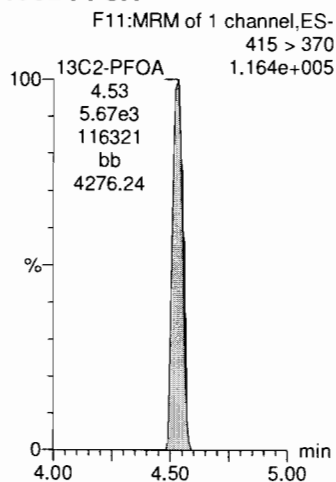
**13C2-PFOA**



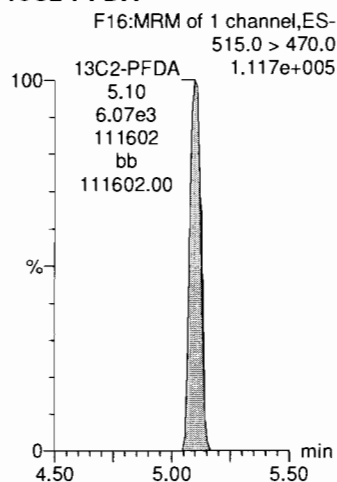
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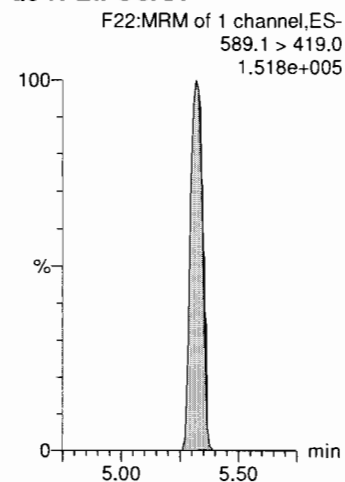
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**





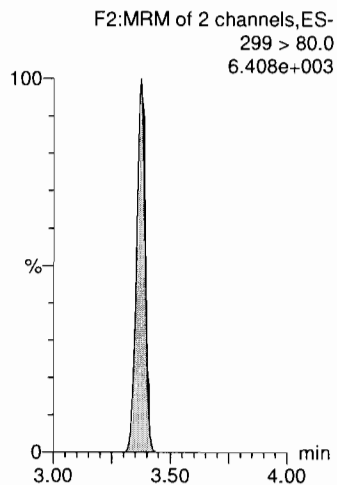
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

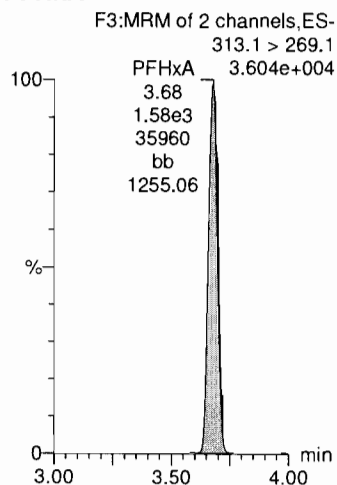
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Name: 181214P2\_6, Date: 14-Dec-2018, Time: 13:11:39, ID: ST181214P2-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007

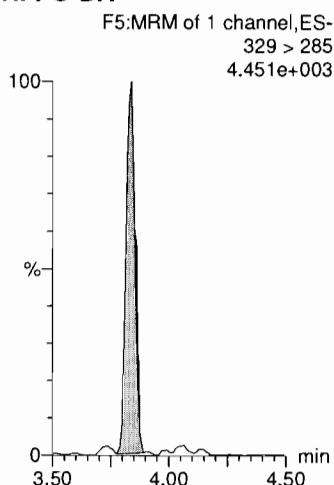
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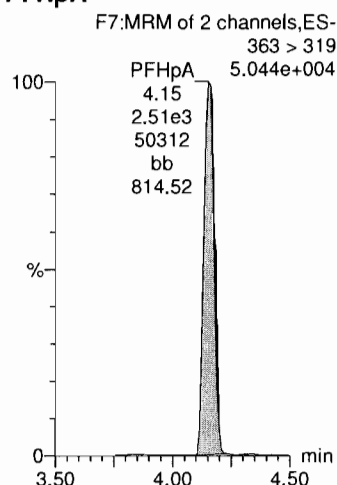
**PFHxA**



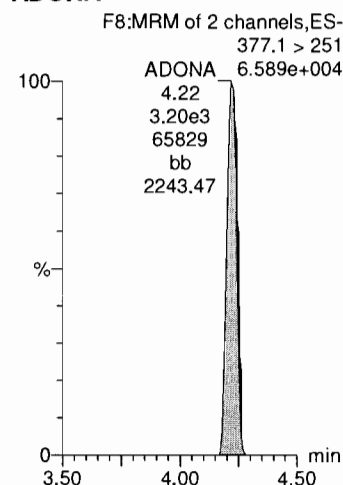
**HFPO-DA**



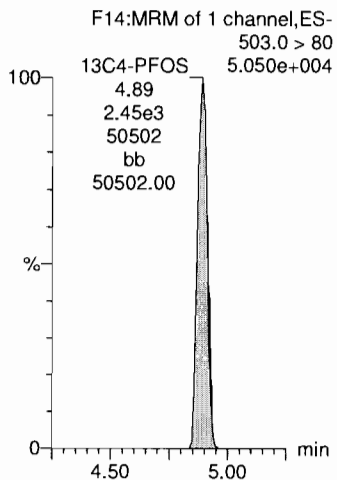
**PFHpA**



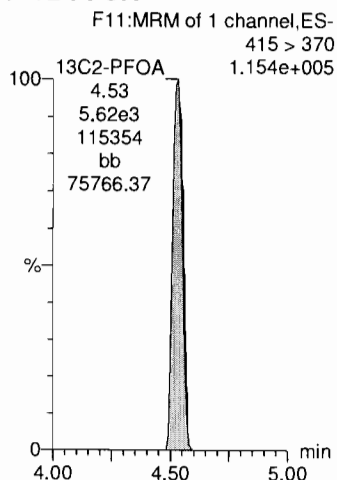
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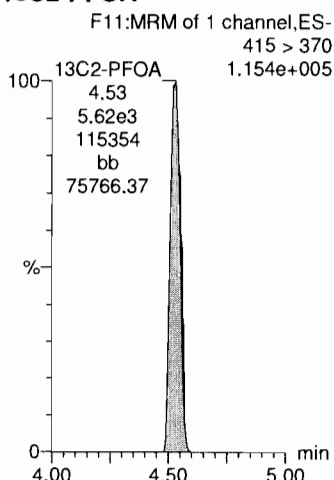
**13C4-PFOS**



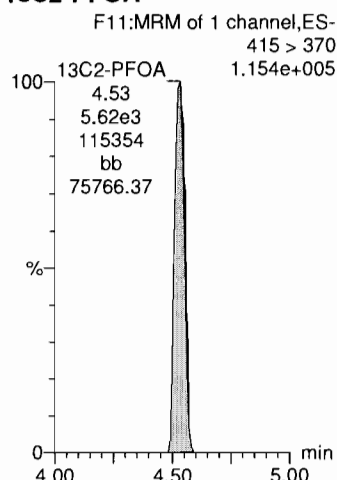
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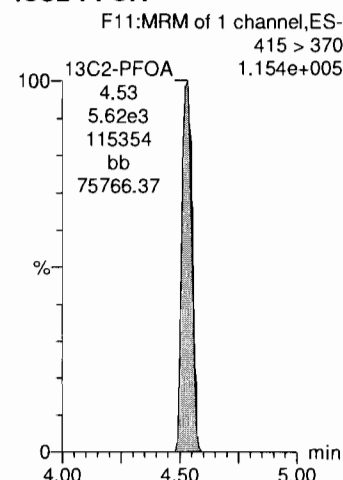
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**



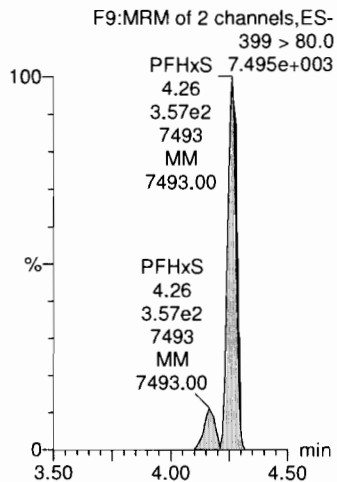
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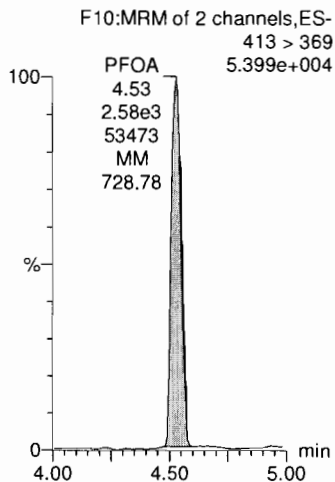
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Name: 181214P2\_6, Date: 14-Dec-2018, Time: 13:11:39, ID: ST181214P2-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007

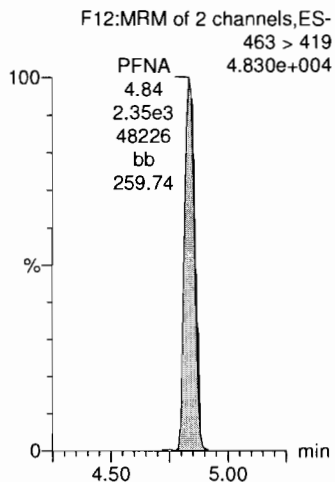
**PFHxS**



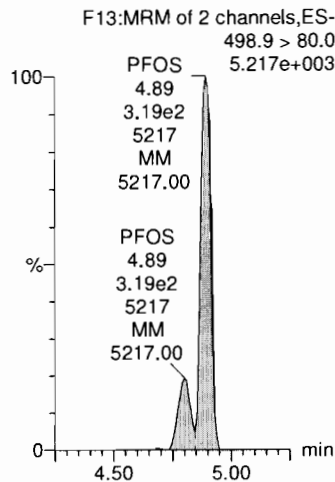
**PFOA**



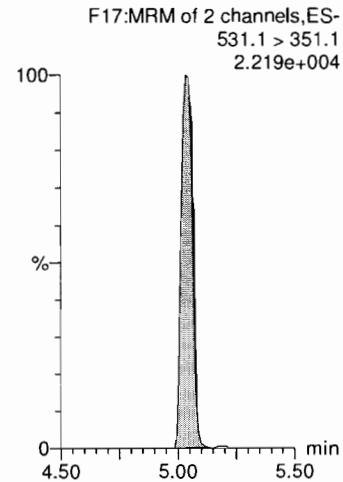
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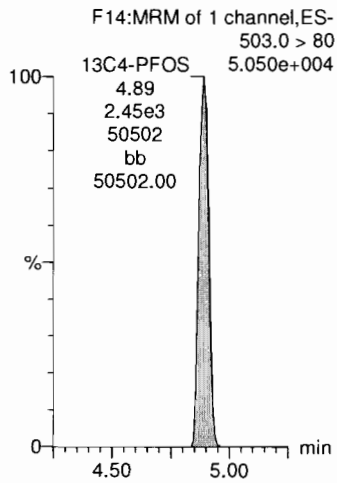
**PFOS**



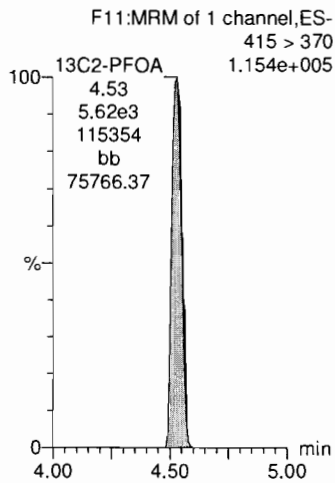
**9CI-PF3ONS**



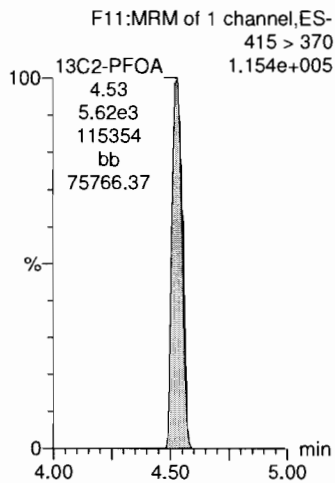
**13C4-PFOS**



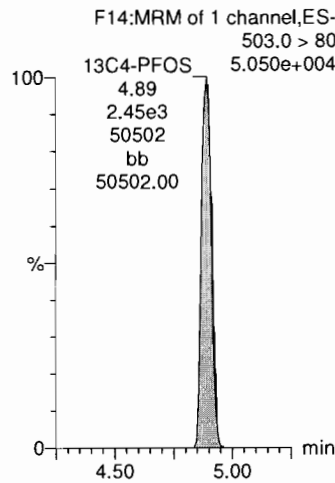
**13C2-PFOA**



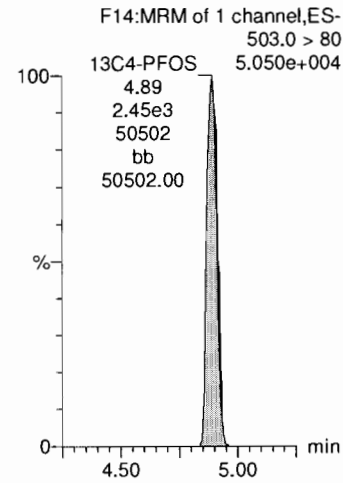
**13C2-PFOA**



**13C4-PFOS**



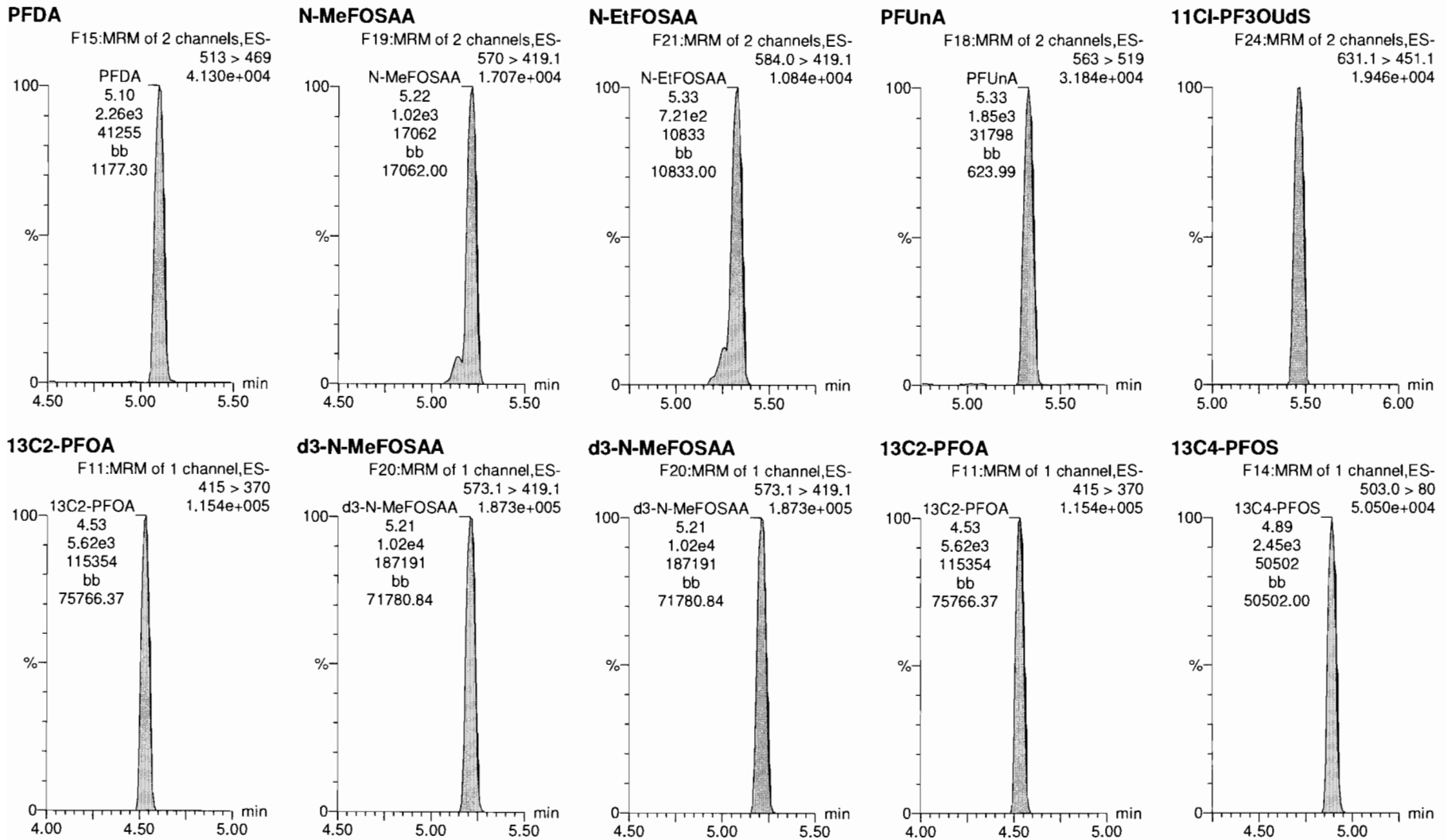
**13C4-PFOS**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

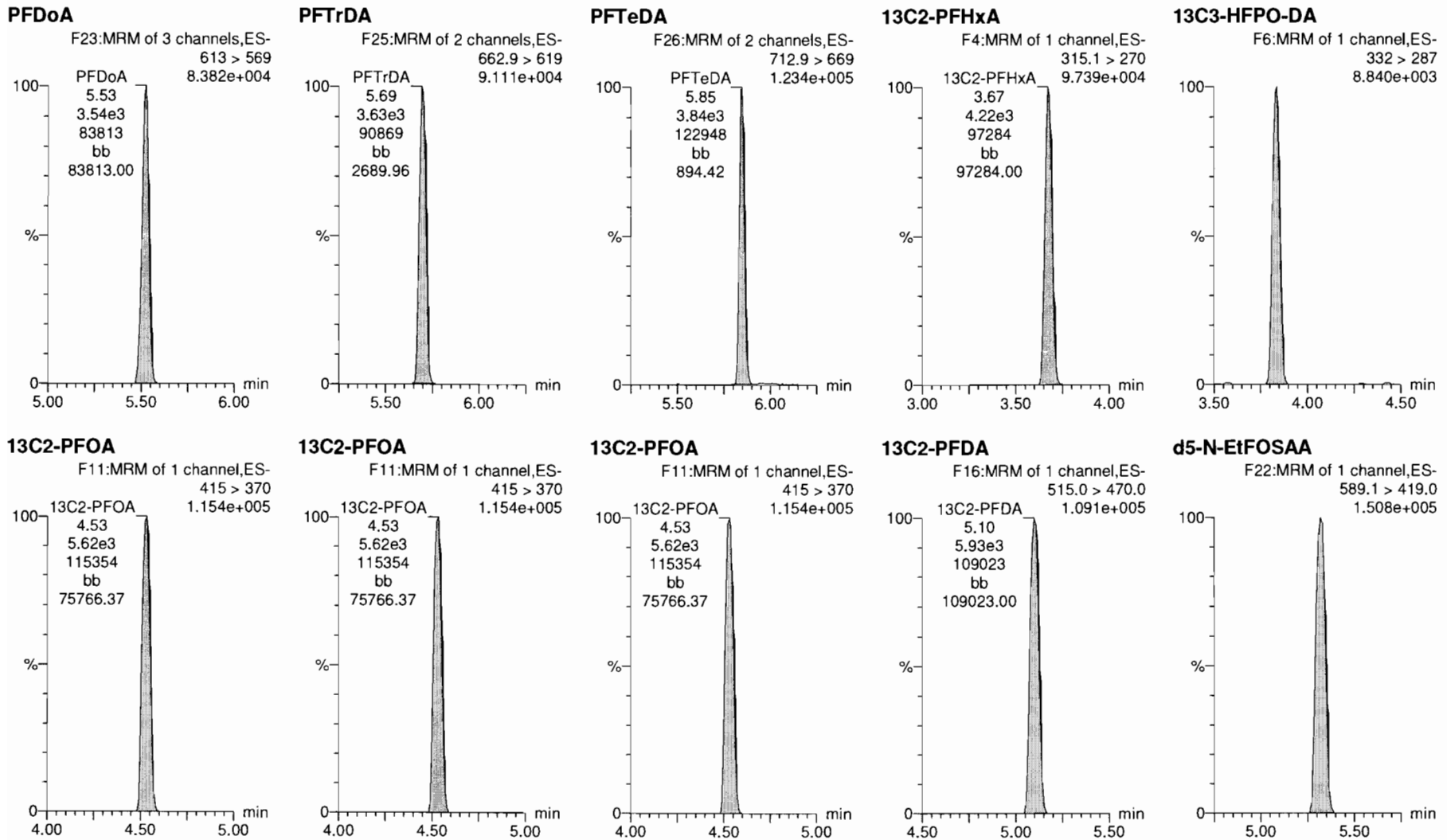
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Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_6, Date: 14-Dec-2018, Time: 13:11:39, ID: ST181214P2-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007



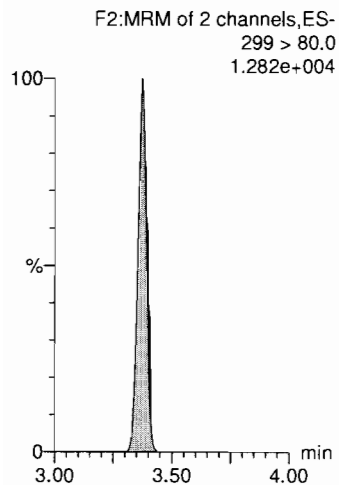
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

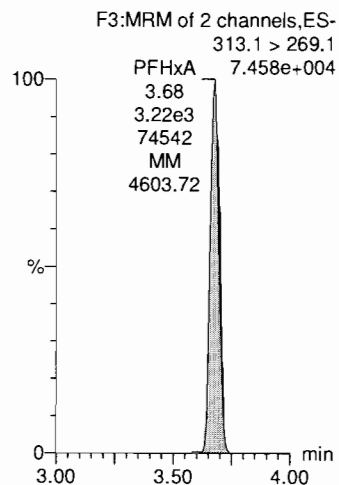
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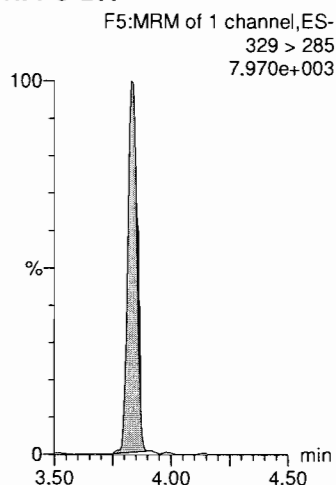
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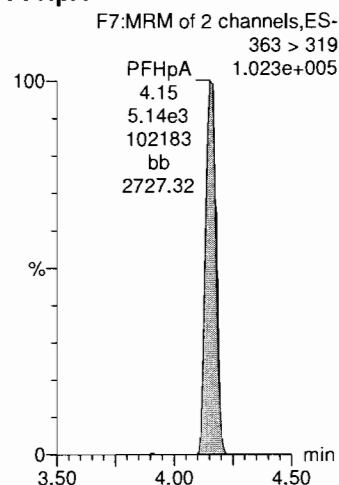
**PFHxA**



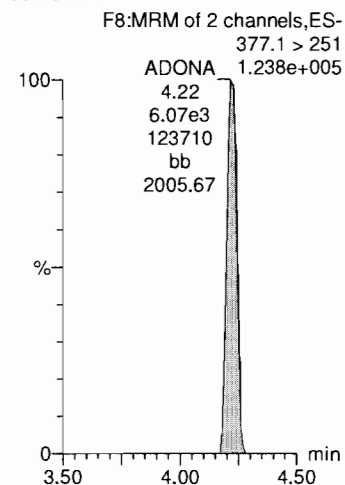
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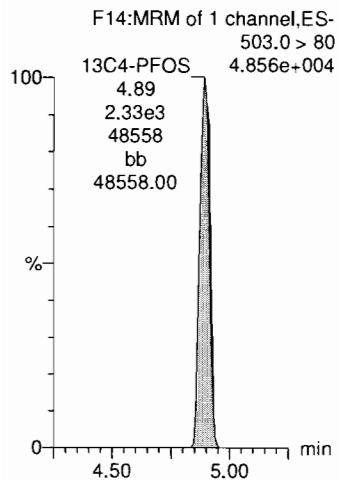
**PFHpA**



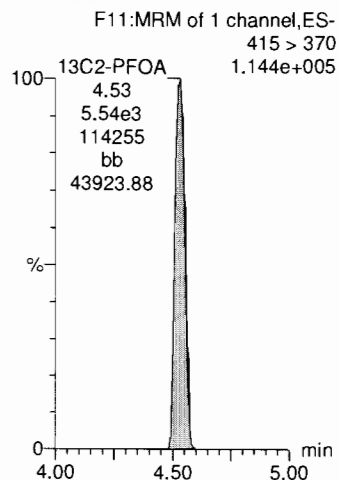
**ADONA**



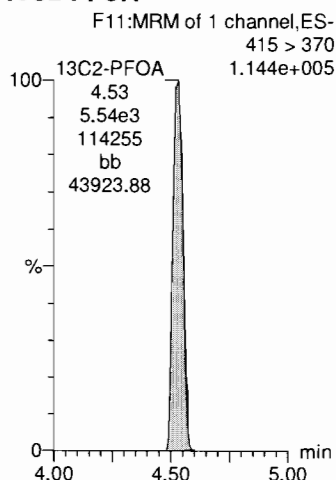
**13C4-PFOS**



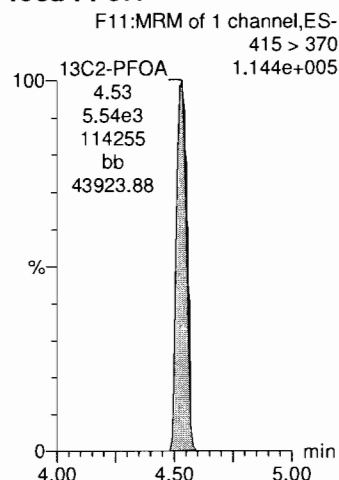
**13C2-PFOA**



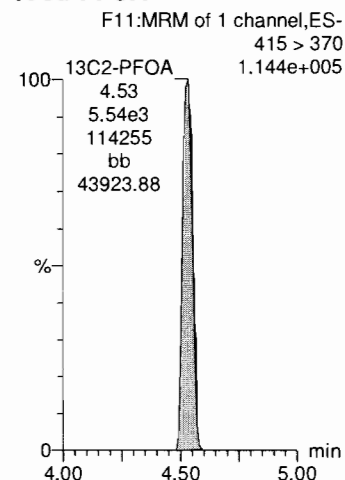
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**



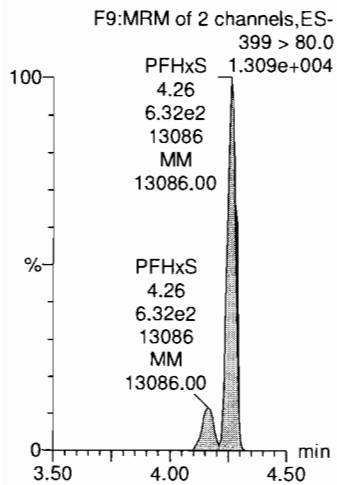
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

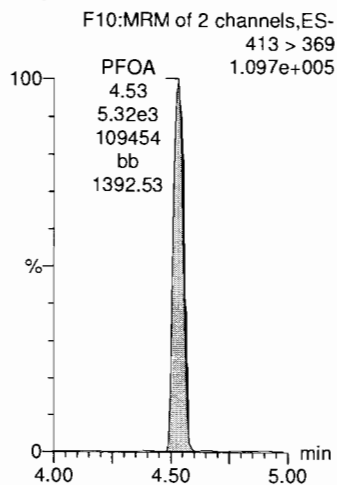
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Name: 181214P2\_7, Date: 14-Dec-2018, Time: 13:22:50, ID: ST181214P2-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

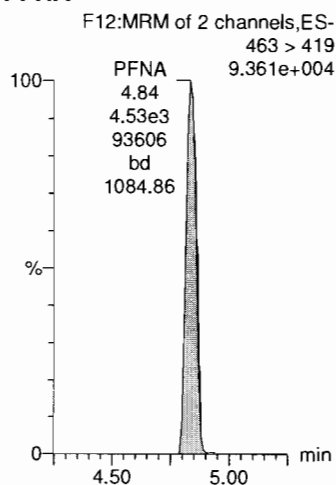
**PFHxS**



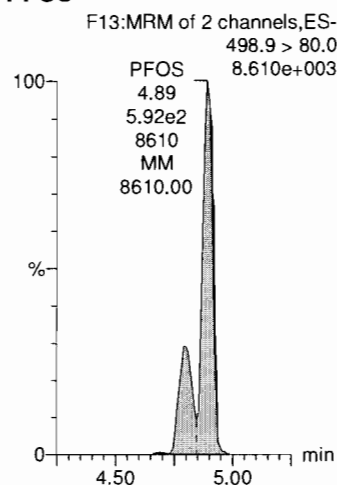
**PFOA**



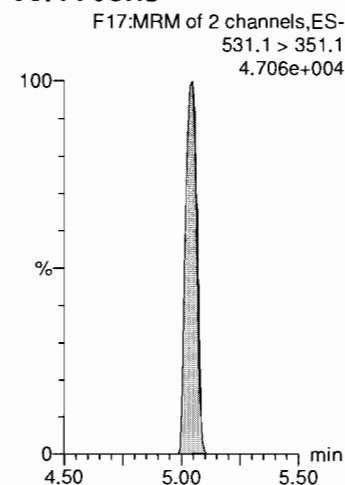
**PFNA**



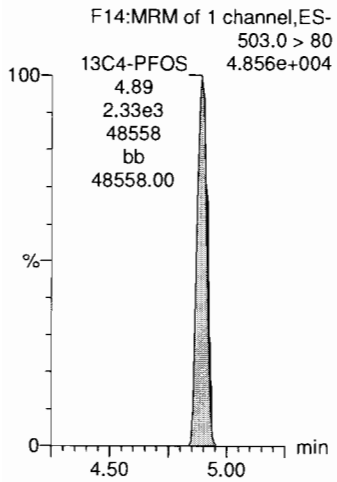
**PFOS**



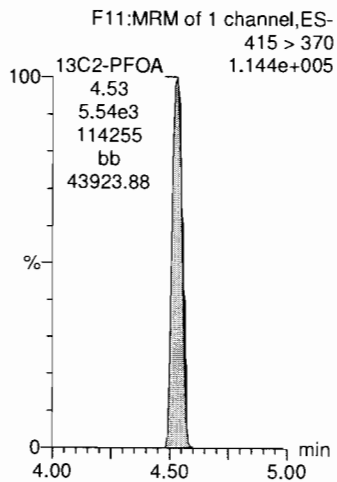
**9CI-PF3ONS**



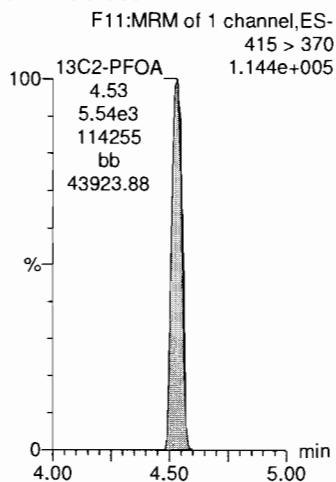
**13C4-PFOS**



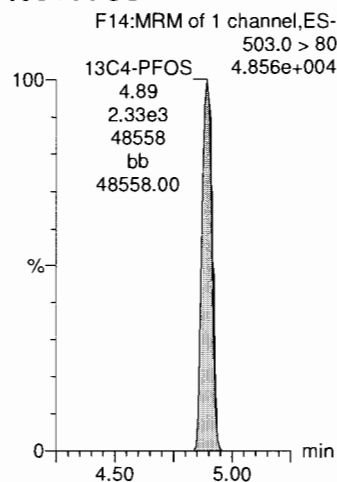
**13C2-PFOA**



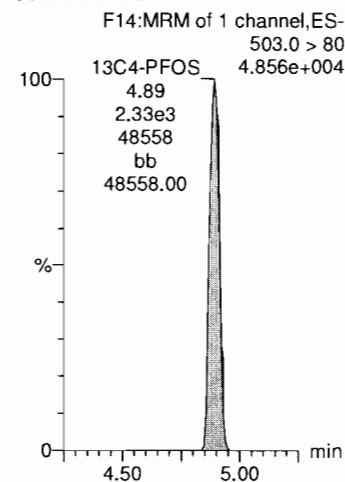
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**



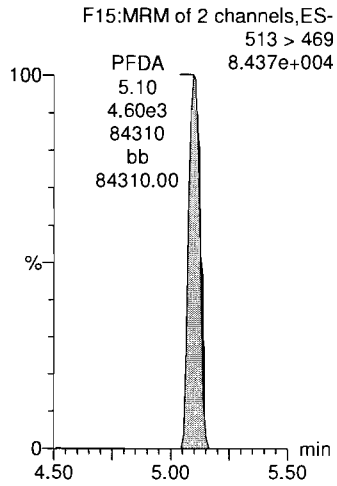
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

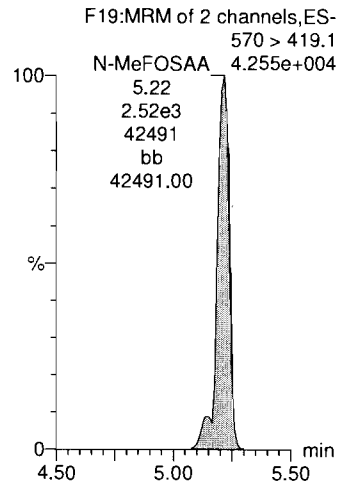
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_7, Date: 14-Dec-2018, Time: 13:22:50, ID: ST181214P2-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

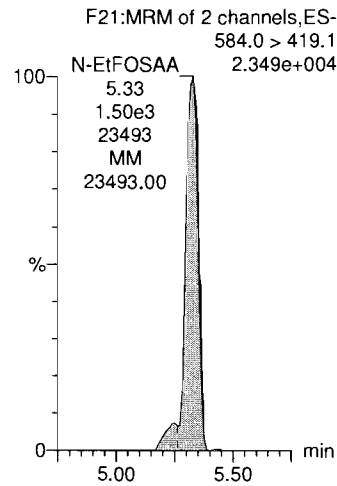
**PFDA**



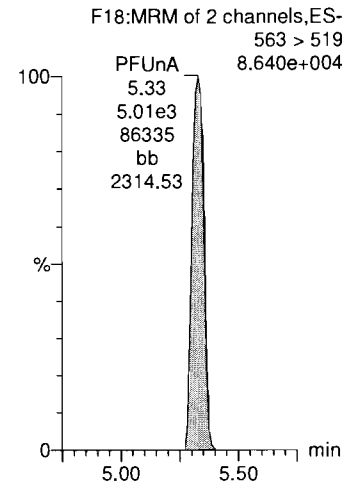
**N-MeFOSAA**



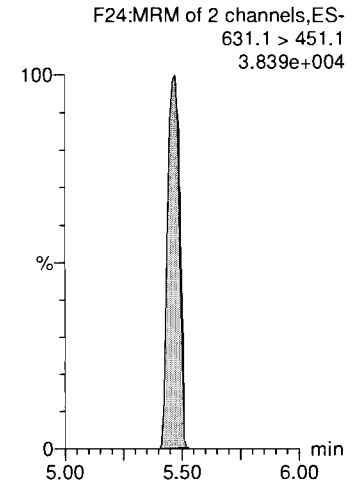
**N-EtFOSAA**



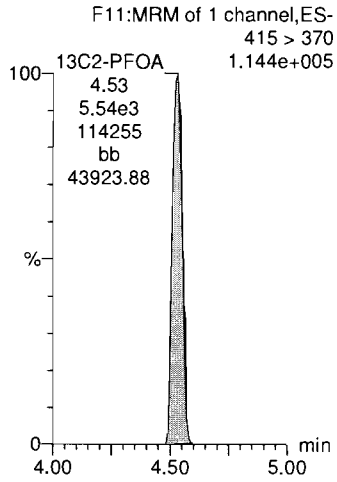
**PFUnA**



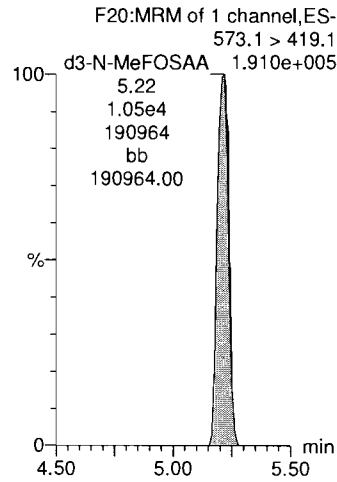
**11Cl-PF3OUdS**



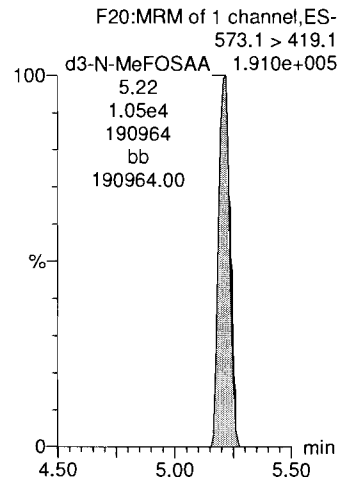
**13C2-PFOA**



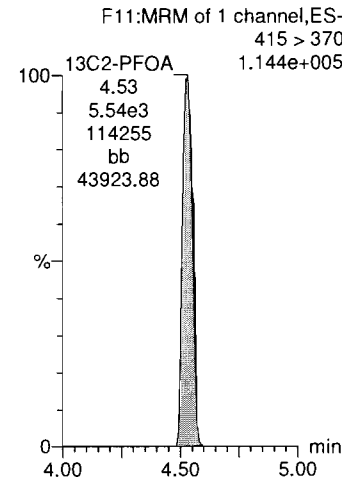
**d3-N-MeFOSAA**



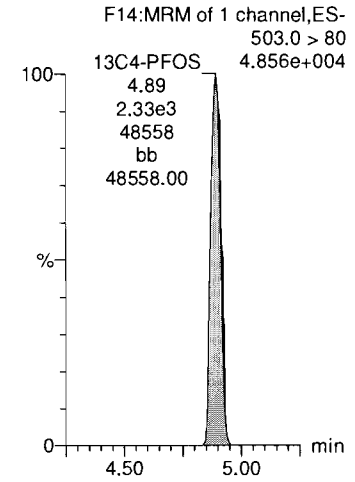
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



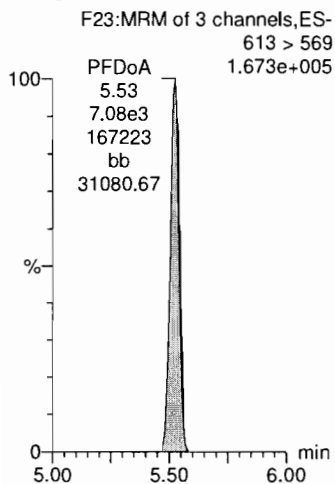
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

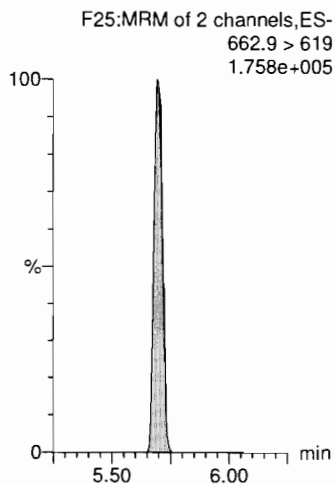
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_7, Date: 14-Dec-2018, Time: 13:22:50, ID: ST181214P2-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

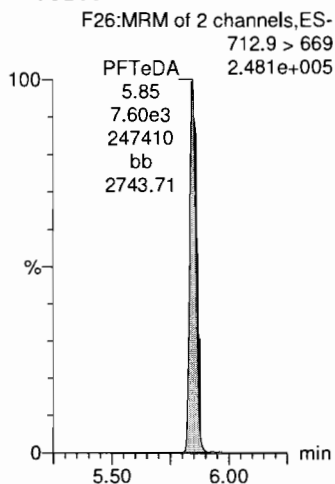
**PFDoA**



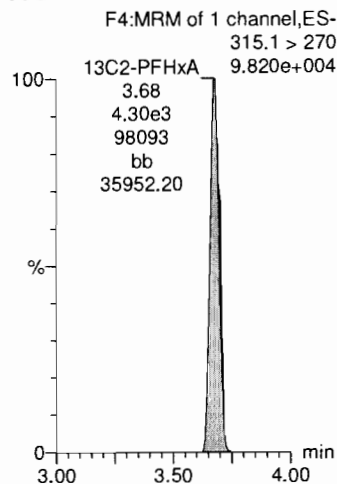
**PFTrDA**



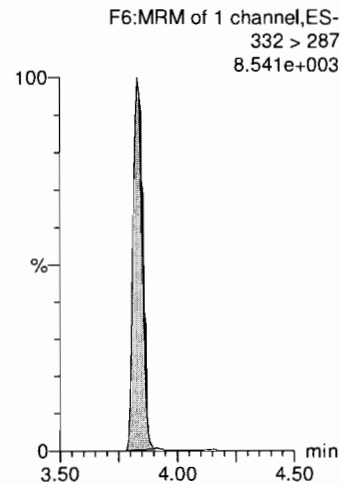
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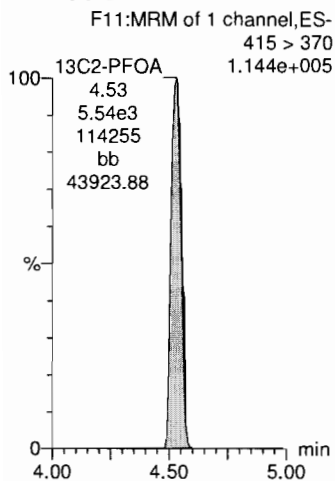
**13C2-PFHxA**



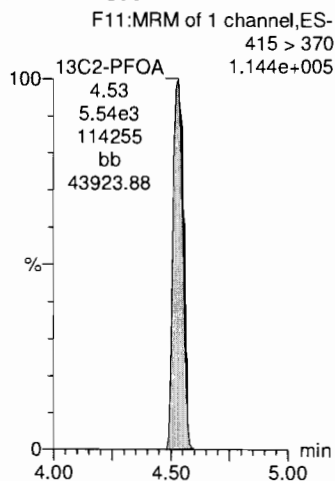
**13C3-HFPO-DA**



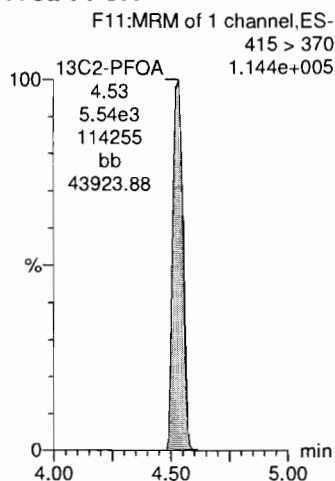
**13C2-PFOA**



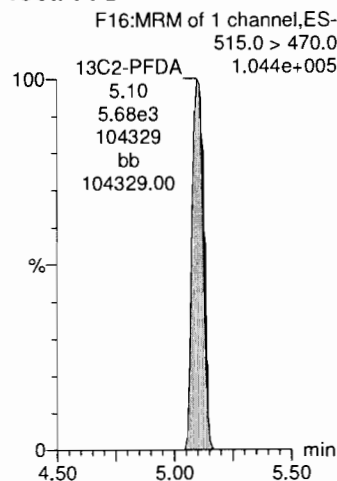
**13C2-PFOA**



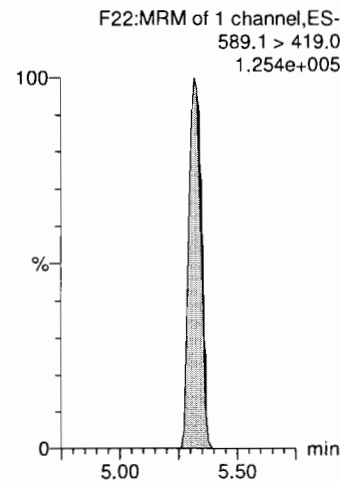
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**





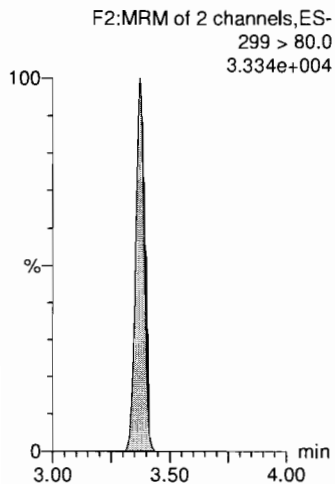
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

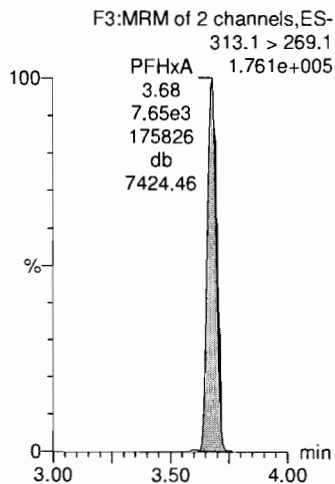
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_8, Date: 14-Dec-2018, Time: 13:34:01, ID: ST181214P2-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009

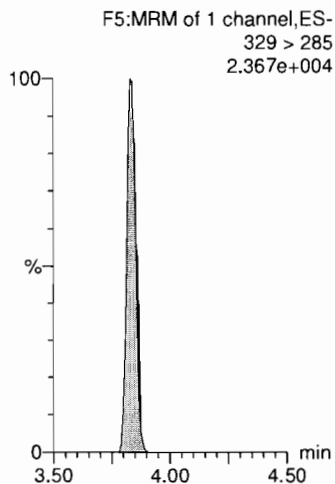
**PFBS**



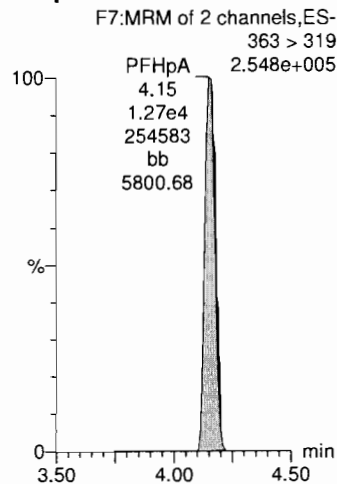
**PFHxA**



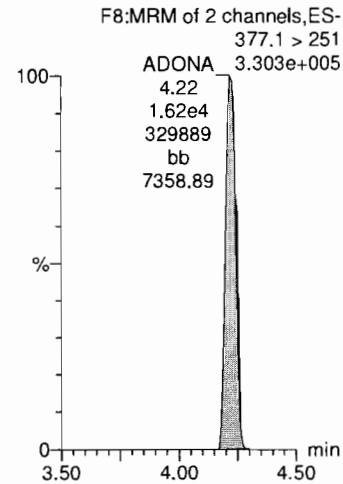
**HFPO-DA**



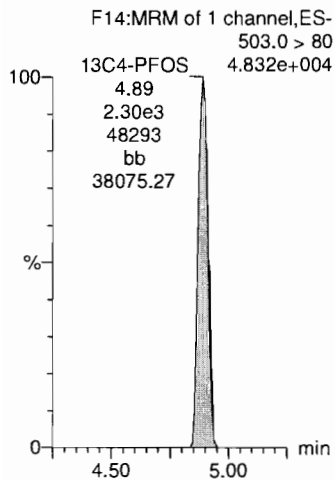
**PFHpA**



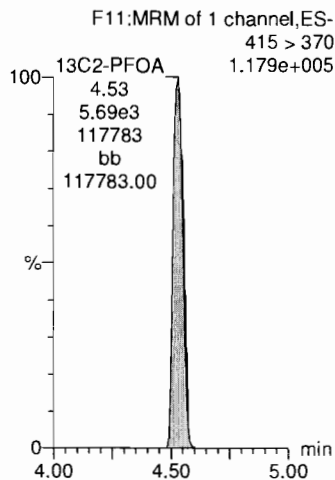
**ADONA**



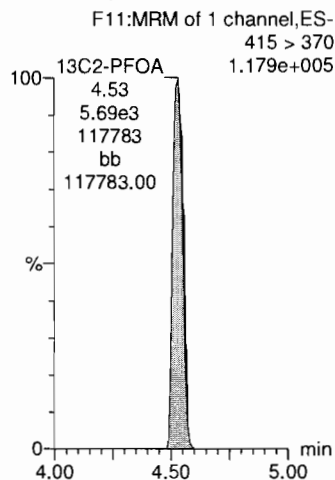
**13C4-PFOS**



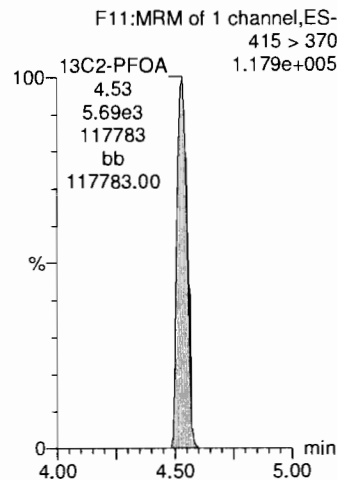
**13C2-PFOA**



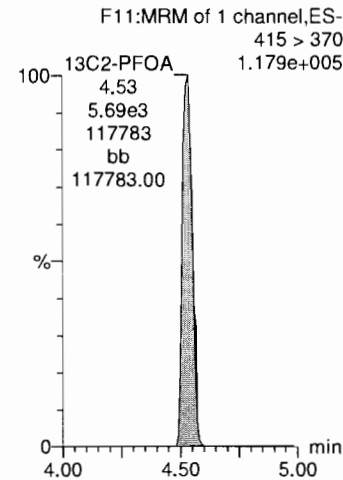
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**

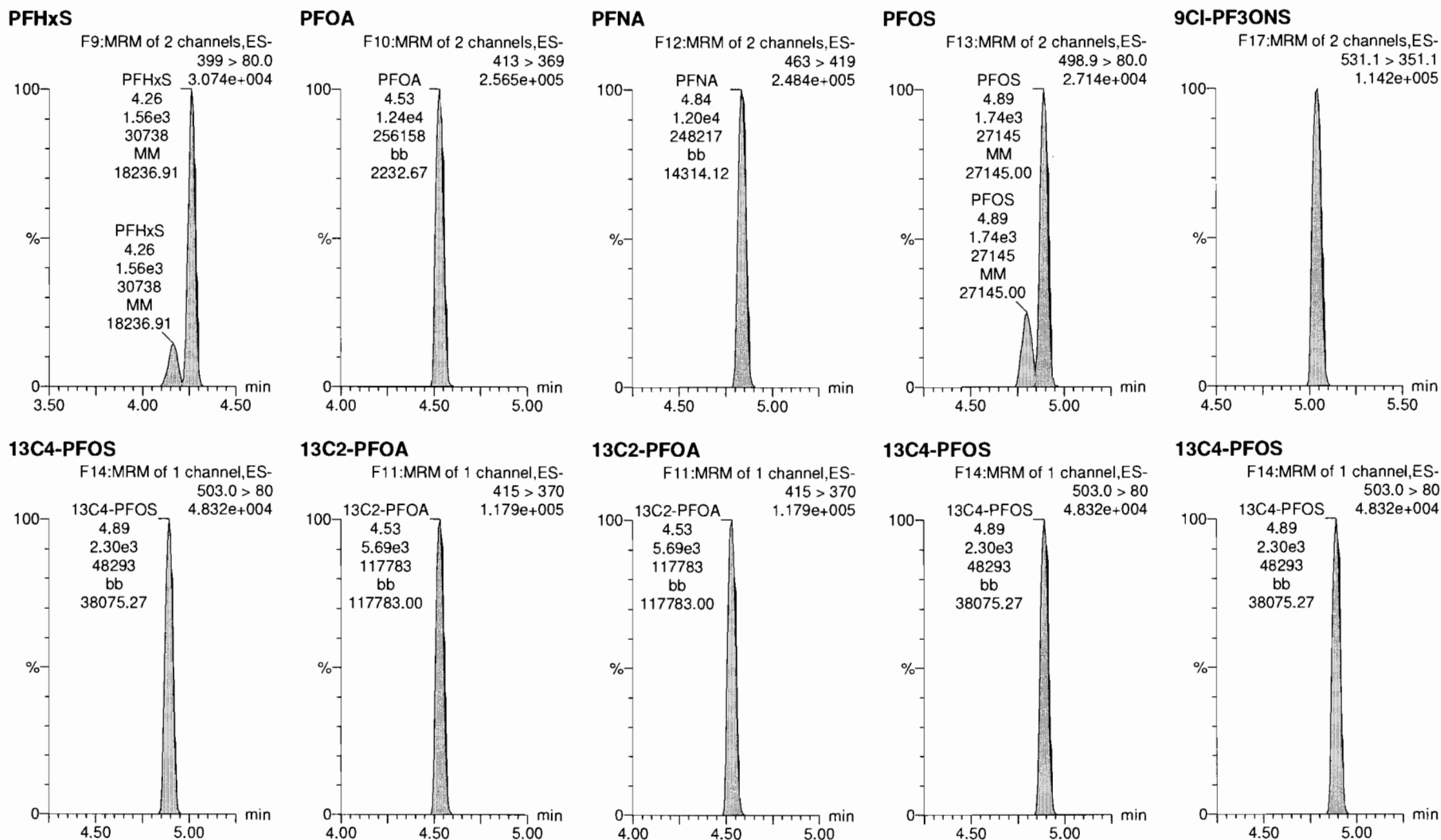


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_8, Date: 14-Dec-2018, Time: 13:34:01, ID: ST181214P2-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009



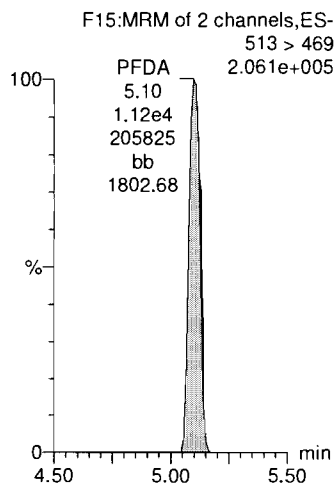
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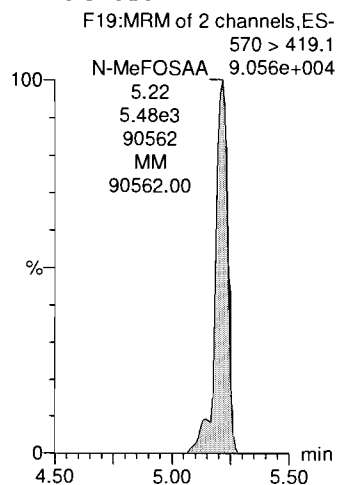
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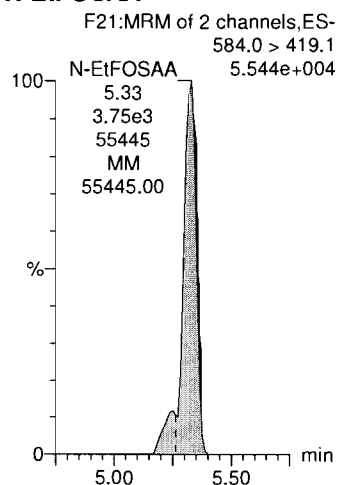
**PFDA**



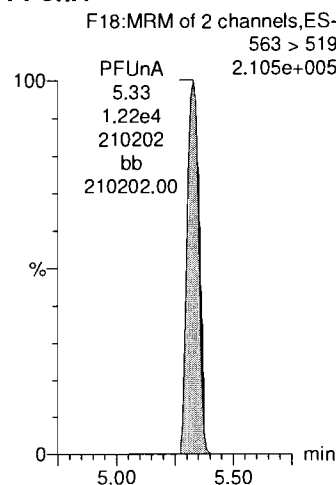
**N-MeFOSAA**



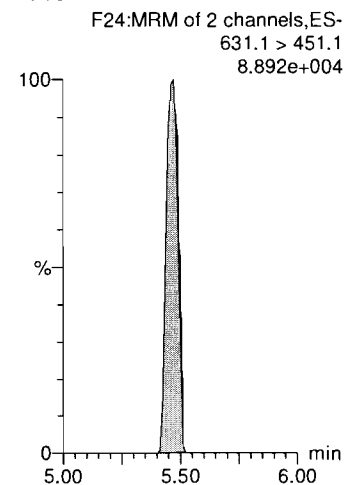
**N-EtFOSAA**



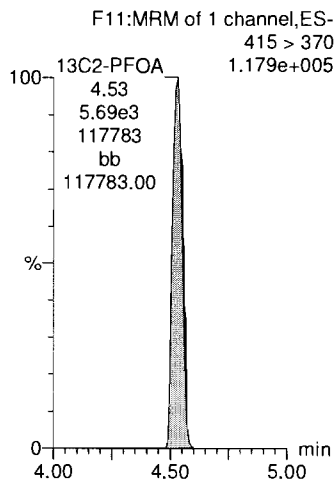
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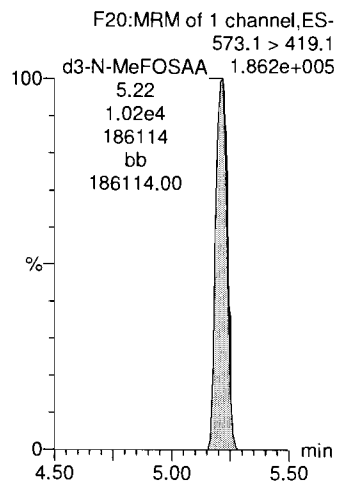
**11CI-PF3OUdS**



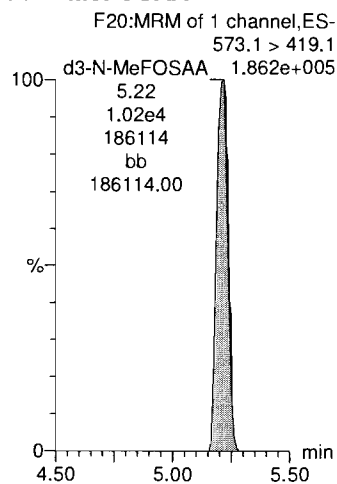
**13C2-PFOA**



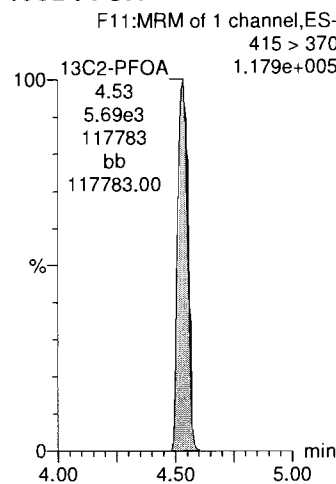
**d3-N-MeFOSAA**



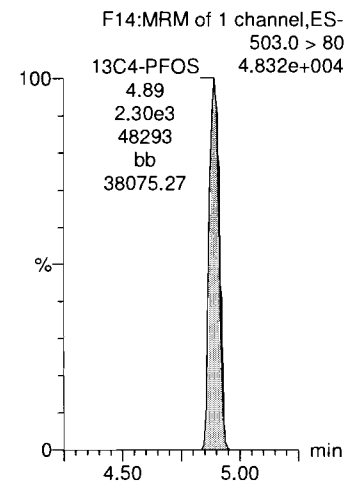
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



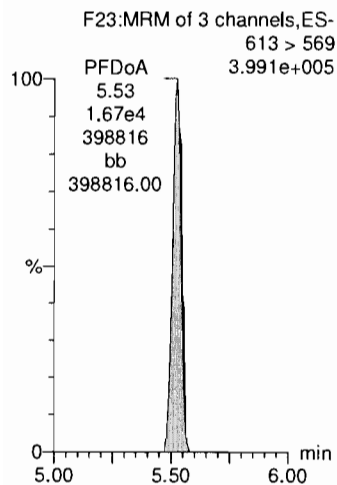
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

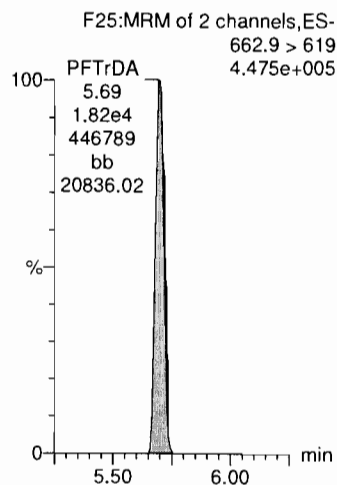
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_8, Date: 14-Dec-2018, Time: 13:34:01, ID: ST181214P2-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009

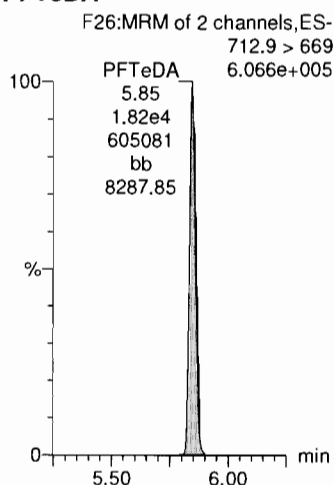
**PFDoA**



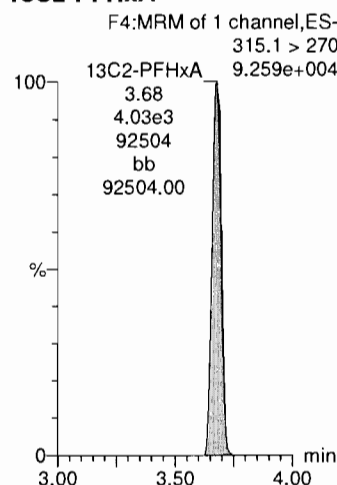
**PFTrDA**



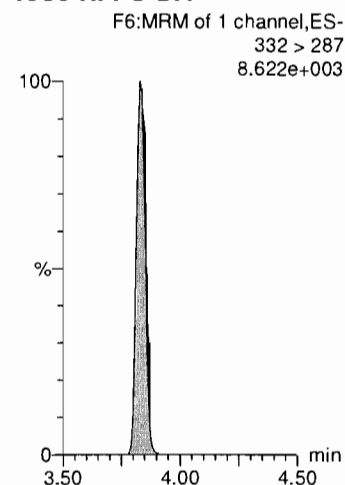
**PFTeDA**



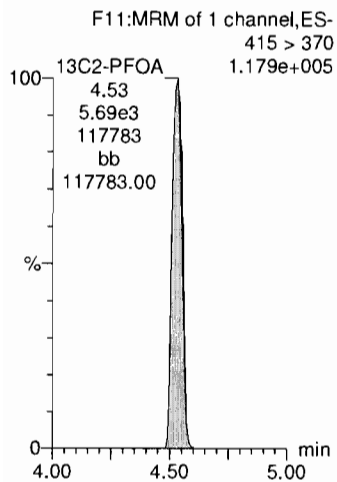
**13C2-PFHxA**



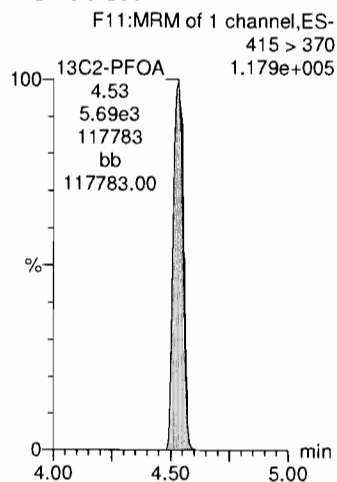
**13C3-HFPO-DA**



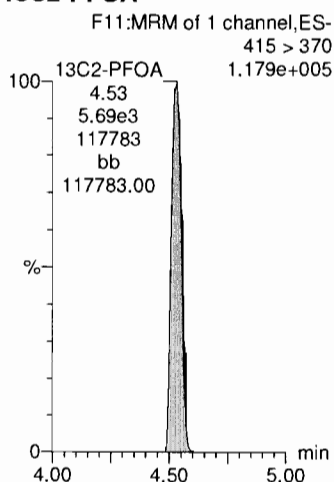
**13C2-PFOA**



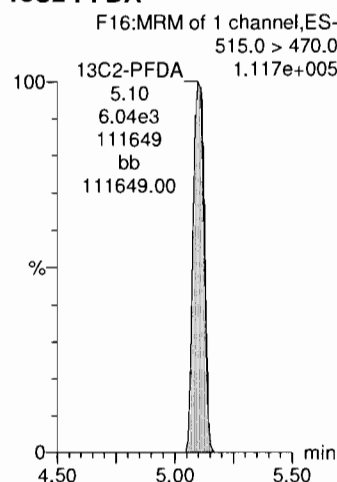
**13C2-PFOA**



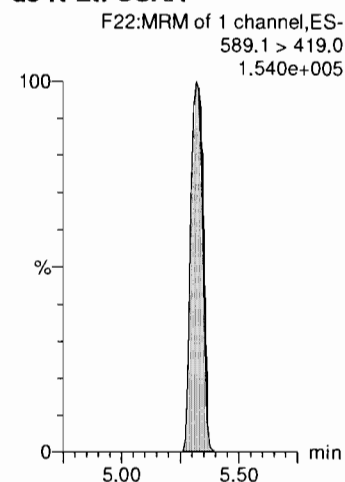
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**



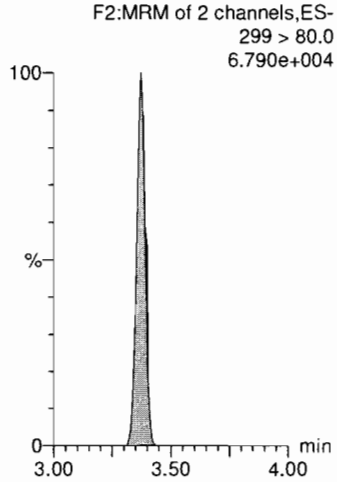
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

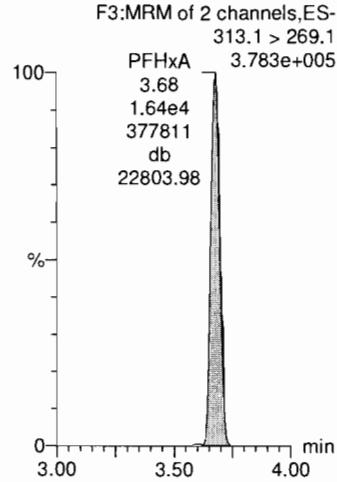
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_9, Date: 14-Dec-2018, Time: 13:45:12, ID: ST181214P2-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010

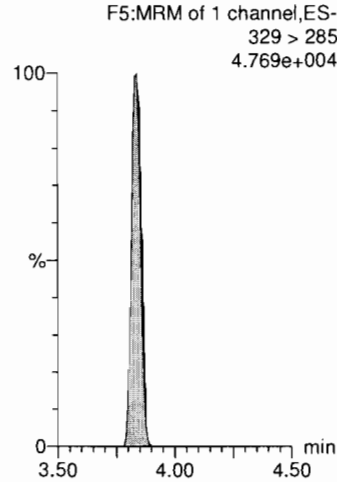
**PFBS**



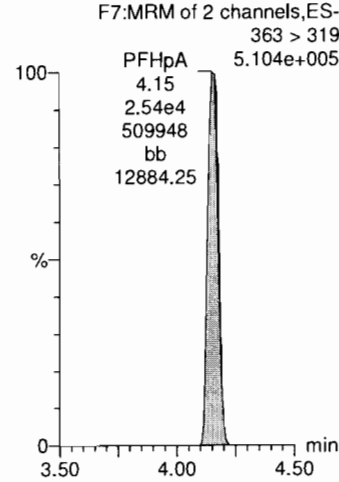
**PFHxA**



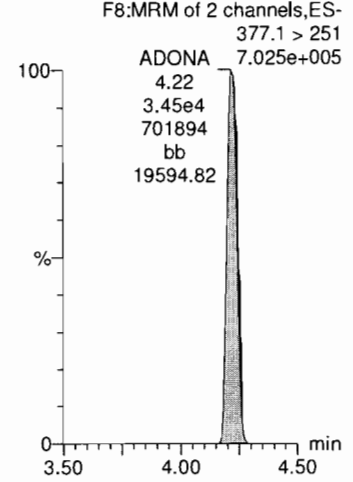
**HFPO-DA**



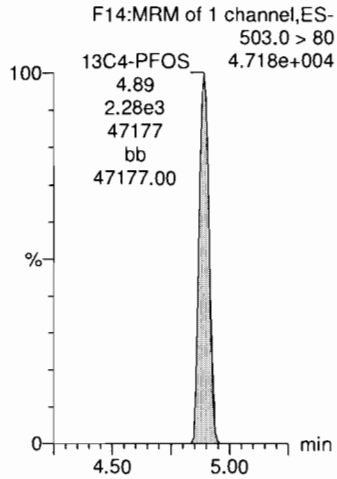
**PFHpA**



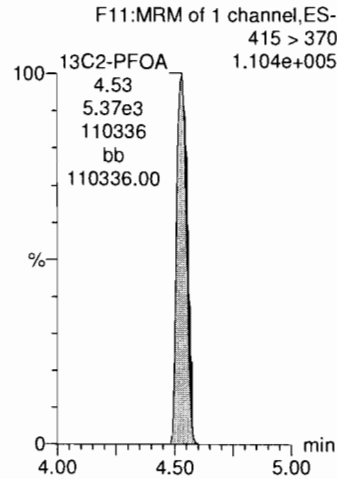
**ADONA**



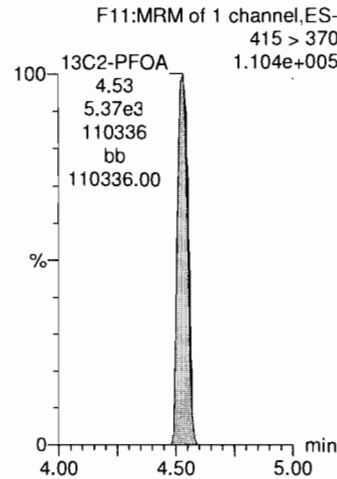
**13C4-PFOS**



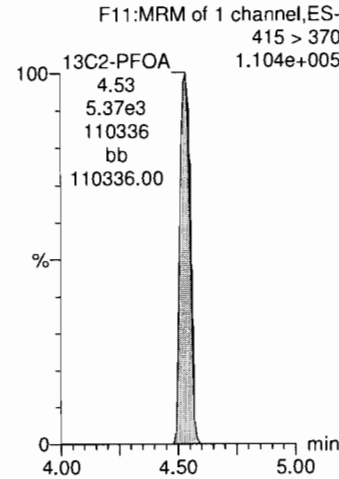
**13C2-PFOA**



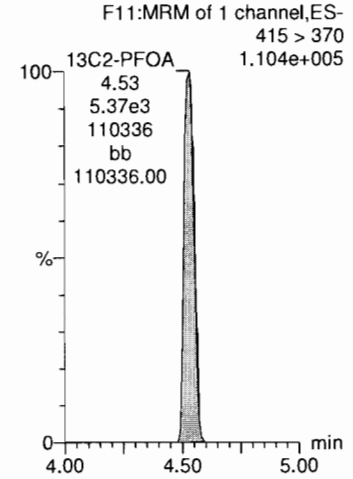
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**

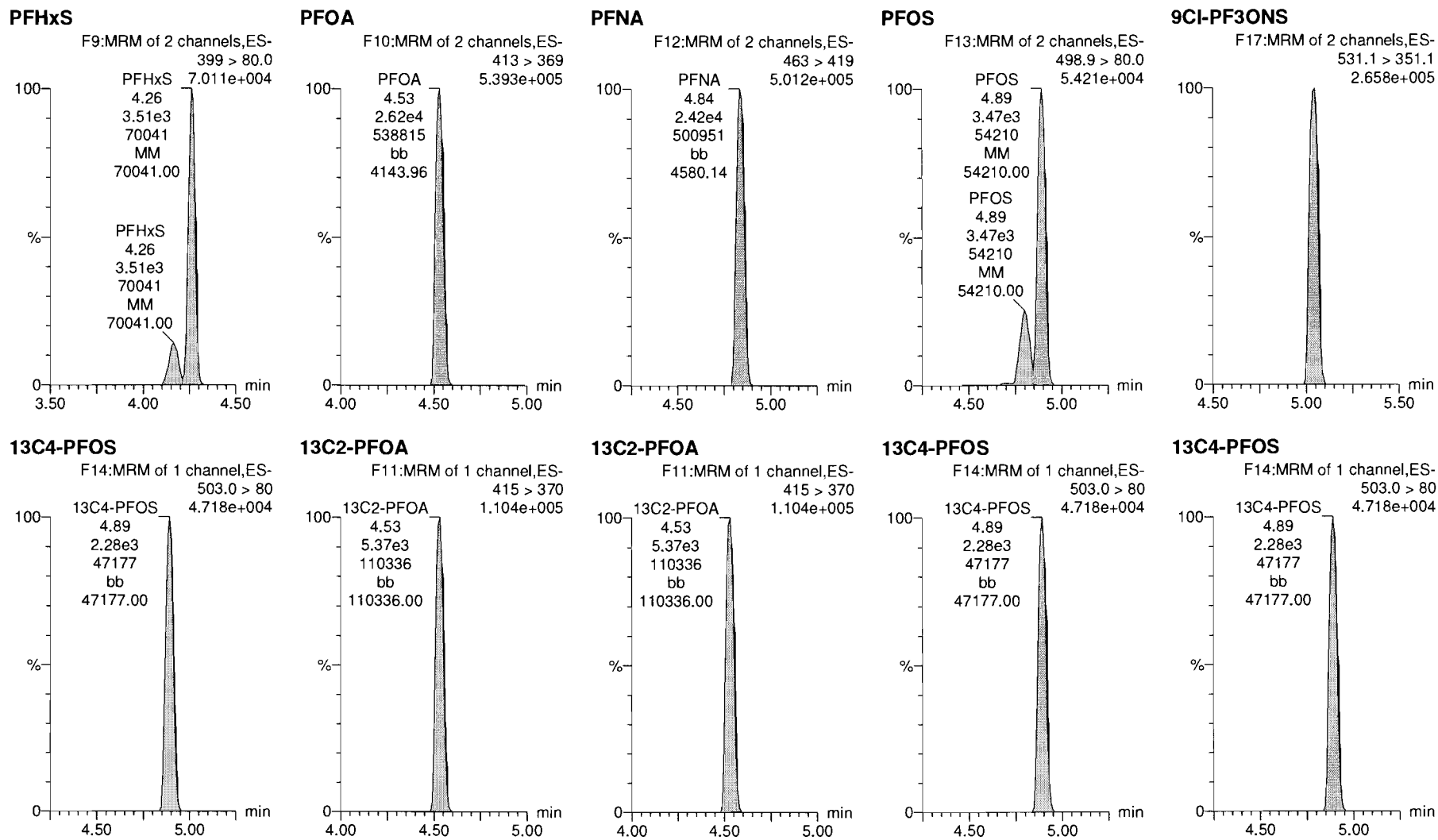


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_9, Date: 14-Dec-2018, Time: 13:45:12, ID: ST181214P2-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010



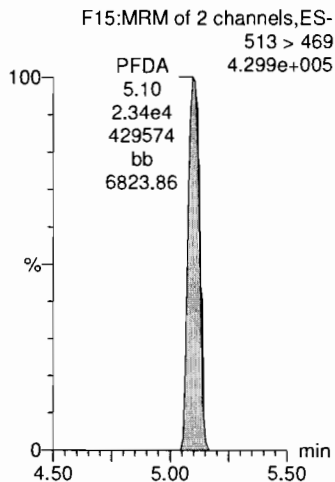
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

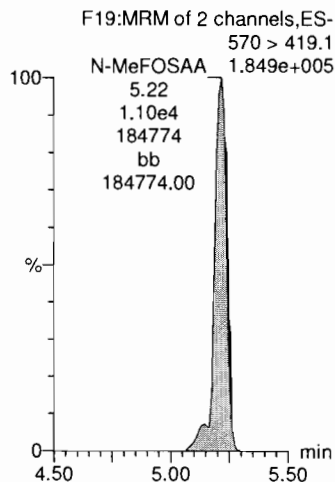
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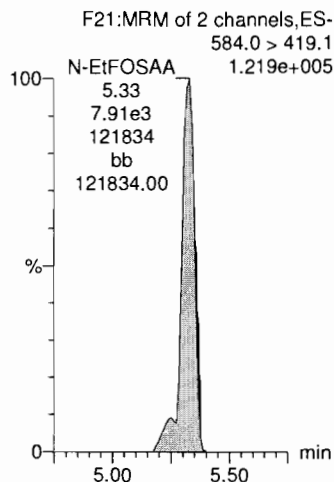
**PFDA**



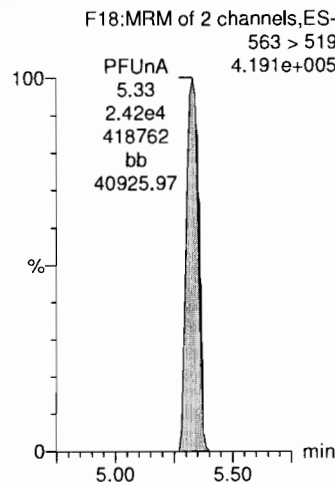
**N-MeFOSAA**



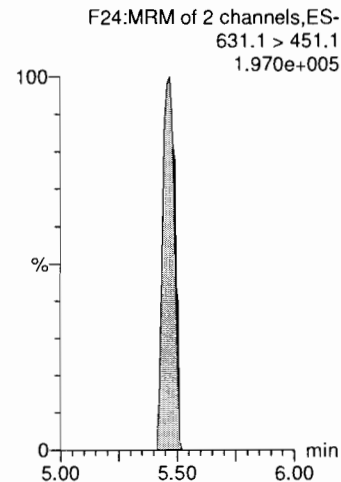
**N-EtFOSAA**



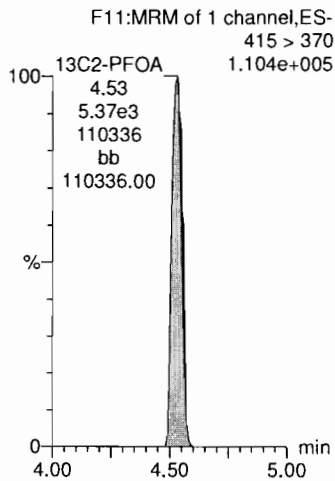
**PFUnA**



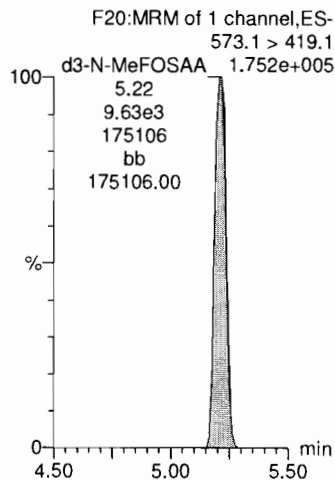
**11CI-PF3OUdS**



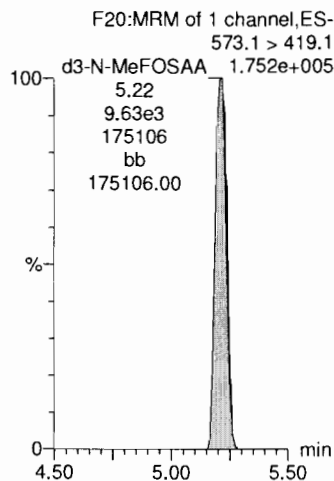
**13C2-PFOA**



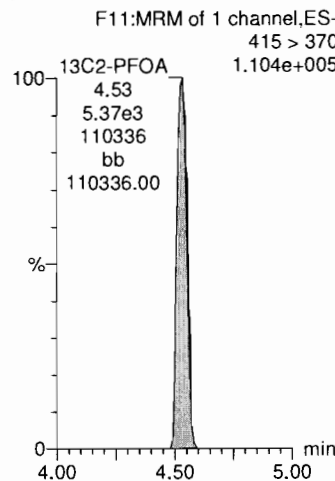
**d3-N-MeFOSAA**



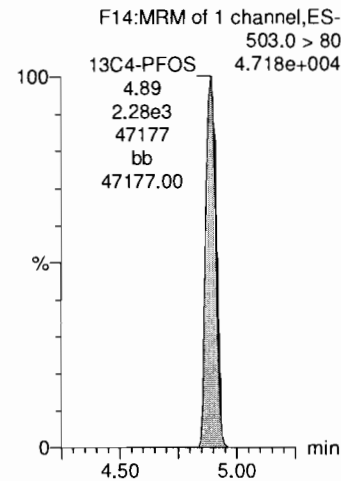
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



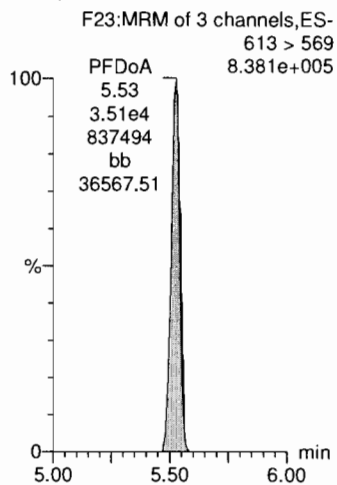
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

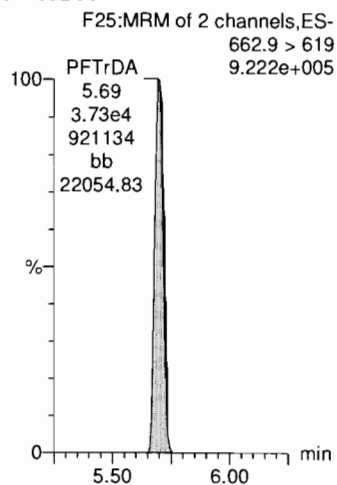
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Name: 181214P2\_9, Date: 14-Dec-2018, Time: 13:45:12, ID: ST181214P2-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010

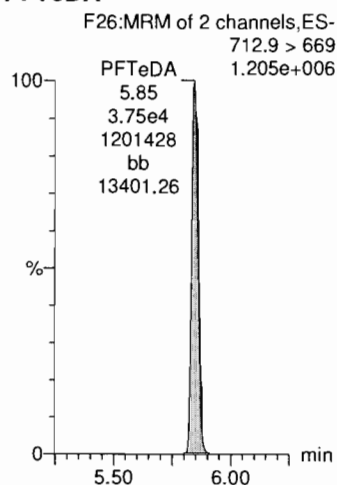
**PFDoA**



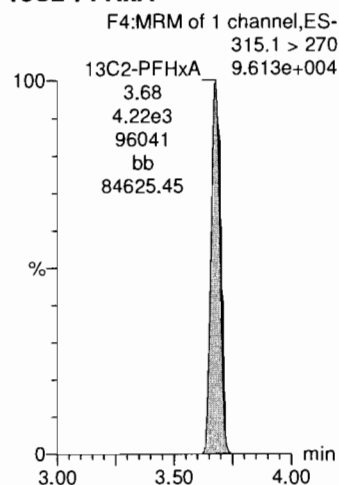
**PFTrDA**



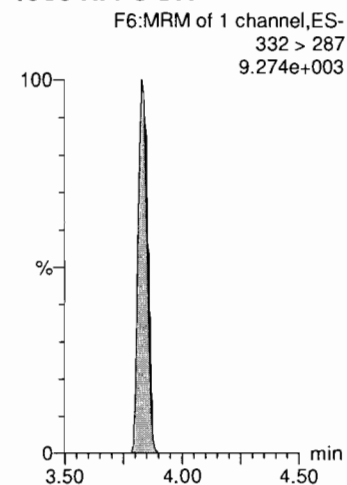
**PFTeDA**



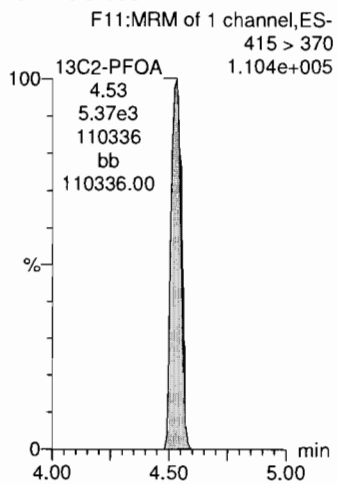
**13C2-PFHxA**



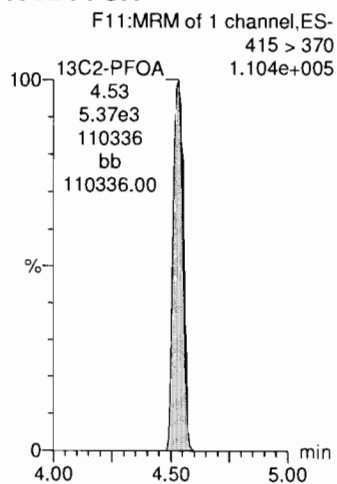
**13C3-HFPO-DA**



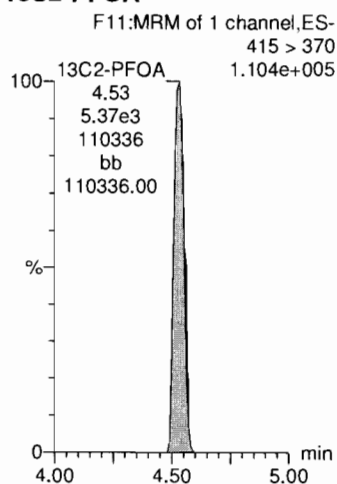
**13C2-PFOA**



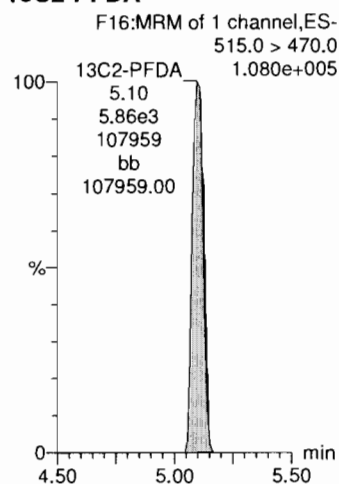
**13C2-PFOA**



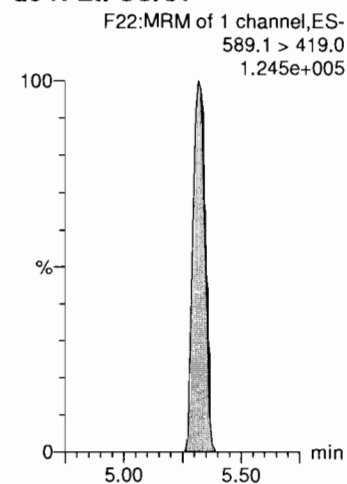
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**

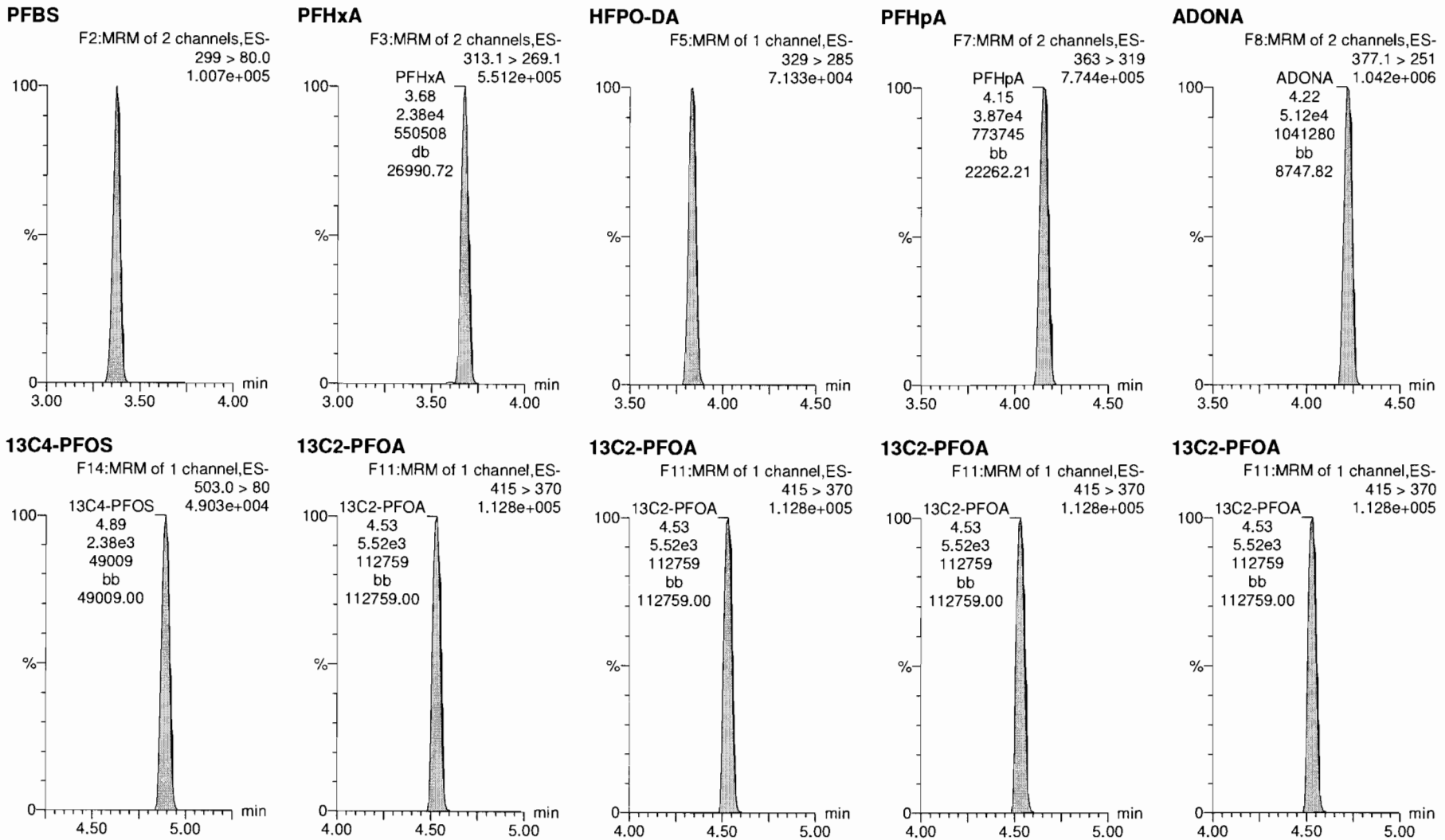




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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
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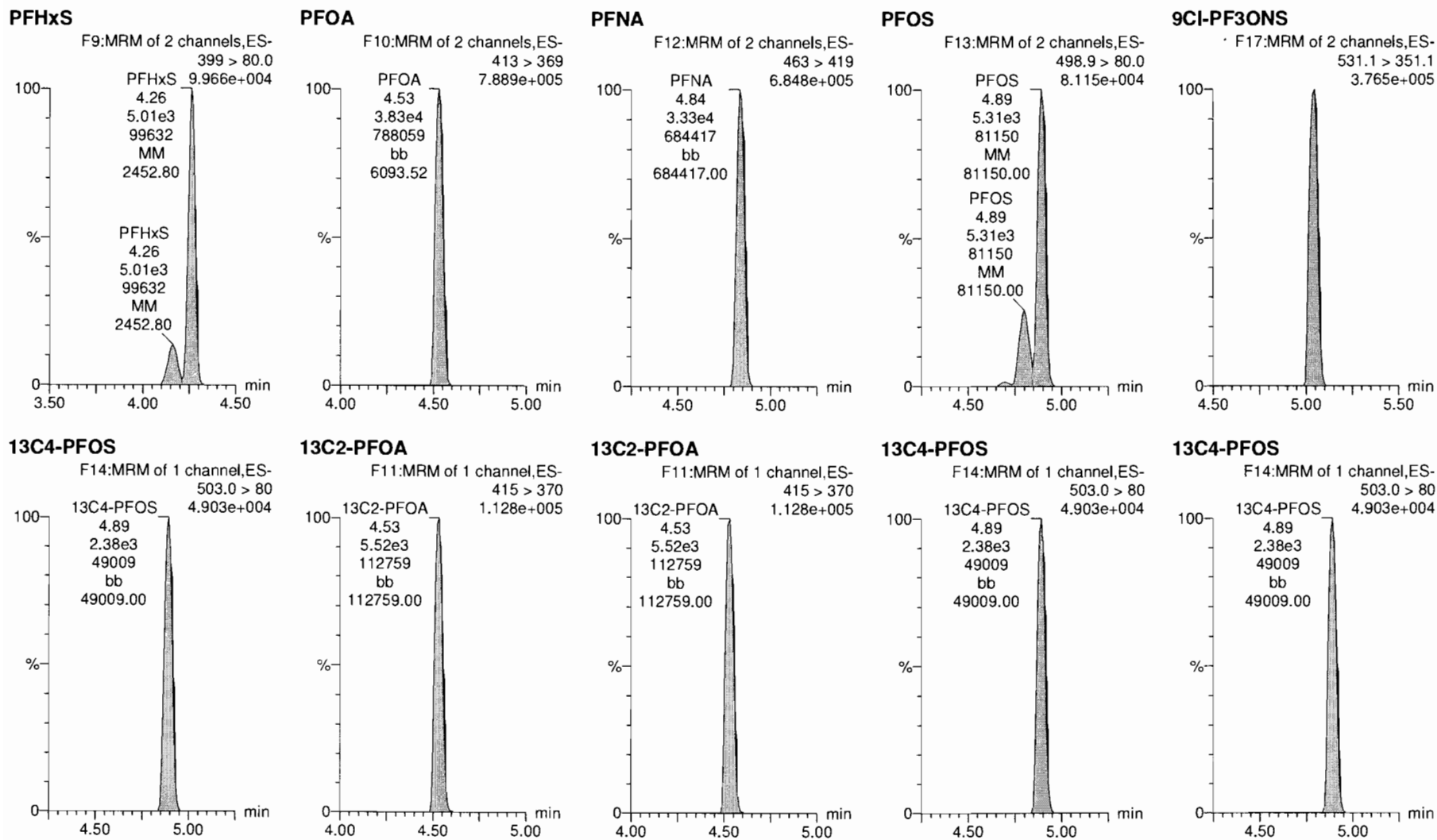
Name: 181214P2\_10, Date: 14-Dec-2018, Time: 13:56:22, ID: ST181214P2-9 PFC CS4 537 18L1011, Description: PFC CS4 537 18L1011



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_10, Date: 14-Dec-2018, Time: 13:56:22, ID: ST181214P2-9 PFC CS4 537 18L1011, Description: PFC CS4 537 18L1011



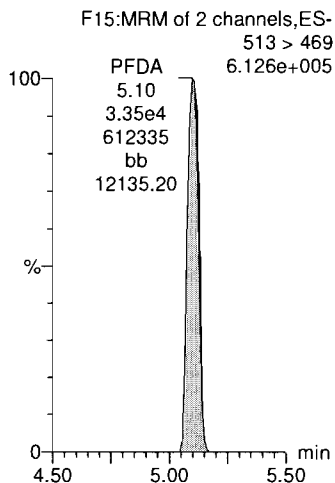
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

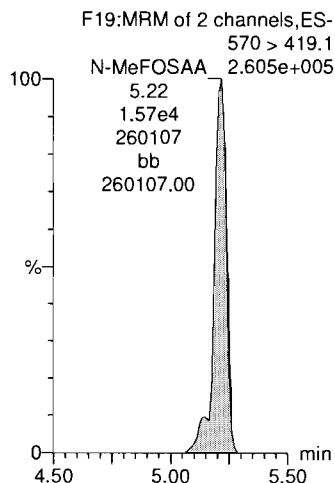
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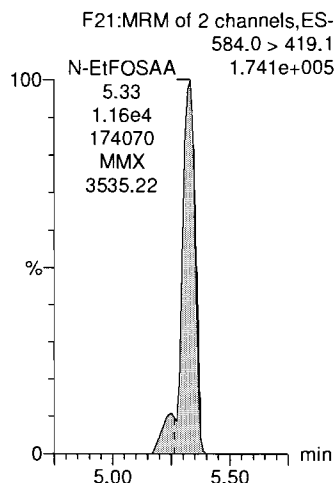
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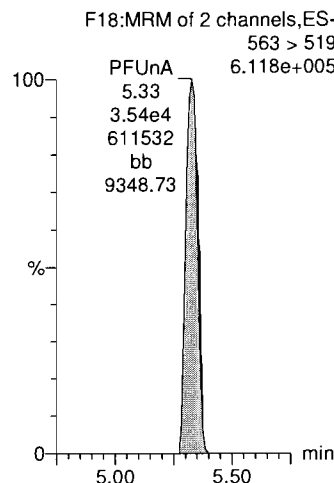
**N-MeFOSAA**



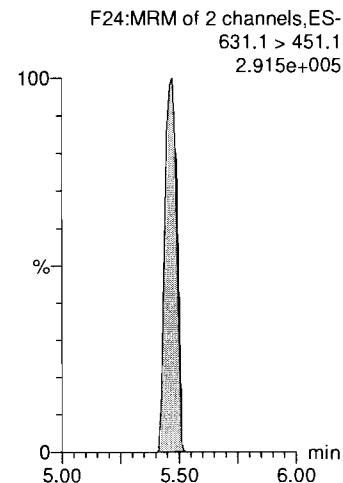
**N-EtFOSAA**



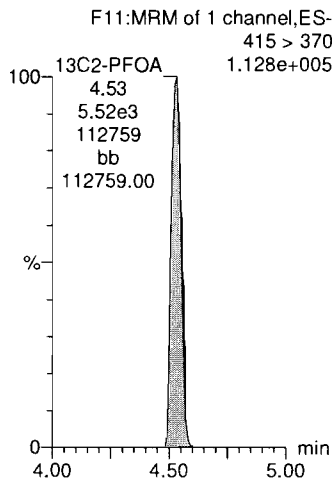
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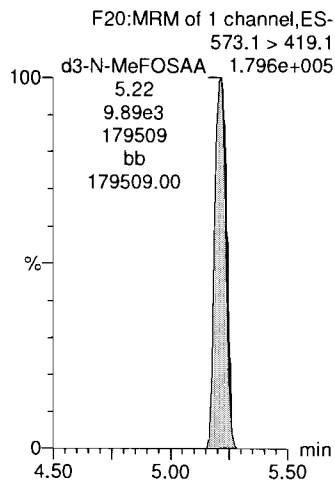
**11CI-PF3OUds**



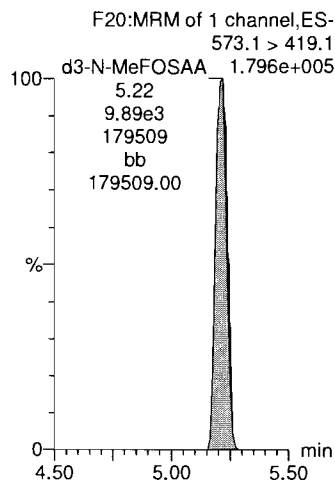
**13C2-PFOA**



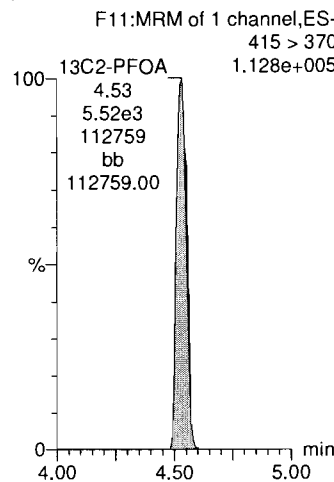
**d3-N-MeFOSAA**



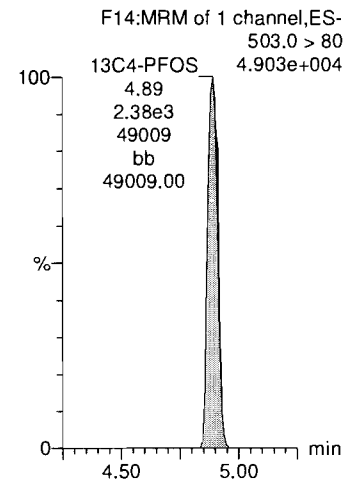
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



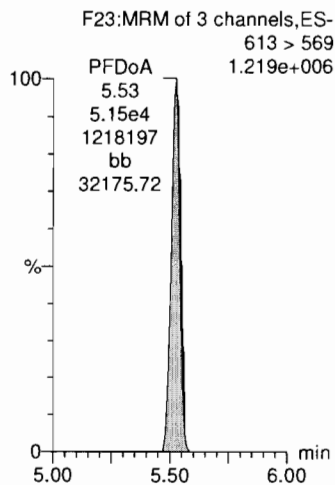
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Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time

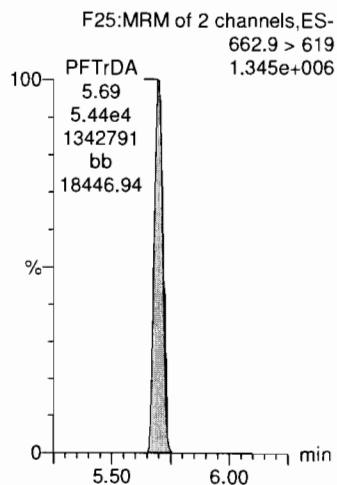
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_10, Date: 14-Dec-2018, Time: 13:56:22, ID: ST181214P2-9 PFC CS4 537 18L1011, Description: PFC CS4 537 18L1011

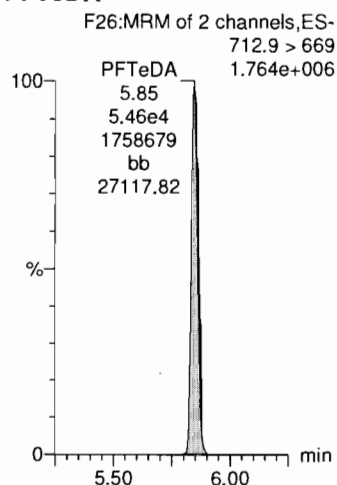
**PFDoA**



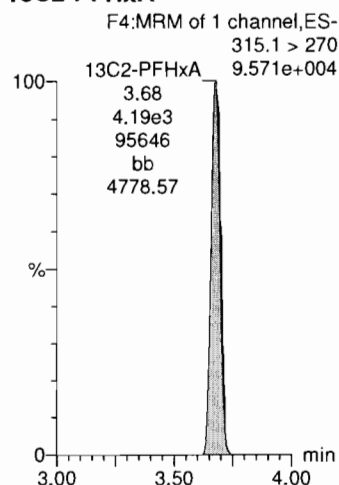
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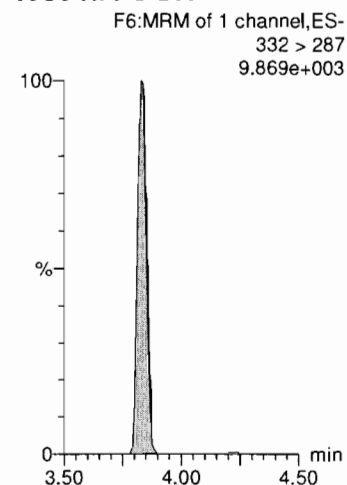
**PFTeDA**



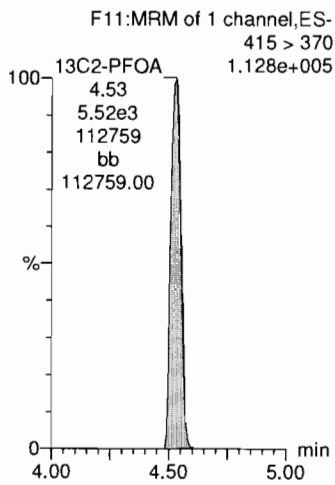
**13C2-PFHxA**



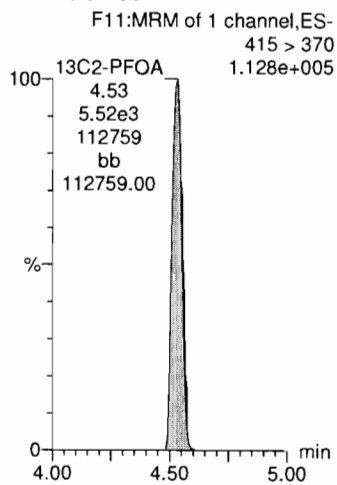
**13C3-HFPO-DA**



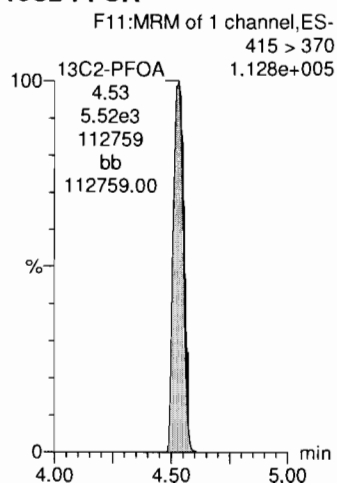
**13C2-PFOA**



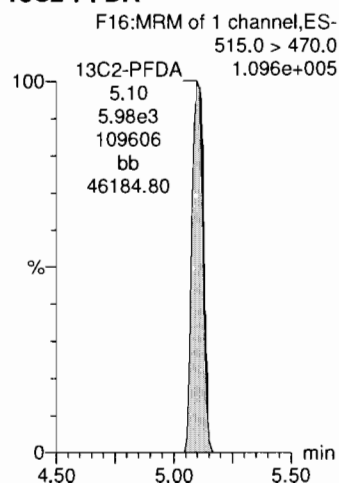
**13C2-PFOA**



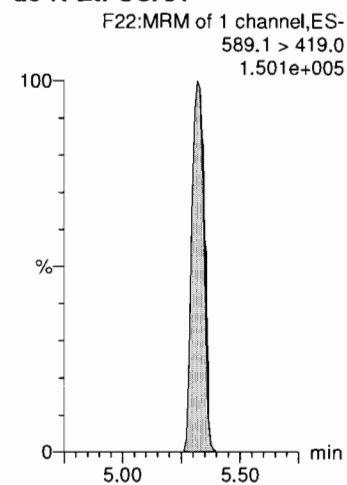
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**

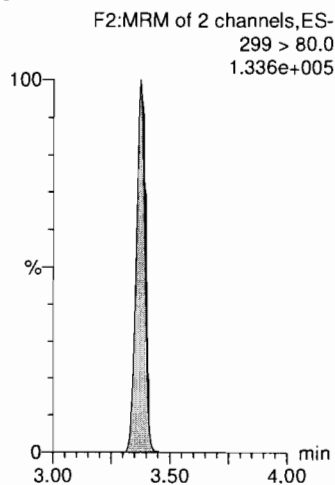


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

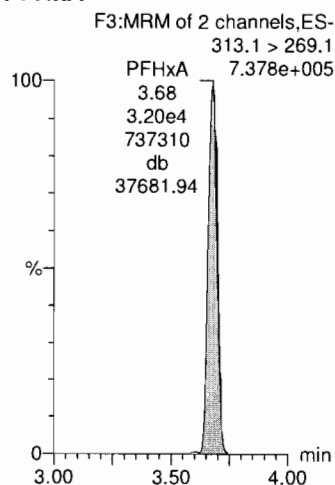
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Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_11, Date: 14-Dec-2018, Time: 14:07:33, ID: ST181214P2-10 PFC CS5 537 18L1012, Description: PFC CS5 537 18L1012

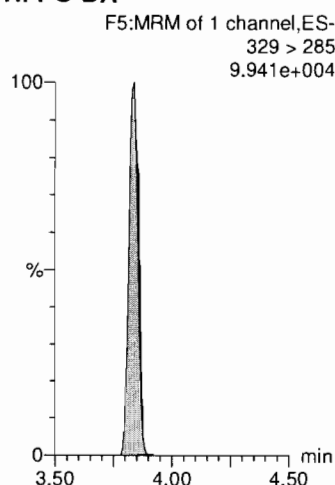
**PFBS**



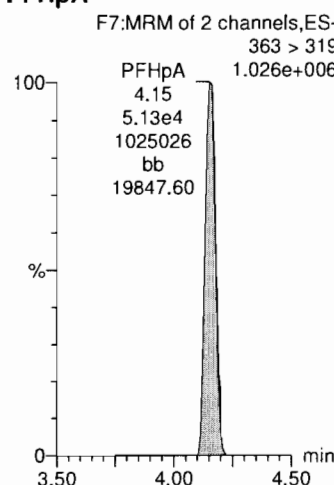
**PFHxA**



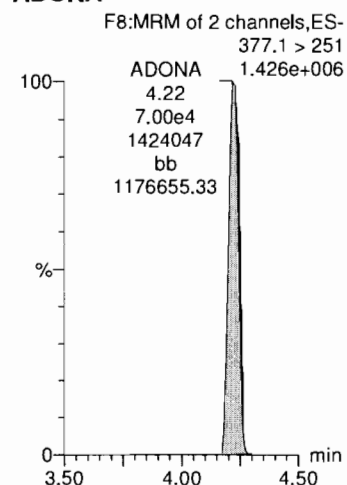
**HFPO-DA**



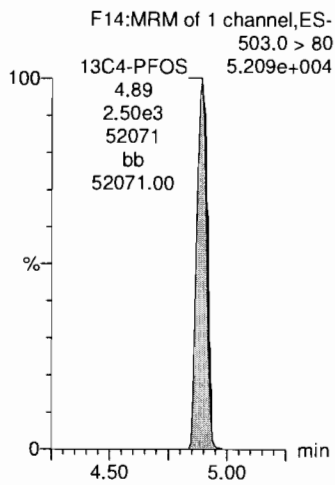
**PFHpA**



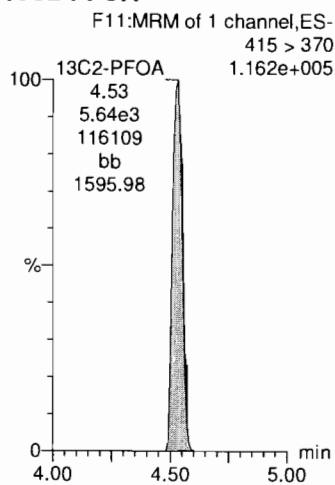
**ADONA**



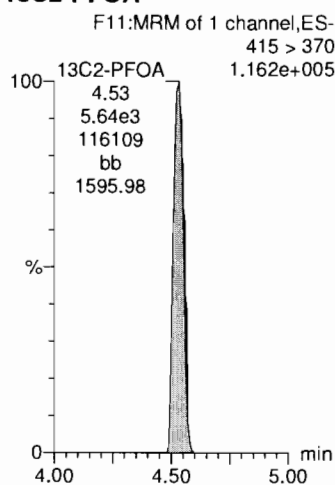
**13C4-PFOS**



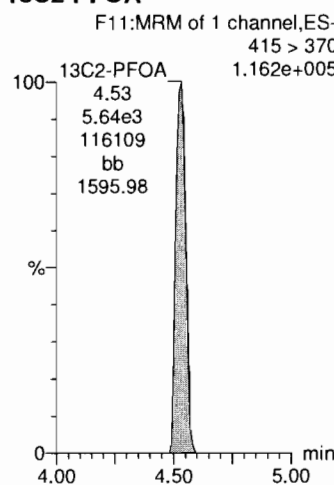
**13C2-PFOA**



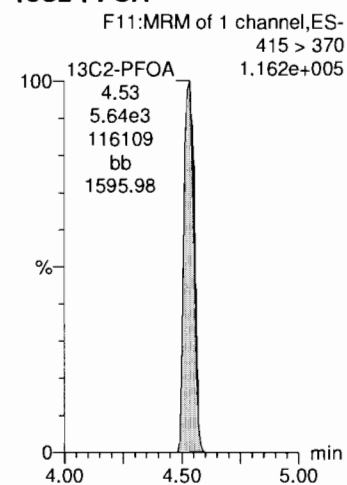
**13C2-PFOA**



**13C2-PFOA**



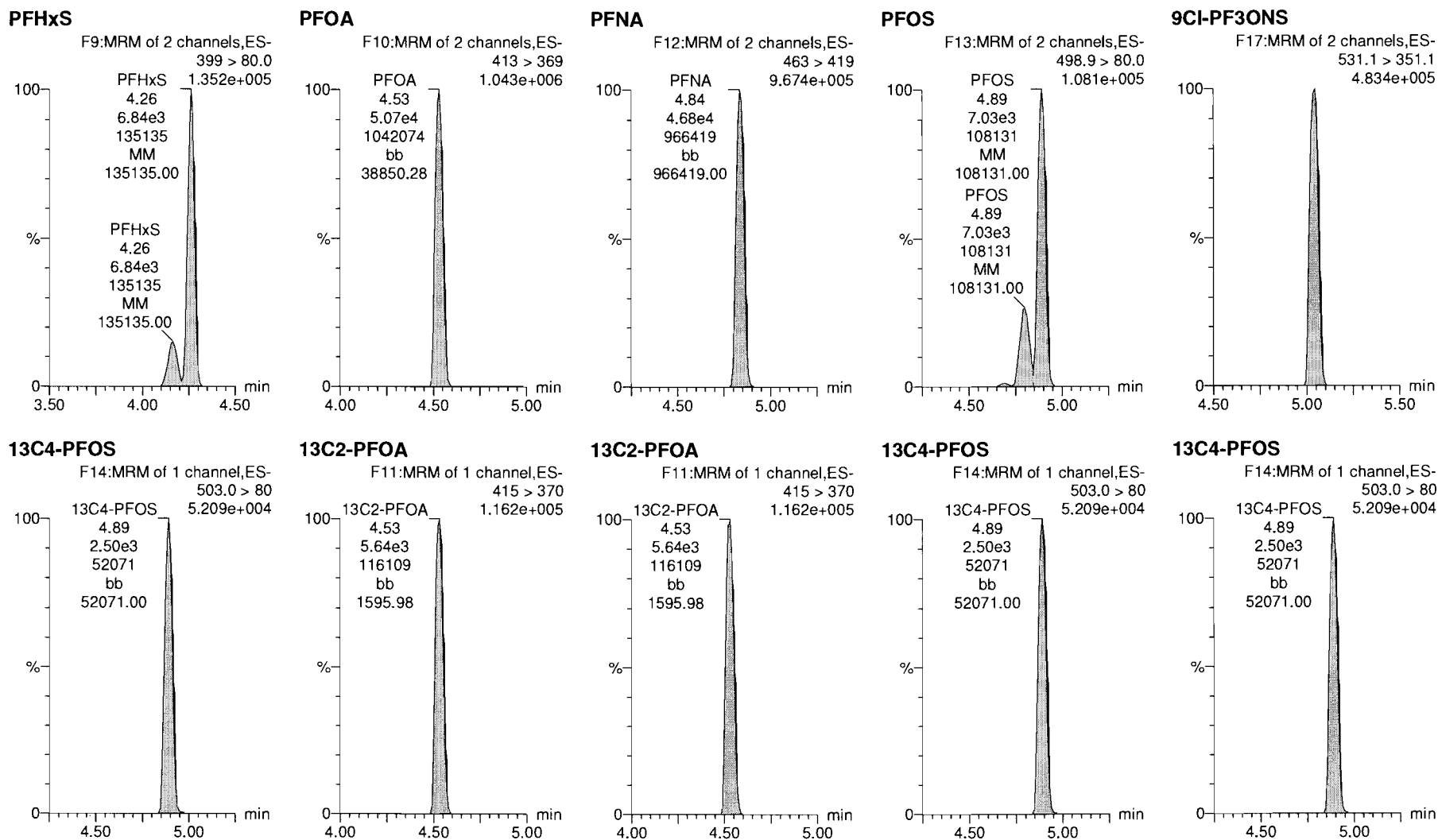
**13C2-PFOA**



Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-CRV.qld

Last Altered: Saturday, December 15, 2018 10:04:34 Pacific Standard Time  
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Name: 181214P2\_11, Date: 14-Dec-2018, Time: 14:07:33, ID: ST181214P2-10 PFC CS5 537 18L1012, Description: PFC CS5 537 18L1012



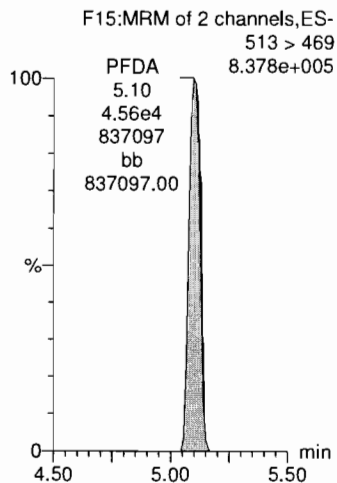
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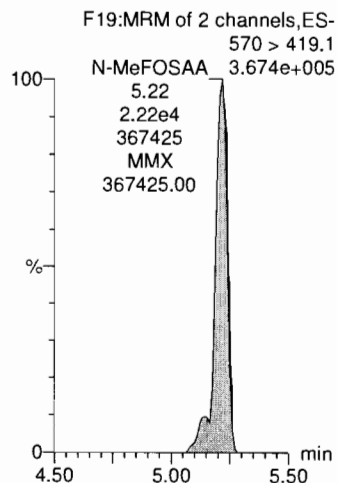
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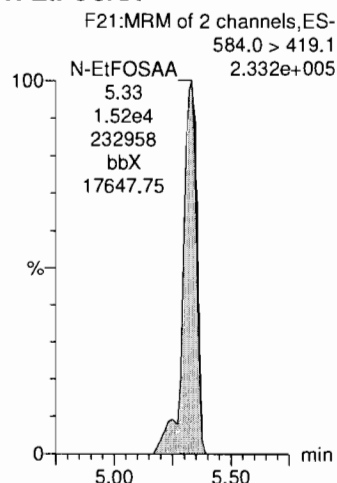
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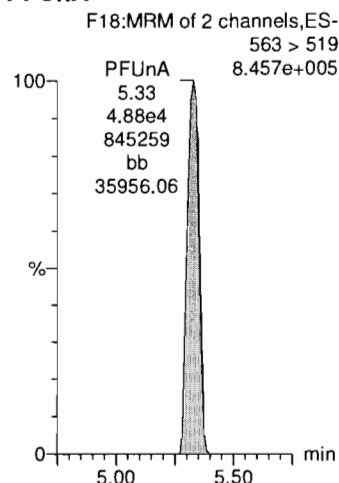
**N-MeFOSAA**



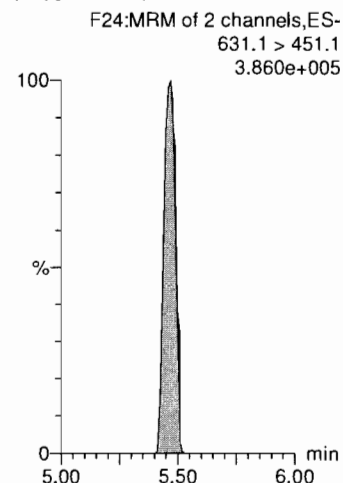
**N-EtFOSAA**



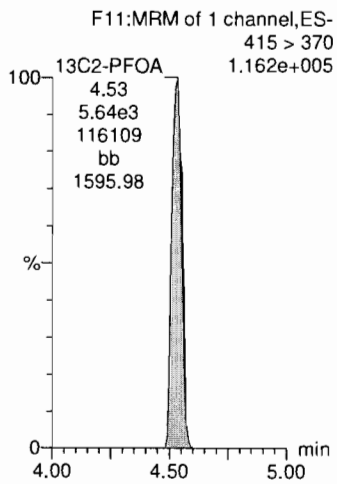
**PFUnA**



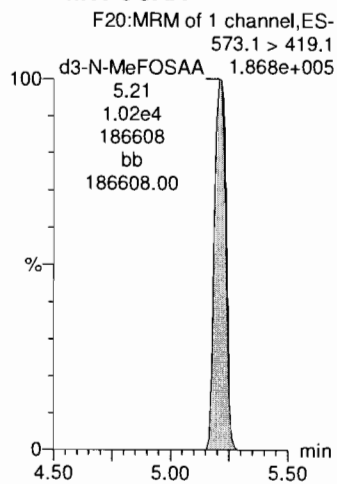
**11CI-PF3OUdS**



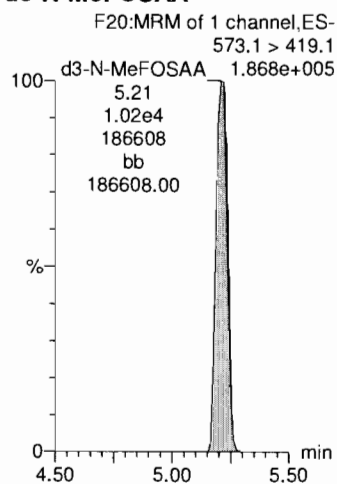
**13C2-PFOA**



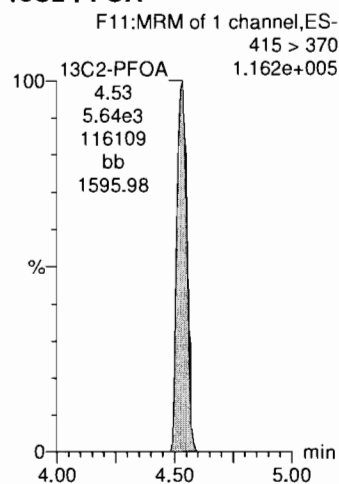
**d3-N-MeFOSAA**



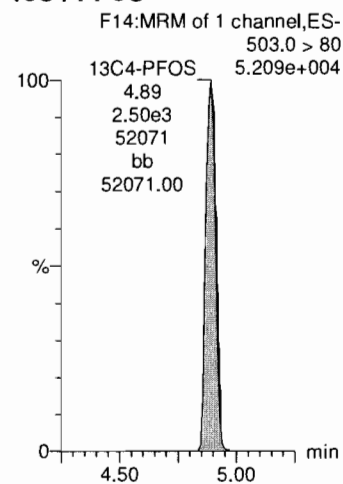
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**



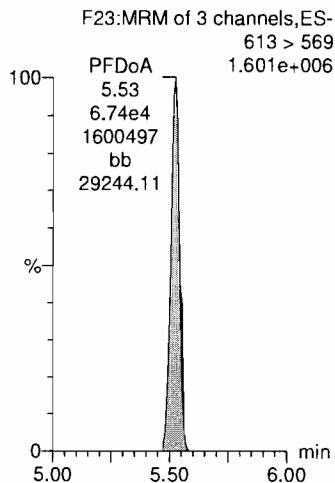
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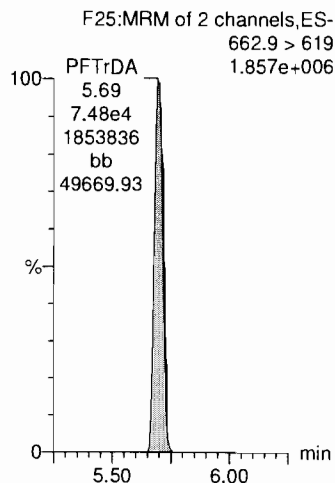
Printed: Saturday, December 15, 2018 10:05:41 Pacific Standard Time

Name: 181214P2\_11, Date: 14-Dec-2018, Time: 14:07:33, ID: ST181214P2-10 PFC CS5 537 18L1012, Description: PFC CS5 537 18L1012

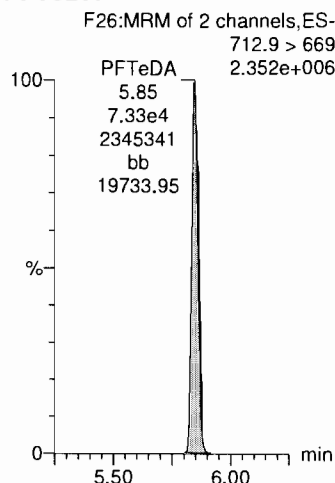
**PFDoA**



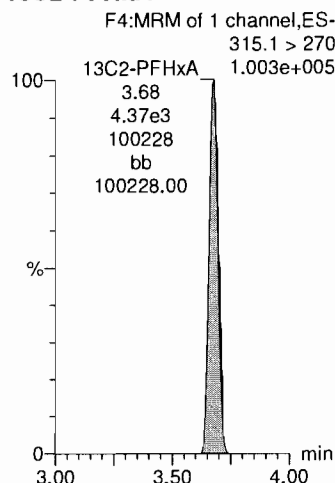
**PFTrDA**



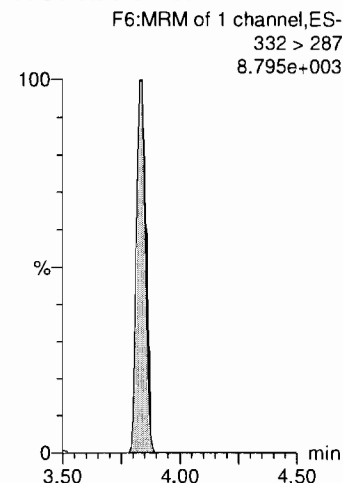
**PFTeDA**



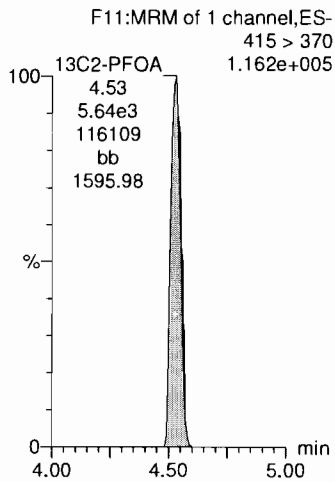
**13C2-PFHxA**



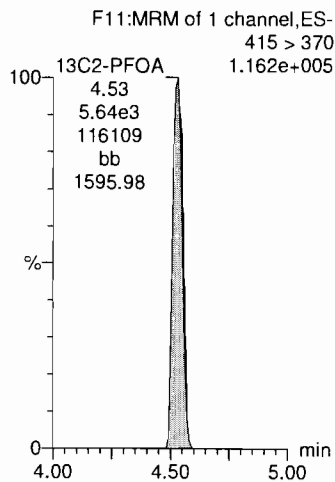
**13C3-HFPO-DA**



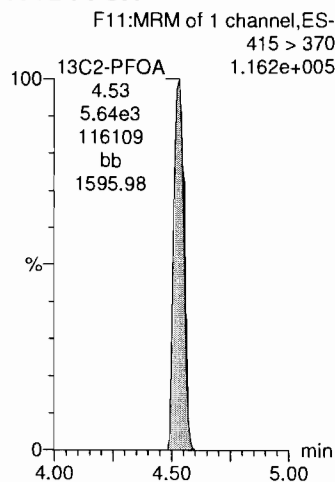
**13C2-PFOA**



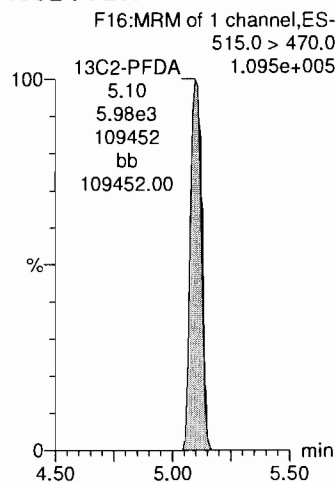
**13C2-PFOA**



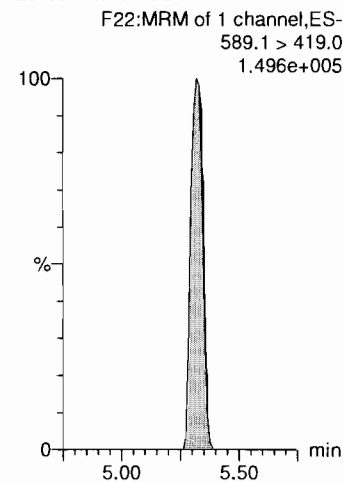
**13C2-PFOA**



**13C2-PFDA**



**d5-N-EtFOSAA**





Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-ICV.qld

Last Altered: Saturday, December 15, 2018 10:23:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:24:05 Pacific Standard Time

*(A) Compounds not present in ICV*

Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

*Udm 12/16/18*

Name: 181214P2\_13, Date: 14-Dec-2018, Time: 14:29:54, ID: ST181214P2-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18K2812

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	6.32e2	2.40e3	1.00		3.36	3.37	7.56	9.85	98.5
2	2 PFHxA	313.1 > 269.1	3.19e3	5.92e3	1.00		3.68	3.68	5.40	9.39	93.9
3	3 HFPO-DA	329>285		5.92e3	1.00		3.81			(A)	
4	4 PFHpA	363 > 319	5.25e3	5.92e3	1.00		4.15	4.16	8.88	9.62	96.2
5	5 ADONA	377.1>251		5.92e3	1.00		4.20			(A)	
6	6 PFHxS	399 > 80.0	7.31e2	2.40e3	1.00		4.26	4.26	8.75	9.57	95.7
7	7 PFOA	413 > 369	5.15e3	5.92e3	1.00		4.53	4.53	8.70	9.46	94.6
8	8 PFNA	463 > 419	4.44e3	5.92e3	1.00		4.85	4.84	7.50	8.96	89.6
9	9 PFOS	498.9 > 80.0	7.56e2	2.40e3	1.00		4.89	4.89	9.05	10.1	100.6
10	10 9CI-PF3ONS	531.1>351.1		2.40e3	1.00		5.03			(A)	
11	11 PFDA	513 > 469	4.48e3	5.92e3	1.00		5.10	5.11	7.57	9.10	91.0
12	12 N-MeFOSAA	570 > 419.1	2.07e3	1.03e4	1.00		5.22	5.22	8.08	8.89	88.9
13	13 N-EtFOSAA	584.0 > 419.1	1.45e3	1.03e4	1.00		5.32	5.33	5.64	10.1	100.5
14	14 PFUnA	563 > 519	4.89e3	5.92e3	1.00		5.35	5.33	8.27	9.56	95.6
15	15 11CI-PF3OUdS	631.1>451.1		2.40e3	1.00		5.46			(A)	
16	16 PFDoA	613 > 569	6.49e3	5.92e3	1.00		5.55	5.53	11.0	8.92	89.2
17	17 PFTDA	662.9 > 619	7.54e3	5.92e3	1.00		5.71	5.70	12.7	9.60	96.0
18	18 PFTeDA	712.9 > 669	7.60e3	5.92e3	1.00		5.87	5.85	12.8	9.69	96.9
19	19 13C2-PFHxA	315.1 > 270	4.32e3	5.92e3	1.00	0.759	3.68	3.68	7.30	9.62	96.2
20	20 13C3-HFPO-DA	332>287	3.71e2	5.92e3	1.00	0.070	3.81	3.84	0.628	8.93	89.3
21	21 13C2-PFDA	515.0 > 470.0	6.19e3	5.92e3	1.00	1.052	5.12	5.10	10.5	9.95	99.5
22	22 d5-N-EtFOSAA	589.1 > 419.0	9.39e3	1.03e4	1.00	0.831	5.33	5.32	36.6	44.0	110.0
23	23 13C2-PFOA	415 > 370	5.92e3	5.92e3	1.00	1.000	4.51	4.53	10.0	10.0	100.0
24	24 13C4-PFOS	503.0 > 80	2.40e3	2.40e3	1.00	1.000	4.87	4.89	28.7	28.7	100.0
25	25 d3-N-MeFOSAA	573.1 > 419.1	1.03e4	1.03e4	1.00	1.000	5.20	5.22	40.0	40.0	100.0

*70-130%*  
↓

*12/15/18*

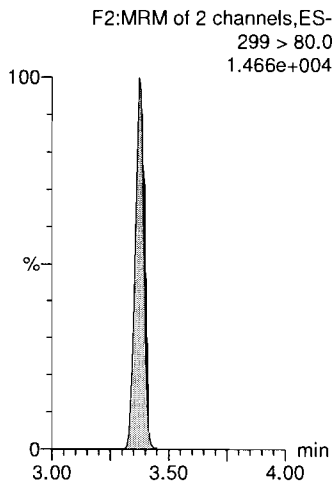
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-ICV.qld

Last Altered: Saturday, December 15, 2018 10:23:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:24:05 Pacific Standard Time

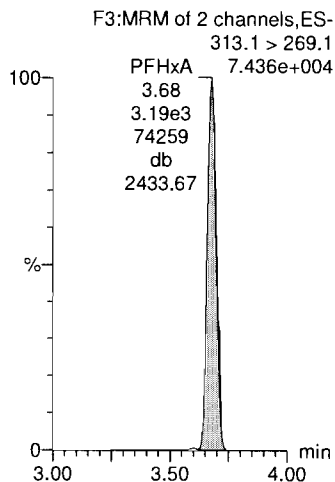
Method: D:\PFAS.PRO\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\537\_Q5\_12-14-18\_L18.cdb 15 Dec 2018 10:08:51

Name: 181214P2\_13, Date: 14-Dec-2018, Time: 14:29:54, ID: ST181214P2-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18K2812

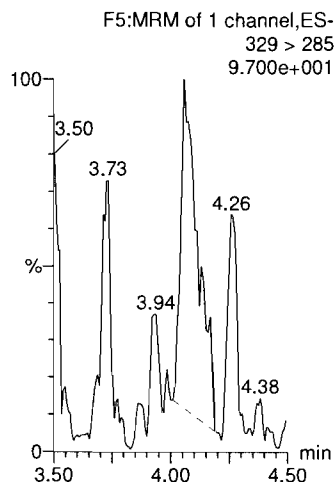
**PFBS**



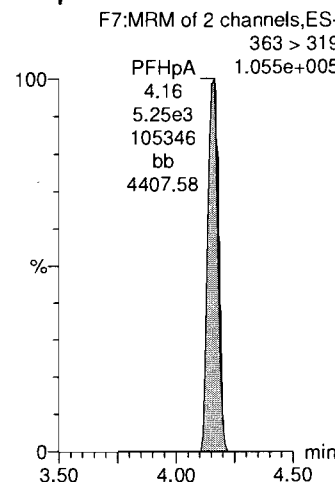
**PFHxA**



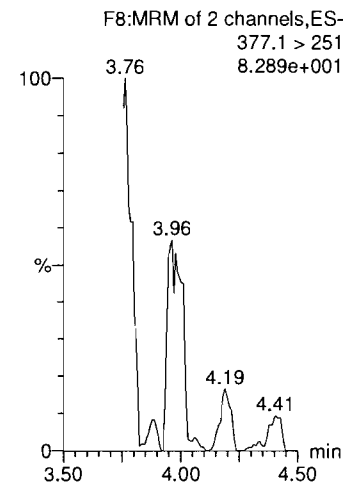
**HFPO-DA**



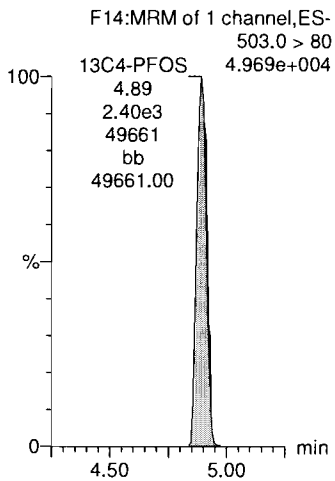
**PFHpA**



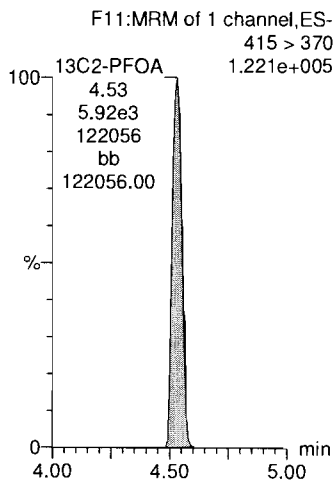
**ADONA**



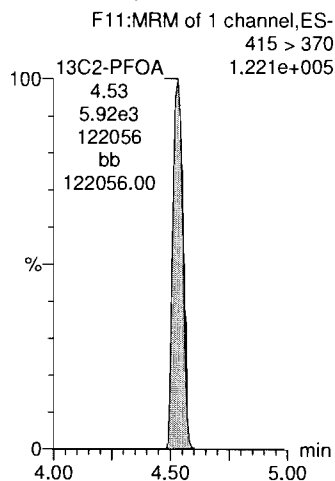
**13C4-PFOS**



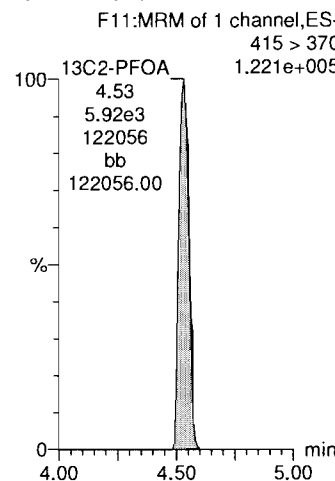
**13C2-PFOA**



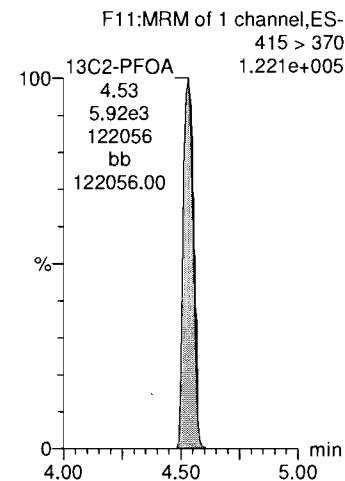
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFOA**



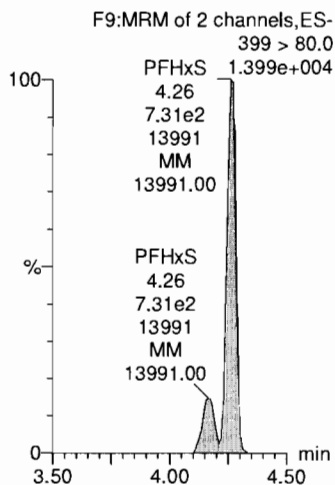
Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-ICV.qld

Last Altered: Saturday, December 15, 2018 10:23:34 Pacific Standard Time

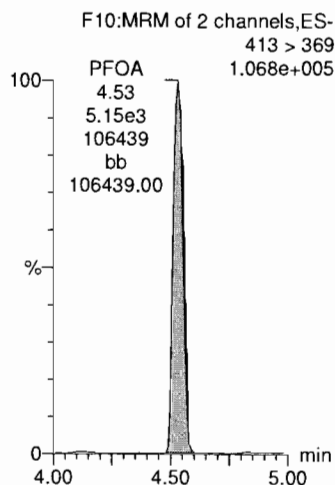
Printed: Saturday, December 15, 2018 10:24:05 Pacific Standard Time

Name: 181214P2\_13, Date: 14-Dec-2018, Time: 14:29:54, ID: ST181214P2-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18K2812

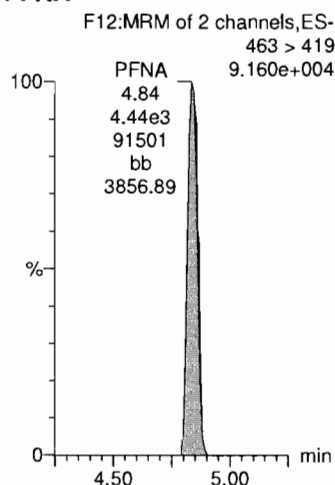
**PFHxS**



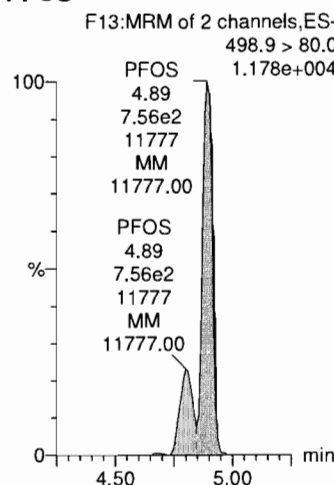
**PFOA**



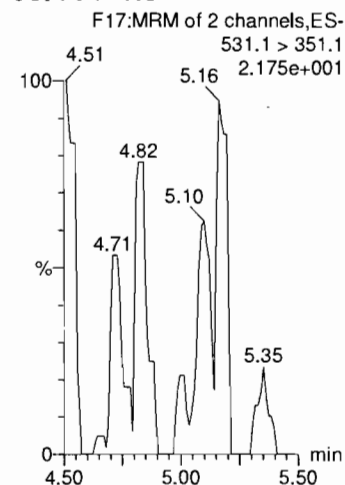
**PFNA**



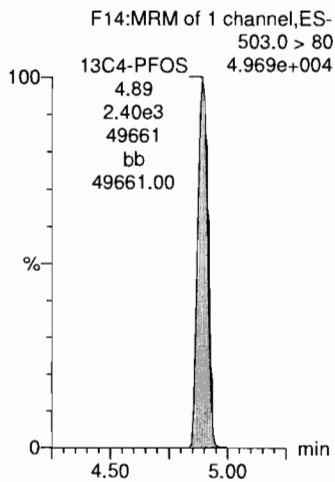
**PFOS**



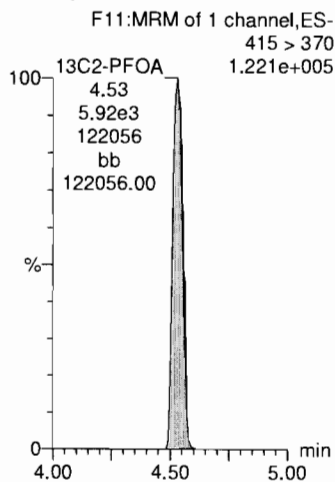
**9CI-PF3ONS**



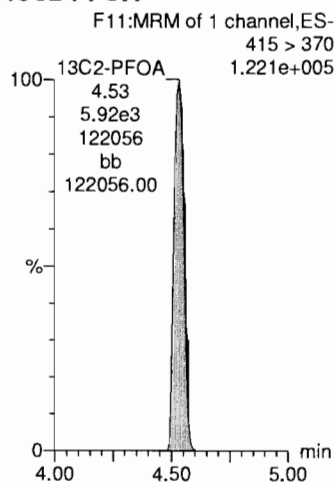
**13C4-PFOS**



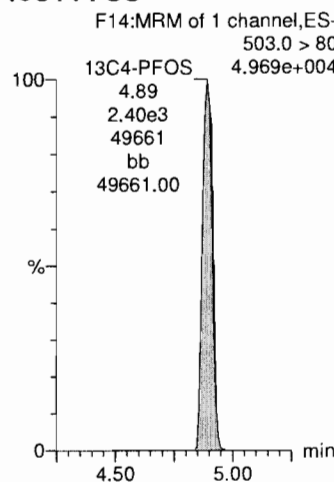
**13C2-PFOA**



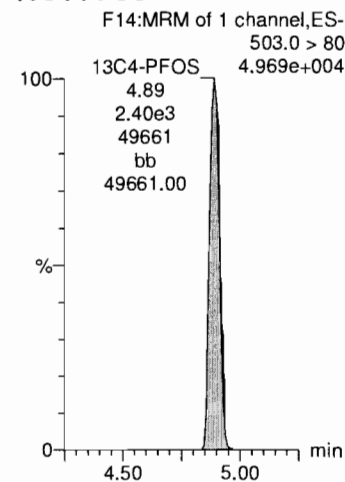
**13C2-PFOA**



**13C4-PFOS**



**13C4-PFOS**

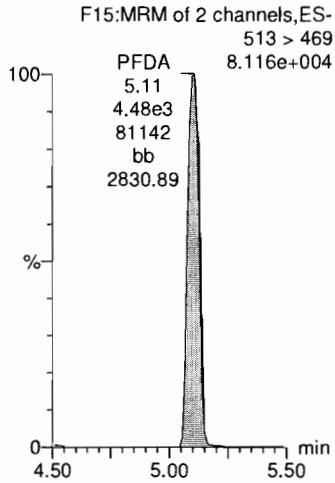


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-ICV.qld

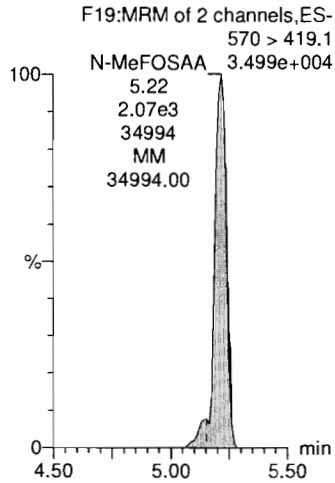
Last Altered: Saturday, December 15, 2018 10:23:34 Pacific Standard Time  
Printed: Saturday, December 15, 2018 10:24:05 Pacific Standard Time

Name: 181214P2\_13, Date: 14-Dec-2018, Time: 14:29:54, ID: ST181214P2-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18K2812

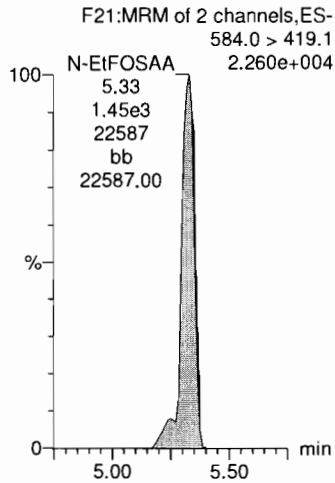
**PFDA**



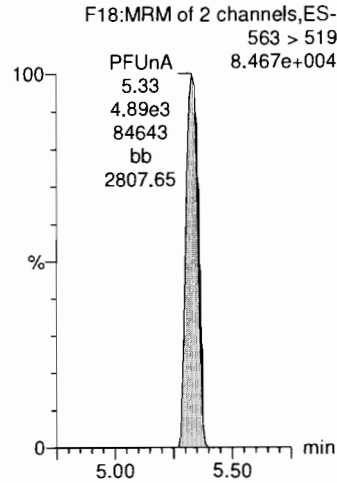
**N-MeFOSAA**



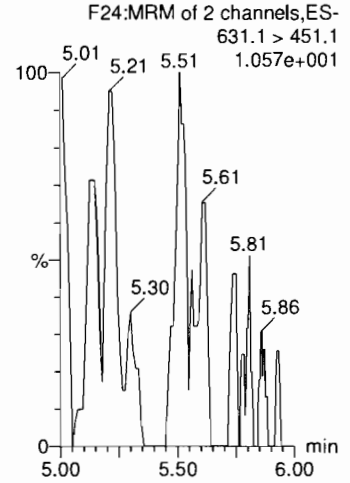
**N-EtFOSAA**



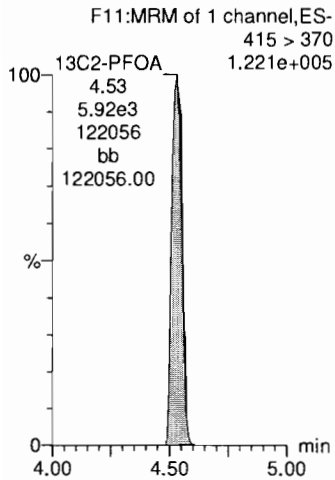
**PFUnA**



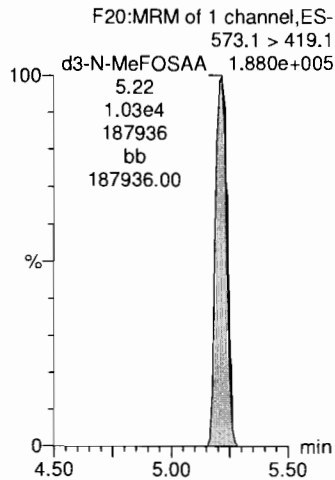
**11Cl-PF3OUdS**



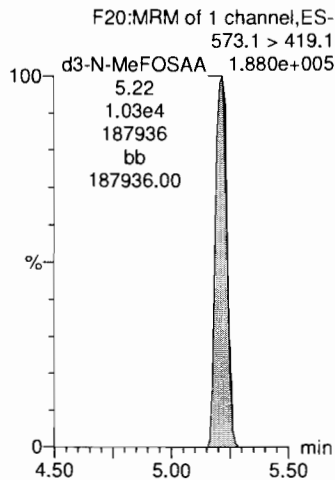
**13C2-PFOA**



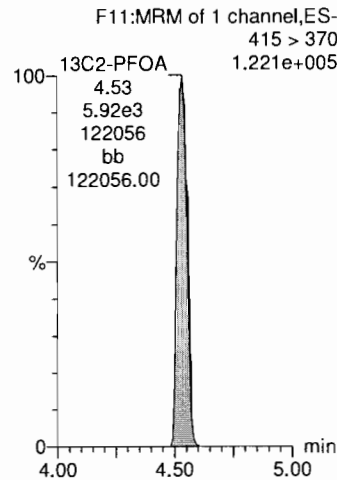
**d3-N-MeFOSAA**



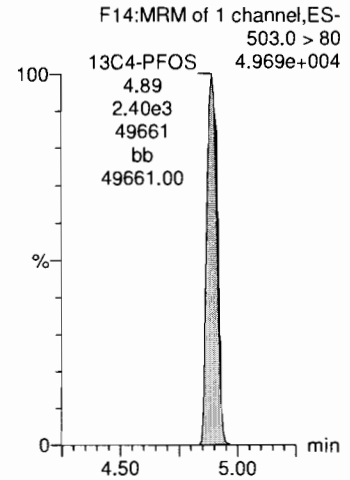
**d3-N-MeFOSAA**



**13C2-PFOA**



**13C4-PFOS**

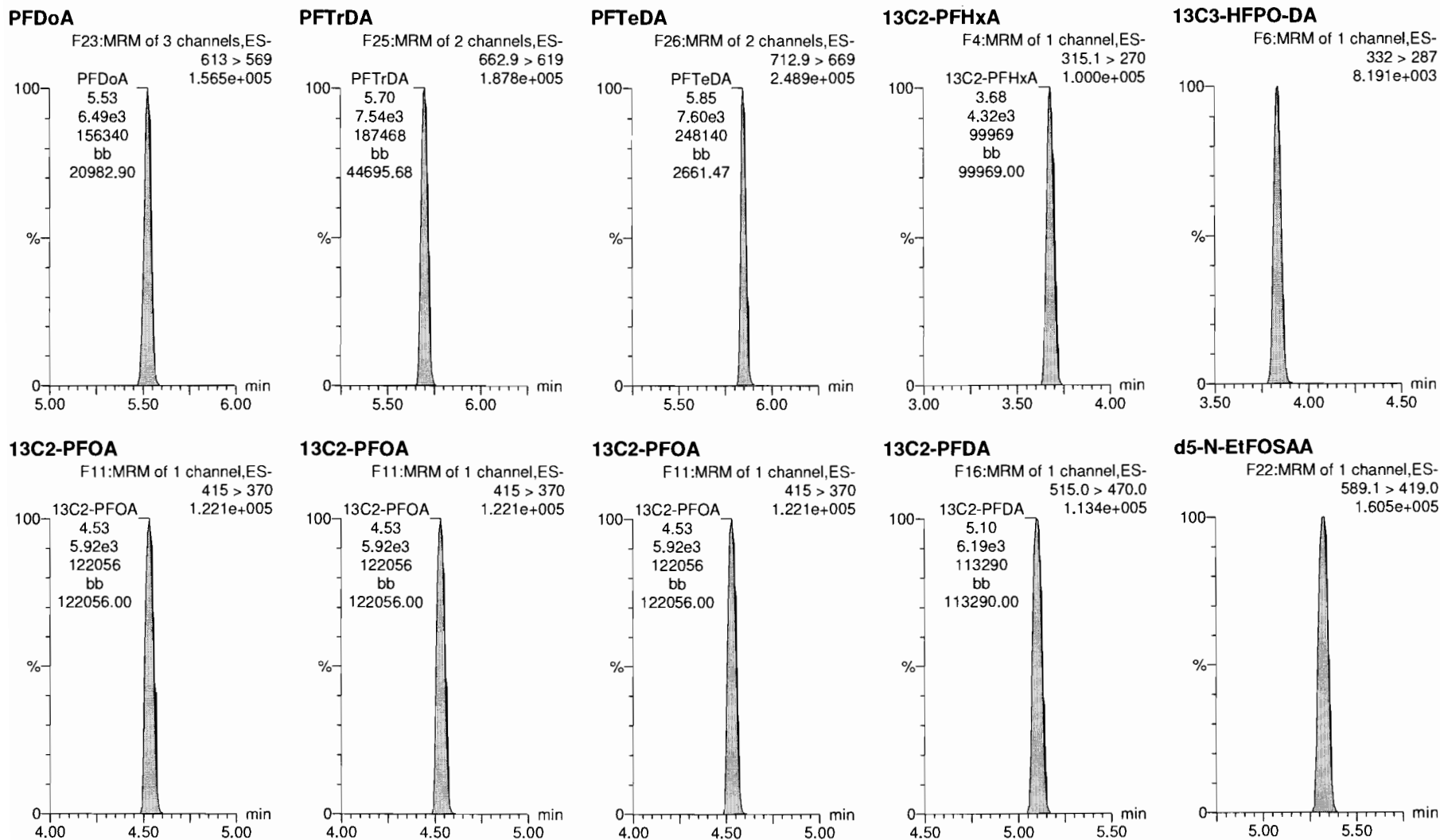


Dataset: D:\PFAS.PRO\RESULTS\181214P2\1801214P2-ICV.qld

Last Altered: Saturday, December 15, 2018 10:23:34 Pacific Standard Time

Printed: Saturday, December 15, 2018 10:24:05 Pacific Standard Time

Name: 181214P2\_13, Date: 14-Dec-2018, Time: 14:29:54, ID: ST181214P2-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18K2812



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld  
 Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
 Printed: Sunday, December 16, 2018 17:45:16 Pacific Standard Time

*low pt*  
 PFHxS = 0.456  
 PFOS = 0.764  
 PFOSAA = 0.5  
*high pt*  
 no pts dropped.

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS  
 Coefficient of Determination: R<sup>2</sup> = 0.998798  
 Calibration curve: 0.801174 \* x  
 Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )  
 Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

*DM*  
*12/16/18*

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.222	3.38	17.491	3493.818	0.144	0.2	-19.2	NO	0.999	NO	bb
2	2 181216P1_3	Standard	0.444	3.38	33.531	3342.851	0.288	0.4	-19.1	NO	0.999	NO	bb
3	3 181216P1_4	Standard	0.888	3.38	73.653	3284.573	0.644	0.8	-9.5	NO	0.999	NO	bb
4	4 181216P1_5	Standard	1.780	3.38	149.147	3409.345	1.256	1.6	-12.0	NO	0.999	NO	bb
5	5 181216P1_6	Standard	4.440	3.38	409.479	3486.550	3.371	4.2	-5.2	NO	0.999	NO	bb
6	6 181216P1_7	Standard	8.840	3.38	817.163	3215.264	7.294	9.1	3.0	NO	0.999	NO	bb
7	7 181216P1_8	Standard	22.100	3.38	1983.354	3352.274	16.980	21.2	-4.1	NO	0.999	NO	bb
8	8 181216P1_9	Standard	44.200	3.38	3989.988	3073.305	37.260	46.5	5.2	NO	0.999	NO	bb
9	9 181216P1_10	Standard	66.400	3.38	5891.392	3146.568	53.736	67.1	1.0	NO	0.999	NO	bb
10	10 181216P1_11	Standard	88.500	3.38	7891.016	3255.842	69.559	86.8	-1.9	NO	0.999	NO	bb

Compound name: PFHxA  
 Coefficient of Determination: R<sup>2</sup> = 0.999547  
 Calibration curve: 0.671619 \* x  
 Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
 Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	3.67	104.537	7279.772	0.144	0.2	-14.5	NO	1.000	NO	bb
2	2 181216P1_3	Standard	0.500	3.68	220.860	7427.756	0.297	0.4	-11.5	NO	1.000	NO	bb
3	3 181216P1_4	Standard	1.000	3.68	463.779	7242.920	0.640	1.0	-4.7	NO	1.000	NO	bb
4	4 181216P1_5	Standard	2.000	3.68	874.082	7565.223	1.155	1.7	-14.0	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	3.68	2349.989	7345.396	3.199	4.8	-4.7	NO	1.000	NO	db
6	6 181216P1_7	Standard	10.000	3.68	4675.343	7148.786	6.540	9.7	-2.6	NO	1.000	NO	db
7	7 181216P1_8	Standard	25.000	3.68	11602.997	7105.170	16.330	24.3	-2.7	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	3.68	23666.953	6980.003	33.907	50.5	1.0	NO	1.000	NO	db
9	9 181216P1_10	Standard	75.000	3.68	34241.137	6826.589	50.158	74.7	-0.4	NO	1.000	NO	db

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
 Printed: Sunday, December 16, 2018 17:45:16 Pacific Standard Time

**Compound name: PFHxA**

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10 181216P1_11	Standard	100.000	3.68	46836.113	6874.921	68.126	101.4	1.4	NO	1.000	NO	db

**Compound name: PFHpA**

Coefficient of Determination: R<sup>2</sup> = 0.999466

Calibration curve: 0.993763 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	4.16	149.187	7279.772	0.205	0.2	-17.5	NO	0.999	NO	bb
2	2 181216P1_3	Standard	0.500	4.16	350.301	7427.756	0.472	0.5	-5.1	NO	0.999	NO	bb
3	3 181216P1_4	Standard	1.000	4.16	740.453	7242.920	1.022	1.0	2.9	NO	0.999	NO	bb
4	4 181216P1_5	Standard	2.000	4.16	1294.022	7565.223	1.710	1.7	-13.9	NO	0.999	NO	dd
5	5 181216P1_6	Standard	5.000	4.16	3382.526	7345.396	4.605	4.6	-7.3	NO	0.999	NO	bb
6	6 181216P1_7	Standard	10.000	4.15	6892.133	7148.786	9.641	9.7	-3.0	NO	0.999	NO	bb
7	7 181216P1_8	Standard	25.000	4.16	17042.746	7105.170	23.986	24.1	-3.5	NO	0.999	NO	bb
8	8 181216P1_9	Standard	50.000	4.16	34893.840	6980.003	49.991	50.3	0.6	NO	0.999	NO	bb
9	9 181216P1_10	Standard	75.000	4.16	51719.480	6826.589	75.762	76.2	1.6	NO	0.999	NO	bb
10	10 181216P1_11	Standard	100.000	4.16	68528.609	6874.921	99.679	100.3	0.3	NO	0.999	NO	bb

**Compound name: PFHxS**

Coefficient of Determination: R<sup>2</sup> = 0.998258

Calibration curve: 0.86342 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.228	4.26	13.581	3493.818	0.112	0.1	-43.3	NO	0.998	NO	MMX
2	2 181216P1_3	Standard	0.456	4.27	30.819	3342.851	0.265	0.3	-32.8	NO	0.998	NO	MM
3	3 181216P1_4	Standard	0.912	4.27	85.728	3284.573	0.749	0.9	-4.9	NO	0.998	NO	MM
4	4 181216P1_5	Standard	1.820	4.26	196.459	3409.345	1.654	1.9	5.2	NO	0.998	NO	MM
5	5 181216P1_6	Standard	4.560	4.26	438.746	3486.550	3.612	4.2	-8.3	NO	0.998	NO	MM
6	6 181216P1_7	Standard	9.120	4.26	846.963	3215.264	7.560	8.8	-4.0	NO	0.998	NO	MM
7	7 181216P1_8	Standard	22.800	4.27	2244.169	3352.274	19.213	22.3	-2.4	NO	0.998	NO	MM

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**Compound name: PFHxS**

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8 181216P1_9	Standard	45.500	4.27	4511.759	3073.305	42.133	48.8	7.2	NO	0.998	NO	MM
9	9 181216P1_10	Standard	68.200	4.26	6460.586	3146.568	58.927	68.2	0.1	NO	0.998	NO	MM
10	10 181216P1_11	Standard	91.000	4.27	8721.526	3255.842	76.880	89.0	-2.2	NO	0.998	NO	MM

**Compound name: PFOA**

Coefficient of Determination: R<sup>2</sup> = 0.999111

Calibration curve: 1.03191 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	4.52	164.217	7279.772	0.226	0.2	-12.6	NO	0.999	NO	bb
2	2 181216P1_3	Standard	0.500	4.53	397.868	7427.756	0.536	0.5	3.8	NO	0.999	NO	MM
3	3 181216P1_4	Standard	1.000	4.53	785.396	7242.920	1.084	1.1	5.1	NO	0.999	NO	bb
4	4 181216P1_5	Standard	2.000	4.53	1469.264	7565.223	1.942	1.9	-5.9	NO	0.999	NO	bb
5	5 181216P1_6	Standard	5.000	4.53	3856.407	7345.396	5.250	5.1	1.8	NO	0.999	NO	bb
6	6 181216P1_7	Standard	10.000	4.53	7282.432	7148.786	10.187	9.9	-1.3	NO	0.999	NO	bb
7	7 181216P1_8	Standard	25.000	4.53	18747.688	7105.170	26.386	25.6	2.3	NO	0.999	NO	bb
8	8 181216P1_9	Standard	50.000	4.53	37620.668	6980.003	53.898	52.2	4.5	NO	0.999	NO	bb
9	9 181216P1_10	Standard	75.000	4.53	50922.457	6826.589	74.594	72.3	-3.6	NO	0.999	NO	bb
10	10 181216P1_11	Standard	100.000	4.53	70965.297	6874.921	103.223	100.0	0.0	NO	0.999	NO	bb

**Compound name: PFNA**

Coefficient of Determination: R<sup>2</sup> = 0.999549

Calibration curve: 1.06385 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	4.84	155.684	7279.772	0.214	0.2	-19.6	NO	1.000	NO	bb
2	2 181216P1_3	Standard	0.500	4.84	312.664	7427.756	0.421	0.4	-20.9	NO	1.000	NO	db
3	3 181216P1_4	Standard	1.000	4.84	728.303	7242.920	1.006	0.9	-5.5	NO	1.000	NO	db
4	4 181216P1_5	Standard	2.000	4.84	1529.174	7565.223	2.021	1.9	-5.0	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	4.84	4040.861	7345.396	5.501	5.2	3.4	NO	1.000	NO	bb



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Compound name: PFNA

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
6	6 181216P1_7	Standard	10.000	4.84	7441.592	7148.786	10.410	9.8	-2.2	NO	1.000	NO	bb
7	7 181216P1_8	Standard	25.000	4.84	18908.059	7105.170	26.612	25.0	0.1	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	4.84	36501.813	6980.003	52.295	49.2	-1.7	NO	1.000	NO	bb
9	9 181216P1_10	Standard	75.000	4.84	53839.211	6826.589	78.867	74.1	-1.2	NO	1.000	NO	bb
10	10 181216P1_11	Standard	100.000	4.84	74636.211	6874.921	108.563	102.0	2.0	NO	1.000	NO	bb

Compound name: PFOS

Coefficient of Determination: R^2 = 0.998240

Calibration curve: 0.892898 \* x

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.232	4.89	9.139	3493.818	0.075	0.1	-63.8	NO	0.998	NO	bbX
2	2 181216P1_3	Standard	0.464	4.90	61.243	3342.851	0.526	0.6	26.9	NO	0.998	NO	MM
3	3 181216P1_4	Standard	0.928	4.89	99.420	3284.573	0.869	1.0	4.8	NO	0.998	NO	MM
4	4 181216P1_5	Standard	1.860	4.89	192.313	3409.345	1.619	1.8	-2.5	NO	0.998	NO	MM
5	5 181216P1_6	Standard	4.640	4.89	501.116	3486.550	4.125	4.6	-0.4	NO	0.998	NO	MM
6	6 181216P1_7	Standard	9.240	4.89	838.634	3215.264	7.486	8.4	-9.3	NO	0.998	NO	MM
7	7 181216P1_8	Standard	23.100	4.89	2357.470	3352.274	20.183	22.6	-2.1	NO	0.998	NO	MM
8	8 181216P1_9	Standard	46.200	4.89	4731.723	3073.305	44.187	49.5	7.1	NO	0.998	NO	MM
9	9 181216P1_10	Standard	69.400	4.89	6785.001	3146.568	61.886	69.3	-0.1	NO	0.998	NO	MM
10	10 181216P1_11	Standard	92.500	4.89	9172.454	3255.842	80.854	90.6	-2.1	NO	0.998	NO	MM

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\*This page was inserted after original print out was scanned.  
 No changes were made to PFUnA. GM 12/21/18

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

**Compound name: PFUnA**

Coefficient of Determination: R<sup>2</sup> = 0.999242

Calibration curve: 1.08381 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.33	190.689	7279.772	0.262	0.2	-3.3	NO	0.999	NO	MM
2	2 181216P1_3	Standard	0.500	5.33	385.443	7427.756	0.519	0.5	-4.2	NO	0.999	NO	MM
3	3 181216P1_4	Standard	1.000	5.33	803.866	7242.920	1.110	1.0	2.4	NO	0.999	NO	bb
4	4 181216P1_5	Standard	2.000	5.33	1662.834	7565.223	2.198	2.0	1.4	NO	0.999	NO	bb
5	5 181216P1_6	Standard	5.000	5.33	3826.386	7345.396	5.209	4.8	-3.9	NO	0.999	NO	bb
6	6 181216P1_7	Standard	10.000	5.33	7367.830	7148.786	10.306	9.5	-4.9	NO	0.999	NO	bb
7	7 181216P1_8	Standard	25.000	5.33	17944.623	7105.170	25.256	23.3	-6.8	NO	0.999	NO	bb
8	8 181216P1_9	Standard	50.000	5.33	38728.938	6980.003	55.486	51.2	2.4	NO	0.999	NO	bb
9	9 181216P1_10	Standard	75.000	5.33	55392.527	6826.589	81.142	74.9	-0.2	NO	0.999	NO	bb
10	10 181216P1_11	Standard	100.000	5.33	75476.578	6874.921	109.785	101.3	1.3	NO	0.999	NO	bb

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**Compound name: PFDA**

Coefficient of Determination:  $R^2 = 0.999592$

Calibration curve:  $0.000604356 * x^2 + 1.011 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.11	187.498	7279.772	0.258	0.3	1.9	NO	1.000	NO	MM
2	2 181216P1_3	Standard	0.500	5.10	356.850	7427.756	0.480	0.5	-5.0	NO	1.000	NO	MM
3	3 181216P1_4	Standard	1.000	5.10	717.633	7242.920	0.991	1.0	-2.1	NO	1.000	NO	bb
4	4 181216P1_5	Standard	2.000	5.10	1435.611	7565.223	1.898	1.9	-6.3	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	5.10	3815.442	7345.396	5.194	5.1	2.4	NO	1.000	NO	db
6	6 181216P1_7	Standard	10.000	5.10	7397.259	7148.786	10.348	10.2	1.7	NO	1.000	NO	bb
7	7 181216P1_8	Standard	25.000	5.10	18119.055	7105.170	25.501	24.9	-0.6	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	5.10	35575.844	6980.003	50.968	49.0	-2.0	NO	1.000	NO	bb
9	9 181216P1_10	Standard	75.000	5.10	55578.395	6826.589	81.415	77.0	2.6	NO	1.000	NO	bb
10	10 181216P1_11	Standard	100.000	5.10	72918.000	6874.921	106.064	99.0	-1.0	NO	1.000	NO	bb

**Compound name: N-MeFOSAA**

Coefficient of Determination:  $R^2 = 0.999177$

Calibration curve:  $0.000436133 * x^2 + 0.811009 * x$

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.21	46.880	14678.781	0.128	0.2	-37.0	NO	0.999	NO	bbX
2	2 181216P1_3	Standard	0.500	5.22	88.120	15774.216	0.223	0.3	-44.9	NO	0.999	NO	bb
3	3 181216P1_4	Standard	1.000	5.22	260.170	15029.428	0.692	0.9	-14.7	NO	0.999	NO	bb
4	4 181216P1_5	Standard	2.000	5.22	593.033	16005.771	1.482	1.8	-8.7	NO	0.999	NO	bb
5	5 181216P1_6	Standard	5.000	5.22	1473.828	14685.746	4.014	4.9	-1.3	NO	0.999	NO	MM
6	6 181216P1_7	Standard	10.000	5.22	3116.222	14987.412	8.317	10.2	2.0	NO	0.999	NO	bb
7	7 181216P1_8	Standard	25.000	5.22	7993.521	14845.179	21.538	26.2	4.8	NO	0.999	NO	bb
8	8 181216P1_9	Standard	50.000	5.22	15429.661	14980.904	41.198	49.5	-1.0	NO	0.999	NO	MM
9	9 181216P1_10	Standard	75.000	5.22	23604.486	15094.049	62.553	74.2	-1.1	NO	0.999	NO	MM
10	10 181216P1_11	Standard	100.000	5.22	31519.744	14665.199	85.972	100.8	0.6	NO	0.999	NO	bb

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**Compound name: N-EtFOSAA**

Coefficient of Determination: R<sup>2</sup> = 0.998288

Calibration curve: 0.738007 \* x

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.33	73.682	14678.781	0.201	0.3	8.8	NO	0.998	NO	MM
2	2 181216P1_3	Standard	0.500	5.33	135.251	15774.216	0.343	0.5	-7.1	NO	0.998	NO	bb
3	3 181216P1_4	Standard	1.000	5.33	231.530	15029.428	0.616	0.8	-16.5	NO	0.998	NO	MM
4	4 181216P1_5	Standard	2.000	5.33	495.414	16005.771	1.238	1.7	-16.1	NO	0.998	NO	MM
5	5 181216P1_6	Standard	5.000	5.33	1453.554	14685.746	3.959	5.4	7.3	NO	0.998	NO	bb
6	6 181216P1_7	Standard	10.000	5.33	3147.262	14987.412	8.400	11.4	13.8	NO	0.998	NO	bb
7	7 181216P1_8	Standard	25.000	5.33	7231.548	14845.179	19.485	26.4	5.6	NO	0.998	NO	bb
8	8 181216P1_9	Standard	50.000	5.33	13749.876	14980.904	36.713	49.7	-0.5	NO	0.998	NO	MM
9	9 181216P1_10	Standard	75.000	5.33	20892.588	15094.049	55.366	75.0	0.0	NO	0.998	NO	MM
10	10 181216P1_11	Standard	100.000	5.33	26403.914	14665.199	72.018	97.6	-2.4	NO	0.998	NO	MM

**Compound name: PFDoA**

Coefficient of Determination: R<sup>2</sup> = 0.999601

Calibration curve: 1.45897 \* x

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.52	251.980	7279.772	0.346	0.2	-5.1	NO	1.000	NO	MM
2	2 181216P1_3	Standard	0.500	5.53	556.409	7427.756	0.749	0.5	2.7	NO	1.000	NO	bb
3	3 181216P1_4	Standard	1.000	5.53	1025.808	7242.920	1.416	1.0	-2.9	NO	1.000	NO	bb
4	4 181216P1_5	Standard	2.000	5.53	2125.025	7565.223	2.809	1.9	-3.7	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	5.53	5207.940	7345.396	7.090	4.9	-2.8	NO	1.000	NO	bb
6	6 181216P1_7	Standard	10.000	5.53	10121.259	7148.786	14.158	9.7	-3.0	NO	1.000	NO	bb
7	7 181216P1_8	Standard	25.000	5.53	25102.617	7105.170	35.330	24.2	-3.1	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	5.53	50176.145	6980.003	71.886	49.3	-1.5	NO	1.000	NO	bb
9	9 181216P1_10	Standard	75.000	5.53	74529.445	6826.589	109.175	74.8	-0.2	NO	1.000	NO	bb
10	10 181216P1_11	Standard	100.000	5.53	102531.109	6874.921	149.138	102.2	2.2	NO	1.000	NO	bb

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**Compound name: PFTrDA**

Coefficient of Determination:  $R^2 = 0.999746$

Calibration curve:  $1.32037 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.69	279.273	7279.772	0.384	0.3	16.2	NO	1.000	NO	MM
2	2 181216P1_3	Standard	0.500	5.69	412.237	7427.756	0.555	0.4	-15.9	NO	1.000	NO	bb
3	3 181216P1_4	Standard	1.000	5.69	951.676	7242.920	1.314	1.0	-0.5	NO	1.000	NO	bb
4	4 181216P1_5	Standard	2.000	5.69	1894.578	7565.223	2.504	1.9	-5.2	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	5.69	4623.634	7345.396	6.295	4.8	-4.7	NO	1.000	NO	bb
6	6 181216P1_7	Standard	10.000	5.69	9197.313	7148.786	12.866	9.7	-2.6	NO	1.000	NO	bb
7	7 181216P1_8	Standard	25.000	5.69	23331.930	7105.170	32.838	24.9	-0.5	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	5.69	45917.691	6980.003	65.785	49.8	-0.4	NO	1.000	NO	bb
9	9 181216P1_10	Standard	75.000	5.69	67200.344	6826.589	98.439	74.6	-0.6	NO	1.000	NO	bb
10	10 181216P1_11	Standard	100.000	5.69	92035.055	6874.921	133.871	101.4	1.4	NO	1.000	NO	bb

**Compound name: PFTeDA**

Coefficient of Determination:  $R^2 = 0.999780$

Calibration curve:  $1.38935 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	0.250	5.85	302.012	7279.772	0.415	0.3	19.4	NO	1.000	NO	MM
2	2 181216P1_3	Standard	0.500	5.85	537.414	7427.756	0.724	0.5	4.2	NO	1.000	NO	bd
3	3 181216P1_4	Standard	1.000	5.85	1014.817	7242.920	1.401	1.0	0.8	NO	1.000	NO	MM
4	4 181216P1_5	Standard	2.000	5.85	2069.611	7565.223	2.736	2.0	-1.5	NO	1.000	NO	bb
5	5 181216P1_6	Standard	5.000	5.85	5016.924	7345.396	6.830	4.9	-1.7	NO	1.000	NO	bb
6	6 181216P1_7	Standard	10.000	5.85	9998.019	7148.786	13.986	10.1	0.7	NO	1.000	NO	bb
7	7 181216P1_8	Standard	25.000	5.85	24039.469	7105.170	33.834	24.4	-2.6	NO	1.000	NO	bb
8	8 181216P1_9	Standard	50.000	5.85	49027.895	6980.003	70.241	50.6	1.1	NO	1.000	NO	bb
9	9 181216P1_10	Standard	75.000	5.85	72047.383	6826.589	105.539	76.0	1.3	NO	1.000	NO	bb
10	10 181216P1_11	Standard	100.000	5.85	94655.336	6874.921	137.682	99.1	-0.9	NO	1.000	NO	bb

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:45:16 Pacific Standard Time

**Compound name: 13C2-PFHxA**

Response Factor: 0.941897

RRF SD: 0.0178674, Relative SD: 1.89696 ✓

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	10.000	3.67	6660.728	7279.772	9.150	9.7	-2.9	NO		NO	bb
2	2 181216P1_3	Standard	10.000	3.68	6867.526	7427.756	9.246	9.8	-1.8	NO		NO	bb
3	3 181216P1_4	Standard	10.000	3.68	6787.757	7242.920	9.372	9.9	-0.5	NO		NO	bb
4	4 181216P1_5	Standard	10.000	3.68	7024.307	7565.223	9.285	9.9	-1.4	NO		NO	bb
5	5 181216P1_6	Standard	10.000	3.68	6857.706	7345.396	9.336	9.9	-0.9	NO		NO	bb
6	6 181216P1_7	Standard	10.000	3.68	6800.373	7148.786	9.513	10.1	1.0	NO		NO	bb
7	7 181216P1_8	Standard	10.000	3.68	6749.610	7105.170	9.500	10.1	0.9	NO		NO	bb
8	8 181216P1_9	Standard	10.000	3.68	6707.244	6980.003	9.609	10.2	2.0	NO		NO	bb
9	9 181216P1_10	Standard	10.000	3.68	6441.383	6826.589	9.436	10.0	0.2	NO		NO	bb
10	10 181216P1_11	Standard	10.000	3.68	6699.259	6874.921	9.744	10.3	3.5	NO		NO	bb

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:45:23 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
 Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

**Compound name: 13C2-PFDA**

Response Factor: 1.30113

RRF SD: 0.0472003, Relative SD: 3.62764 ✓

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	10.000	5.10	9462.889	7279.772	12.999	10.0	-0.1	NO		NO	bb
2	2 181216P1_3	Standard	10.000	5.10	8973.134	7427.756	12.081	9.3	-7.2	NO		NO	bb
3	3 181216P1_4	Standard	10.000	5.10	9115.787	7242.920	12.586	9.7	-3.3	NO		NO	bb
4	4 181216P1_5	Standard	10.000	5.10	9590.019	7565.223	12.676	9.7	-2.6	NO		NO	bb
5	5 181216P1_6	Standard	10.000	5.10	9788.979	7345.396	13.327	10.2	2.4	NO		NO	bb
6	6 181216P1_7	Standard	10.000	5.10	9118.710	7148.786	12.756	9.8	-2.0	NO		NO	bb
7	7 181216P1_8	Standard	10.000	5.10	9574.761	7105.170	13.476	10.4	3.6	NO		NO	bb
8	8 181216P1_9	Standard	10.000	5.10	9343.141	6980.003	13.386	10.3	2.9	NO		NO	bb
9	9 181216P1_10	Standard	10.000	5.10	9169.674	6826.589	13.432	10.3	3.2	NO		NO	bb
10	10 181216P1_11	Standard	10.000	5.10	9209.241	6874.921	13.395	10.3	3.0	NO		NO	bb

**Compound name: d5-N-EtFOSAA**

Response Factor: 1.07043

RRF SD: 0.0813957, Relative SD: 7.60405 ✓

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	40.000	5.32	16976.545	14678.781	46.261	43.2	8.0	NO		NO	bb
2	2 181216P1_3	Standard	40.000	5.32	16409.121	15774.216	41.610	38.9	-2.8	NO		NO	bb
3	3 181216P1_4	Standard	40.000	5.32	16910.600	15029.428	45.007	42.0	5.1	NO		NO	bb
4	4 181216P1_5	Standard	40.000	5.32	14229.097	16005.771	35.560	33.2	-16.9	NO		NO	bb
5	5 181216P1_6	Standard	40.000	5.32	17024.764	14685.746	46.371	43.3	8.3	NO		NO	bb
6	6 181216P1_7	Standard	40.000	5.32	15653.707	14987.412	41.778	39.0	-2.4	NO		NO	bb
7	7 181216P1_8	Standard	40.000	5.32	16854.422	14845.179	45.414	42.4	6.1	NO		NO	bb
8	8 181216P1_9	Standard	40.000	5.32	16050.691	14980.904	42.856	40.0	0.1	NO		NO	bb
9	9 181216P1_10	Standard	40.000	5.32	15395.029	15094.049	40.798	38.1	-4.7	NO		NO	bb

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
 Printed: Sunday, December 16, 2018 17:45:23 Pacific Standard Time

**Compound name: d5-N-EtFOSAA**

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10 181216P1_11	Standard	40.000	5.32	15587.449	14665.199	42.515	39.7	-0.7	NO		NO	bb

**Compound name: 13C2-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0 ✓

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	10.000	4.52	7279.772	7279.772	10.000	10.0	0.0	NO		NO	bb
2	2 181216P1_3	Standard	10.000	4.53	7427.756	7427.756	10.000	10.0	0.0	NO		NO	bb
3	3 181216P1_4	Standard	10.000	4.53	7242.920	7242.920	10.000	10.0	0.0	NO		NO	bb
4	4 181216P1_5	Standard	10.000	4.53	7565.223	7565.223	10.000	10.0	0.0	NO		NO	bb
5	5 181216P1_6	Standard	10.000	4.53	7345.396	7345.396	10.000	10.0	0.0	NO		NO	bb
6	6 181216P1_7	Standard	10.000	4.53	7148.786	7148.786	10.000	10.0	0.0	NO		NO	bb
7	7 181216P1_8	Standard	10.000	4.53	7105.170	7105.170	10.000	10.0	0.0	NO		NO	bb
8	8 181216P1_9	Standard	10.000	4.53	6980.003	6980.003	10.000	10.0	0.0	NO		NO	bb
9	9 181216P1_10	Standard	10.000	4.53	6826.589	6826.589	10.000	10.0	0.0	NO		NO	bb
10	10 181216P1_11	Standard	10.000	4.53	6874.921	6874.921	10.000	10.0	0.0	NO		NO	bb

**Compound name: 13C4-PFOS** /

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	28.700	4.89	3493.818	3493.818	28.700	28.7	0.0	NO		NO	bb
2	2 181216P1_3	Standard	28.700	4.89	3342.851	3342.851	28.700	28.7	0.0	NO		NO	bb
3	3 181216P1_4	Standard	28.700	4.89	3284.573	3284.573	28.700	28.7	0.0	NO		NO	bb
4	4 181216P1_5	Standard	28.700	4.89	3409.345	3409.345	28.700	28.7	0.0	NO		NO	bb
5	5 181216P1_6	Standard	28.700	4.89	3486.550	3486.550	28.700	28.7	0.0	NO		NO	bb
6	6 181216P1_7	Standard	28.700	4.89	3215.264	3215.264	28.700	28.7	0.0	NO		NO	bb
7	7 181216P1_8	Standard	28.700	4.89	3352.274	3352.274	28.700	28.7	0.0	NO		NO	bb



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
 Printed: Sunday, December 16, 2018 17:45:23 Pacific Standard Time

**Compound name: 13C4-PFOS**

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8 181216P1_9	Standard	28.700	4.89	3073.305	3073.305	28.700	28.7	0.0	NO		NO	bb
9	9 181216P1_10	Standard	28.700	4.89	3146.568	3146.568	28.700	28.7	0.0	NO		NO	bb
10	10 181216P1_11	Standard	28.700	4.89	3255.842	3255.842	28.700	28.7	0.0	NO		NO	bb

**Compound name: d3-N-MeFOSAA**

Response Factor: 1

RRF SD: 0, Relative SD: 0 ✓

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181216P1_2	Standard	40.000	5.21	14678.781	14678.781	40.000	40.0	0.0	NO		NO	bb
2	2 181216P1_3	Standard	40.000	5.21	15774.216	15774.216	40.000	40.0	0.0	NO		NO	bb
3	3 181216P1_4	Standard	40.000	5.21	15029.428	15029.428	40.000	40.0	0.0	NO		NO	bb
4	4 181216P1_5	Standard	40.000	5.21	16005.771	16005.771	40.000	40.0	0.0	NO		NO	bb
5	5 181216P1_6	Standard	40.000	5.21	14685.746	14685.746	40.000	40.0	0.0	NO		NO	bd
6	6 181216P1_7	Standard	40.000	5.21	14987.412	14987.412	40.000	40.0	0.0	NO		NO	bb
7	7 181216P1_8	Standard	40.000	5.22	14845.179	14845.179	40.000	40.0	0.0	NO		NO	bb
8	8 181216P1_9	Standard	40.000	5.22	14980.904	14980.904	40.000	40.0	0.0	NO		NO	bb
9	9 181216P1_10	Standard	40.000	5.21	15094.049	15094.049	40.000	40.0	0.0	NO		NO	bb
10	10 181216P1_11	Standard	40.000	5.21	14665.199	14665.199	40.000	40.0	0.0	NO		NO	bb

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:44:05 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181216P1\_2, Date: 16-Dec-2018, Time: 14:57:09, ID: ST181216P1-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBS	24	0.9988	NO	
2	2 PFHxA	23	0.9995	NO	
3	4 PFHpA	23	0.9995	NO	
4	6 PFHxS	24	0.9983	NO	
5	7 PFOA	23	0.9991	NO	
6	8 PFNA	23	0.9995	NO	
7	9 PFOS	24	0.9982	NO	
8	11 PFDA	23	0.9996	NO	
9	12 N-MeFOSAA	25	0.9992	NO	
10	13 N-EtFOSAA	25	0.9983	NO	
11	16 PFDaA	23	0.9996	NO	
12	17 PFTTrDA	23	0.9997	NO	
13	18 PFTeDA	23	0.9998	NO	
14	19 13C2-PFHxA	23		NO	1.897

Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:44:12 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181216P1\_2, Date: 16-Dec-2018, Time: 14:57:09, ID: ST181216P1-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

	# Name	IS#	CoD	CoD Flag	%RSD
1	21 13C2-PFDA	23		NO	3.628
2	22 d5-N-EtFOSAA	25		NO	7.604
3	23 13C2-PFOA	23		NO	0.000
4	24 13C4-PFOS	24		NO	0.000
5	25 d3-N-MeFOSAA	25		NO	0.000

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Sunday, December 16, 2018 17:57:48 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:57:58 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06

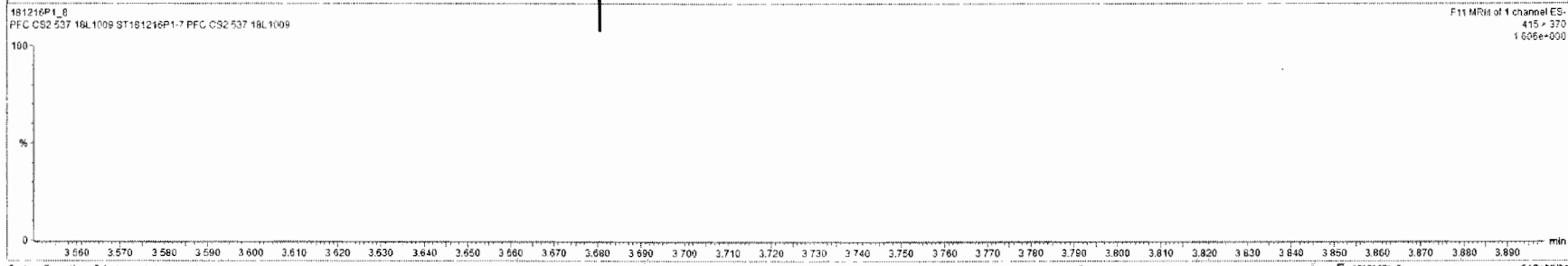
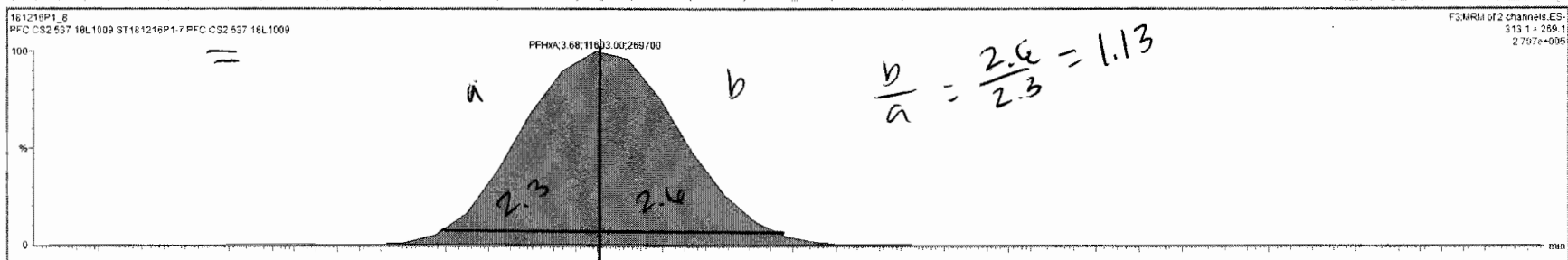
Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS

#	Name	ID	Acq Date	Acq Time
1	1 181216P1_1	IPA	16-Dec-18	14:45:45
2	2 181216P1_2	ST181216P1-1 PFC CS-4 537 18L1003	16-Dec-18	14:57:09
3	3 181216P1_3	ST181216P1-2 PFC CS-3 537 18L1004	16-Dec-18	15:08:28
4	4 181216P1_4	ST181216P1-3 PFC CS-2 537 18L1005	16-Dec-18	15:19:39
5	5 181216P1_5	ST181216P1-4 PFC CS-1 537 18L1006	16-Dec-18	15:30:50
6	6 181216P1_6	ST181216P1-5 PFC CS0 537 18L1007	16-Dec-18	15:42:09
7	7 181216P1_7	ST181216P1-6 PFC CS1 537 18L1008	16-Dec-18	15:53:20
8	8 181216P1_8	ST181216P1-7 PFC CS2 537 18L1009	16-Dec-18	16:04:31
9	9 181216P1_9	ST181216P1-8 PFC CS3 537 18L1010	16-Dec-18	16:15:41
10	10 181216P1_10	ST181216P1-9 PFC CS4 537 18L1011	16-Dec-18	16:26:52
11	11 181216P1_11	ST181216P1-10 PFC CS5 537 18L1012	16-Dec-18	16:38:11
12	12 181216P1_12	IPA	16-Dec-18	16:49:23
13	13 181216P1_13	ST181216P1-1 PFC ICV 537 18L1013	16-Dec-18	17:00:49
14	14 181216P1_14	IPA	16-Dec-18	17:12:00

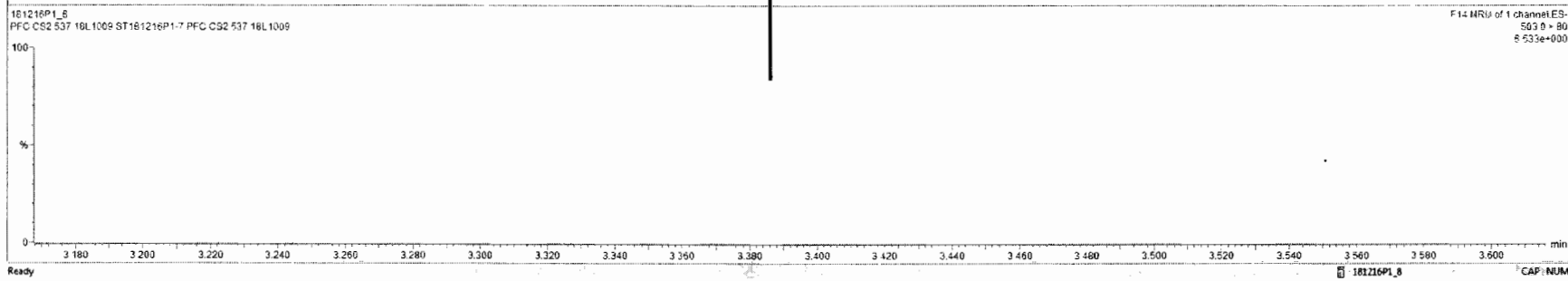
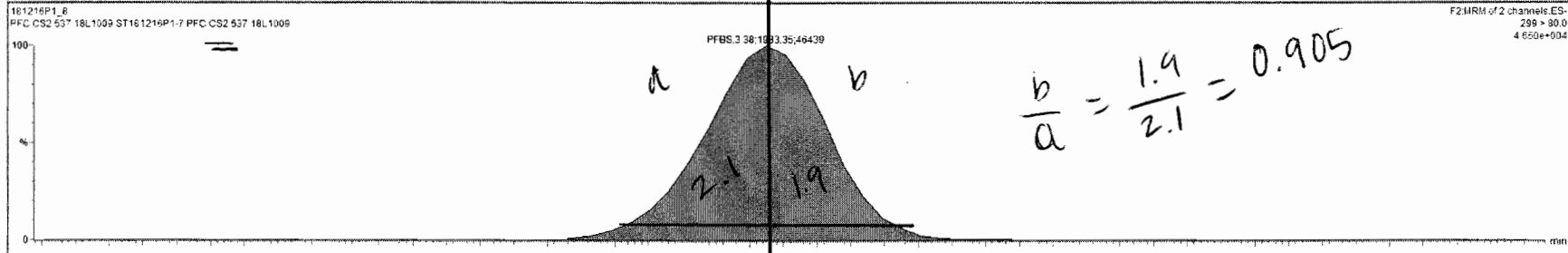
181216P1\_8 - ST181216P1-7 PFC CS2 537 18L1009 - PFC CS2 537 18L1009

Y	Name	RT	Resp	IS Resp	Conc	%Dev	RRF NRSD	RRF Mean	RRF SD	Coeff. Of D.	CD Flag	Conc. Dev. Allowed	Primary Flags
1	PFBS	3.38	1.96e3	3.35e3	21.2	-4.1			0.9988	NO	NO	0.000	bb
2	PFHA	3.68	1.16e3	7.11e3	24.3	-2.7			0.9995	NO	NO	0.000	bb
3	PFPO-DA	3.84	1.58e3	7.11e3	22.1	-11.5			0.9978	NO	NO	0.000	bd
4	PFHdA	4.16	1.70e4	7.11e3	24.1	-3.5			0.9995	NO	NO	0.000	bb
5	ADONA	4.23	2.43e4	7.11e3	23.9	-4.4			0.9989	NO	NO	0.000	bb
6	PFHxS	4.27	2.24e3	3.35e3	22.3	-2.4			0.9983	NO	NO	0.000	MLF
7	PFDA	4.53	1.87e4	7.11e3	25.6	2.3			0.9991	NO	NO	0.000	bb
8	PFNA	4.84	1.89e4	7.11e3	25.0	0.1			0.9995	NO	NO	0.000	bb
9	PFOS	4.88	2.36e3	3.35e3	22.6	-2.1			0.9962	NO	NO	0.000	MLF
10	SCLPFXONS	5.06	8.77e3	3.35e3	22.9	-8.2			0.9972	NO	NO	0.000	bb
11	PFDA	5.10	1.81e4	7.11e3	24.8	-0.6			0.9996	NO	NO	0.000	bb
12	NLEFOSAA	5.22	7.99e3	1.48e4	26.2	4.8			0.9962	NO	NO	0.000	bb
13	NLEFOSAA	5.33	7.23e3	1.45e4	26.4	5.6			0.9963	NO	NO	0.000	bb
14	PFUNA	5.33	1.78e4	7.11e3	22.3	-8.8			0.9992	NO	NO	0.000	bb
15	11CLPF300dS	5.47	9.79e3	3.35e3	23.5	-5.9			0.9981	NO	NO	0.000	bb



181216P1\_8 - ST181216P1-7 PFC CS2 537 18L1009 - PFC CS2 537 18L1009

#	Name	RT	Resp	S Resp	Conc.	%Dev	RRF %RSD	RRF Mean	RRF SD	Coeff. Of D.	CD Flag	Conc. Dev. Allowed	Primary Flags
1	PFBS	3.38	1.58e3	3.35e3	212	-4.1				0.9988	NO	0.000	bb
2	PFNA	3.68	1.18e4	7.11e3	243	-2.7				0.9995	NO	0.000	bb
3	PFPO-DA	3.84	1.58e3	7.11e3	221	-11.5				0.9978	NO	0.000	bd
4	PFHpA	4.16	1.70e4	7.11e3	241	-3.5				0.9995	NO	0.000	bb
5	ADONA	4.22	2.43e4	7.11e3	239	-4.4				0.9989	NO	0.000	bb
6	PFHxS	4.27	2.24e3	3.35e3	223	-2.4				0.9983	NO	0.000	bb
7	PFOA	4.53	1.67e4	7.11e3	256	2.3				0.9991	NO	0.000	bb
8	PFNA	4.84	1.88e4	7.11e3	250	0.1				0.9995	NO	0.000	bb
9	PFOS	4.89	2.35e3	3.35e3	226	-2.1				0.9982	NO	0.000	MM
10	SCl-PF3ONS	5.05	8.77e3	3.35e3	229	-8.2				0.9972	NO	0.000	bb
11	PFOA	5.16	1.31e4	7.11e3	249	-0.6				0.9996	NO	0.000	bb
12	HEFOSAA	5.22	7.39e3	1.48e4	262	4.8				0.9992	NO	0.000	bb
13	HEFOSAA	5.33	7.29e3	1.48e4	264	5.6				0.9983	NO	0.000	bb
14	PFUNA	5.33	1.78e4	7.11e3	233	-6.8				0.9992	NO	0.000	bb
15	11Cl-PF3OUdS	5.47	9.78e3	3.35e3	235	-5.8				0.9961	NO	0.000	bb



## Ical RPD

Compound 23: 13C2-PFOA

high 7565.223 rpd  
 low 6826.589 10.26464

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST181216P1-1 PFC CS-4 537 18L1003	181216P1_Standard	10	4.52	7279.772	7279.772	bb
2	ST181216P1-2 PFC CS-3 537 18L1004	181216P1_Standard	10	4.53	7427.756	7427.756	bb
3	ST181216P1-3 PFC CS-2 537 18L1005	181216P1_Standard	10	4.53	7242.920	7242.92	bb
4	ST181216P1-4 PFC CS-1 537 18L1006	181216P1_Standard	10	4.53	7565.223	7565.223	bb
5	ST181216P1-5 PFC CS0 537 18L1007	181216P1_Standard	10	4.53	7345.396	7345.396	bb
6	ST181216P1-6 PFC CS1 537 18L1008	181216P1_Standard	10	4.53	7148.786	7148.786	bb
7	ST181216P1-7 PFC CS2 537 18L1009	181216P1_Standard	10	4.53	7105.170	7105.17	bb
8	ST181216P1-8 PFC CS3 537 18L1010	181216P1_Standard	10	4.53	6980.003	6980.003	bb
9	ST181216P1-9 PFC CS4 537 18L1011	181216P1_Standard	10	4.53	6826.589	6826.589	bb
10	ST181216P1-10 PFC CS5 537 18L1012	181216P1_Standard	10	4.53	6874.921	6874.921	bb
					AVG	7179.654	

Compound 24: 13C4-PFOS

high 3493.818 rpd  
 low 3073.305 12.80661

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST181216P1-1 PFC CS-4 537 18L1003	181216P1_Standard	28.7	4.89	3493.818	3493.818	bb
2	ST181216P1-2 PFC CS-3 537 18L1004	181216P1_Standard	28.7	4.89	3342.851	3342.851	bb
3	ST181216P1-3 PFC CS-2 537 18L1005	181216P1_Standard	28.7	4.89	3284.573	3284.573	bb
4	ST181216P1-4 PFC CS-1 537 18L1006	181216P1_Standard	28.7	4.89	3409.345	3409.345	bb
5	ST181216P1-5 PFC CS0 537 18L1007	181216P1_Standard	28.7	4.89	3486.550	3486.55	bb
6	ST181216P1-6 PFC CS1 537 18L1008	181216P1_Standard	28.7	4.89	3215.264	3215.264	bb
7	ST181216P1-7 PFC CS2 537 18L1009	181216P1_Standard	28.7	4.89	3352.274	3352.274	bb
8	ST181216P1-8 PFC CS3 537 18L1010	181216P1_Standard	28.7	4.89	3073.305	3073.305	bb
9	ST181216P1-9 PFC CS4 537 18L1011	181216P1_Standard	28.7	4.89	3146.568	3146.568	bb
10	ST181216P1-10 PFC CS5 537 18L1012	181216P1_Standard	28.7	4.89	3255.842	3255.842	bb

AVG 3306.039

Compound 25: d3-N-MeFOSAA

high 16005.77 rpd  
low 14665.2 8.741634

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1 ST181216P1-1 PFC CS-4 537 18L1003	181216P1_Standard		40	5.21	14678.78	14678.78	bb
2 ST181216P1-2 PFC CS-3 537 18L1004	181216P1_Standard		40	5.21	15774.22	15774.22	bb
3 ST181216P1-3 PFC CS-2 537 18L1005	181216P1_Standard		40	5.21	15029.43	15029.43	bb
4 ST181216P1-4 PFC CS-1 537 18L1006	181216P1_Standard		40	5.21	16005.77	16005.77	bb
5 ST181216P1-5 PFC CS0 537 18L1007	181216P1_Standard		40	5.21	14685.75	14685.75	bd
6 ST181216P1-6 PFC CS1 537 18L1008	181216P1_Standard		40	5.21	14987.41	14987.41	bb
7 ST181216P1-7 PFC CS2 537 18L1009	181216P1_Standard		40	5.22	14845.18	14845.18	bb
8 ST181216P1-8 PFC CS3 537 18L1010	181216P1_Standard		40	5.22	14980.90	14980.9	bb
9 ST181216P1-9 PFC CS4 537 18L1011	181216P1_Standard		40	5.21	15094.05	15094.05	bb
10 ST181216P1-10 PFC CS5 537 18L1012	181216P1_Standard		40	5.21	14665.20	14665.2	bb
				AVG	15074.67		



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

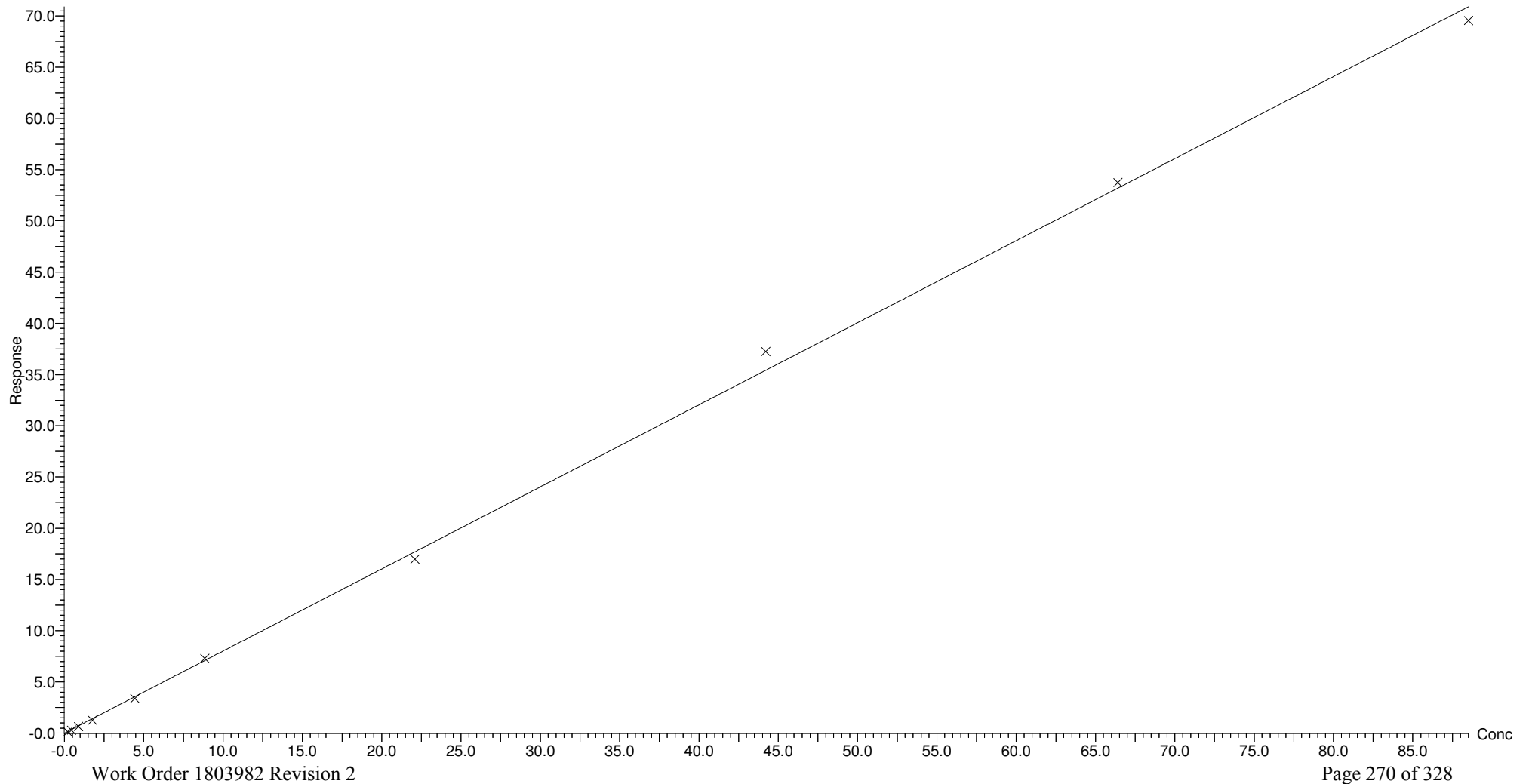
\*Calibration graphs inserted after initial review. No changes made.  
GM 12/23/18

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Compound name: PFBS  
Coefficient of Determination:  $R^2 = 0.998798$   
Calibration curve:  $0.801174 * x$   
Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

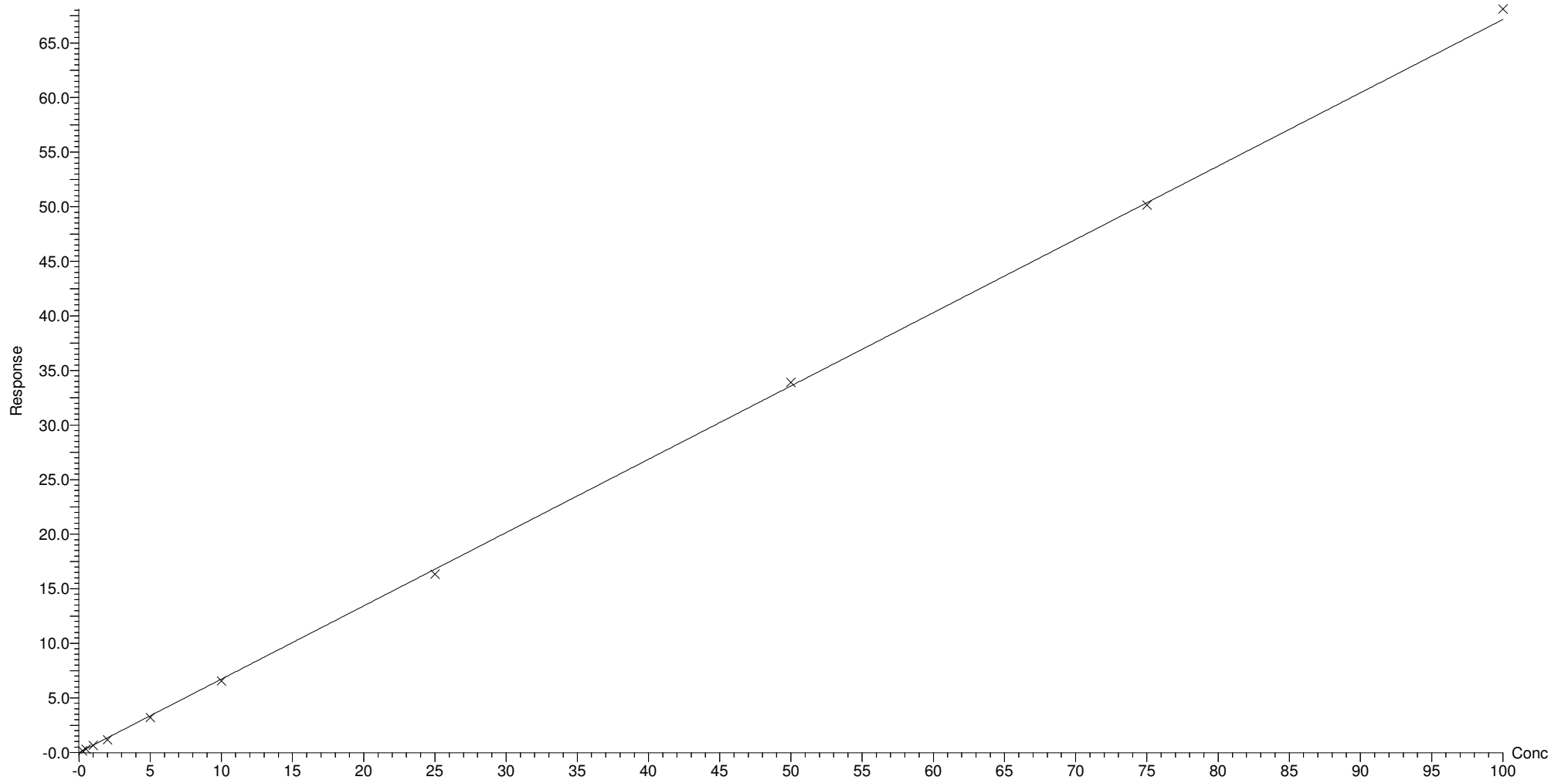
Compound name: PFHxA

Coefficient of Determination:  $R^2 = 0.999547$

Calibration curve:  $0.671619 * x$

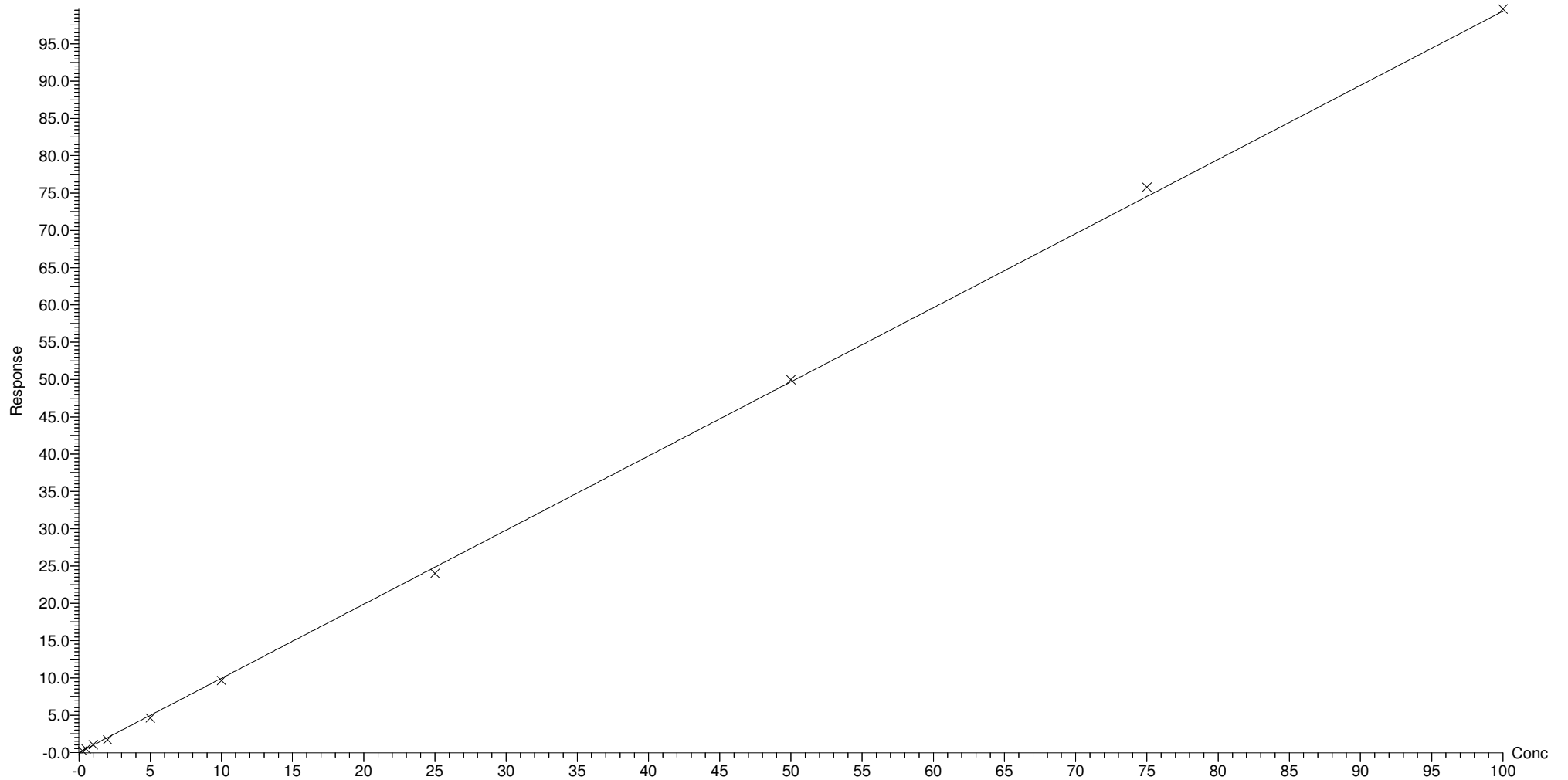
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

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Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

Compound name: PFHpA  
Coefficient of Determination:  $R^2 = 0.999466$   
Calibration curve:  $0.993763 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

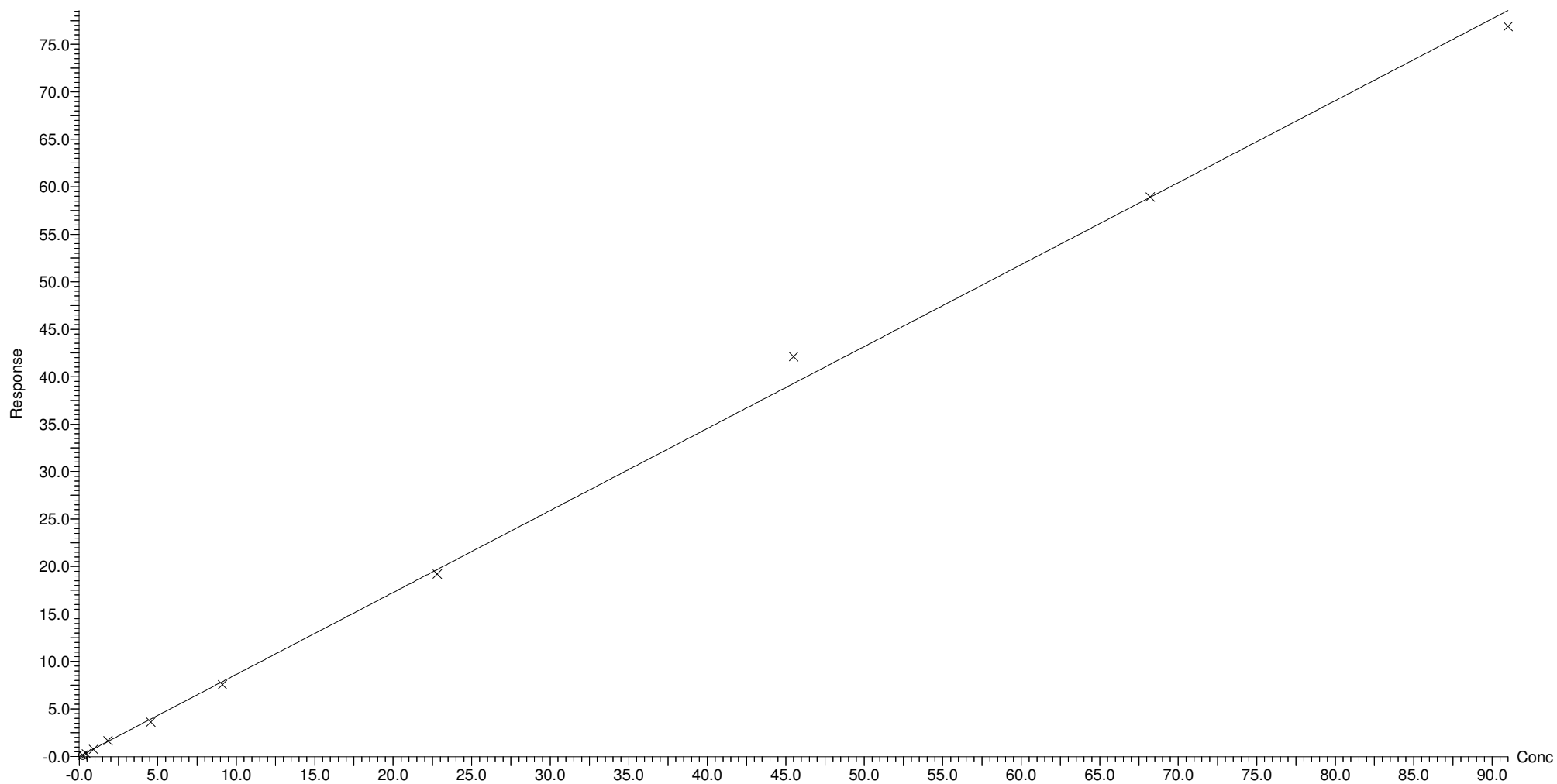
Compound name: PFHxS

Coefficient of Determination:  $R^2 = 0.998258$

Calibration curve:  $0.86342 * x$

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

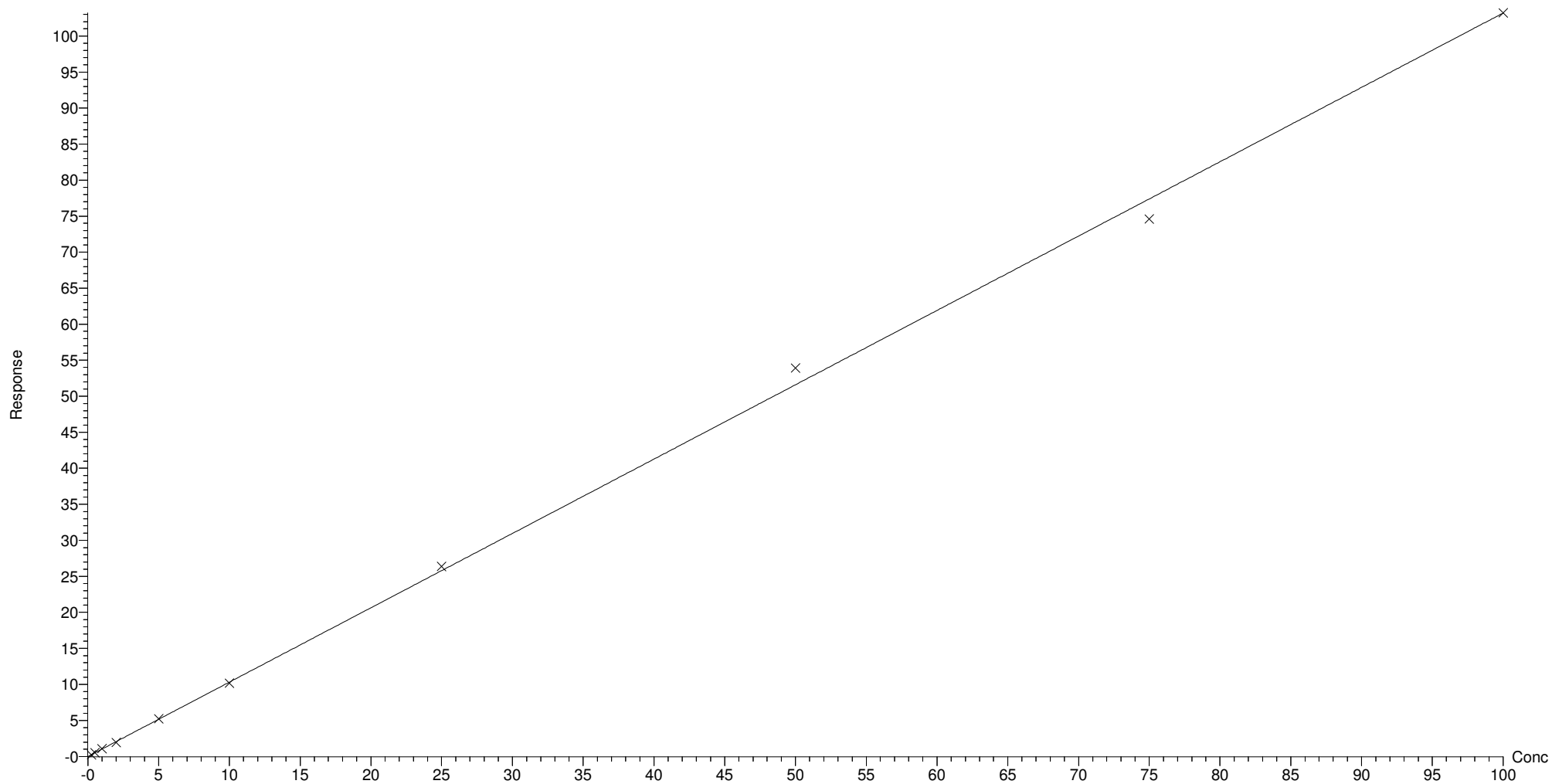
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.999111$

Calibration curve:  $1.03191 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

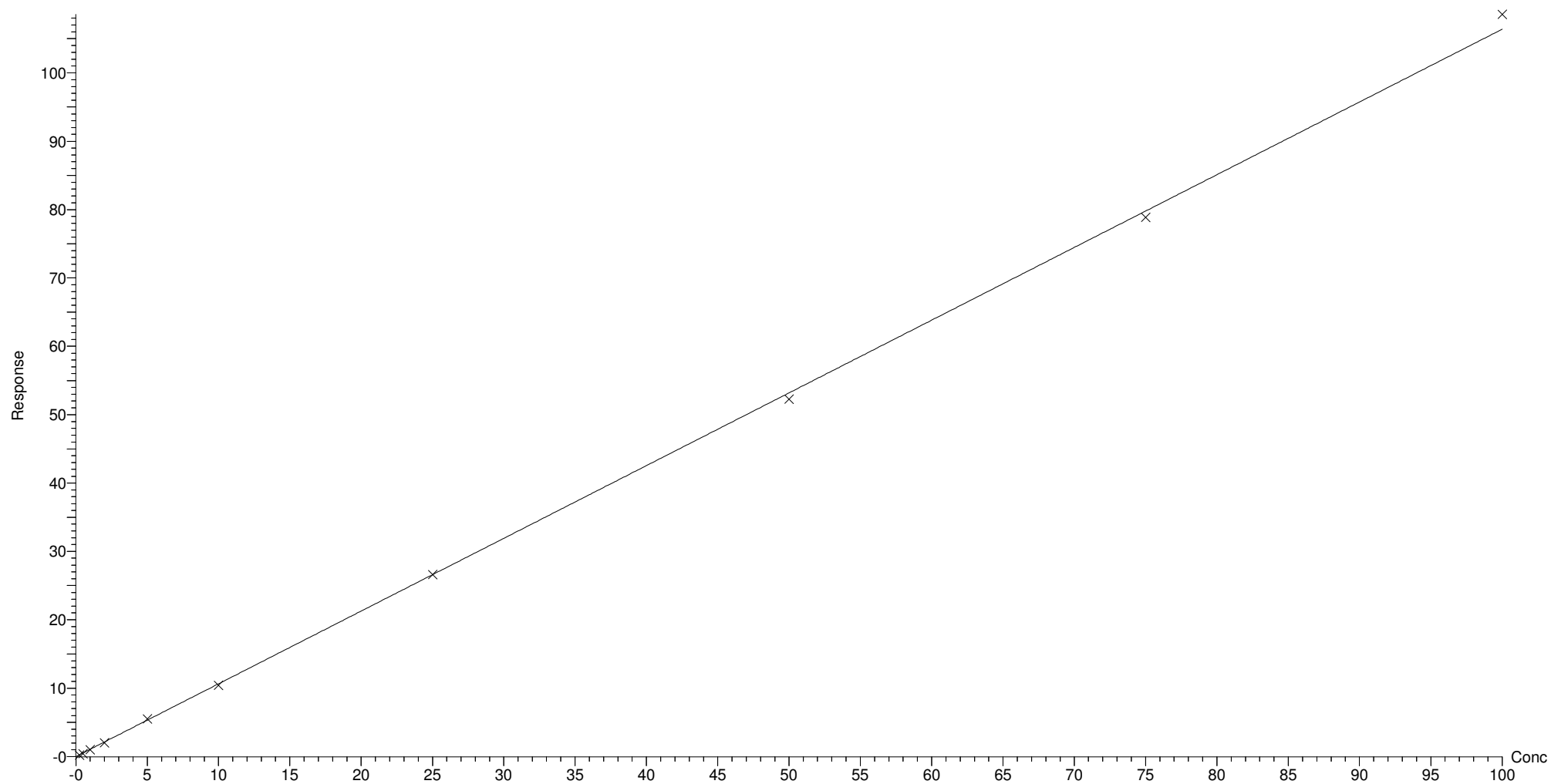
Compound name: PFNA

Coefficient of Determination:  $R^2 = 0.999549$

Calibration curve:  $1.06385 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

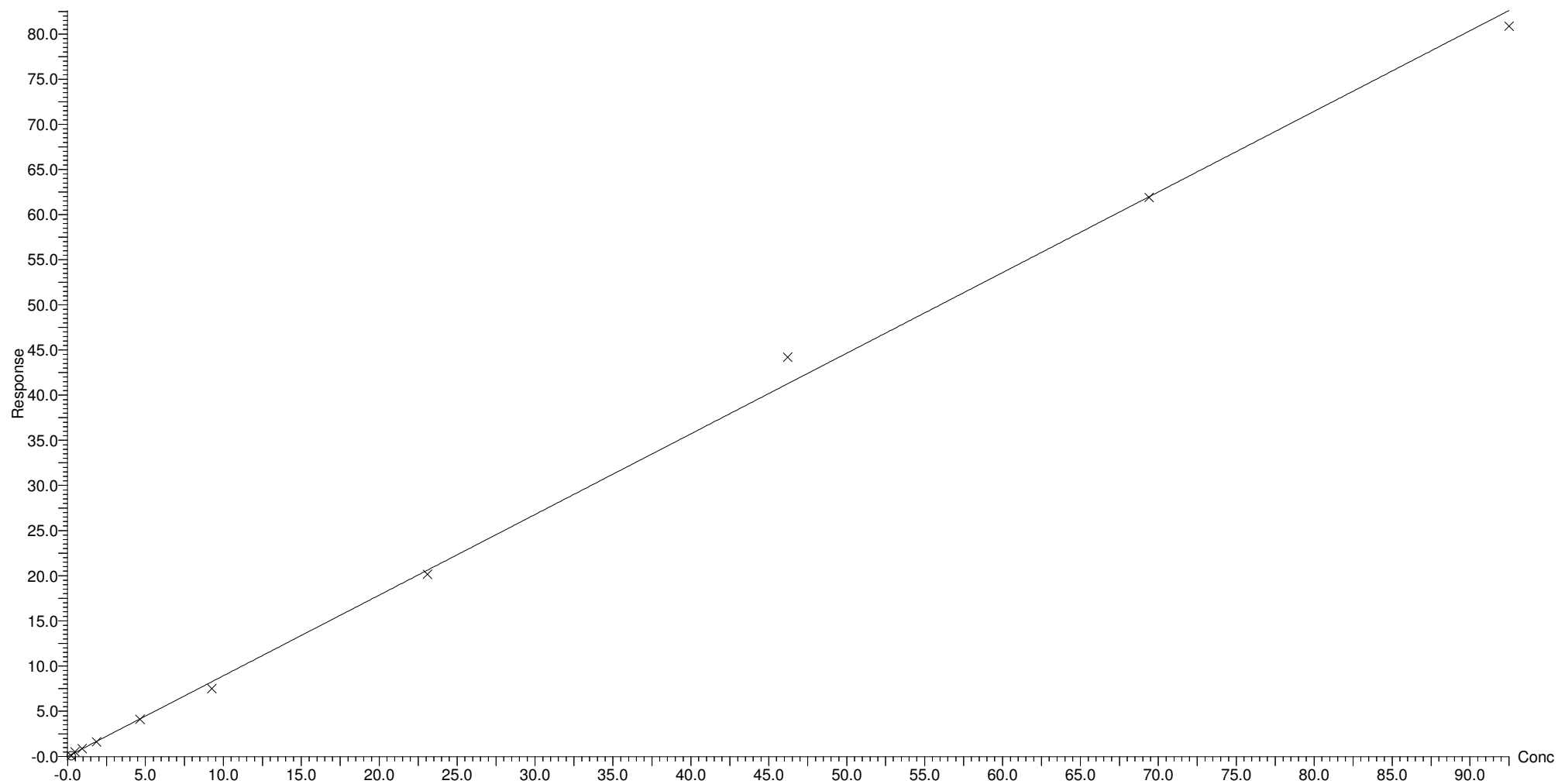
Compound name: PFOS

Coefficient of Determination:  $R^2 = 0.998240$

Calibration curve:  $0.892898 * x$

Response type: Internal Std ( Ref 24 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

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Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

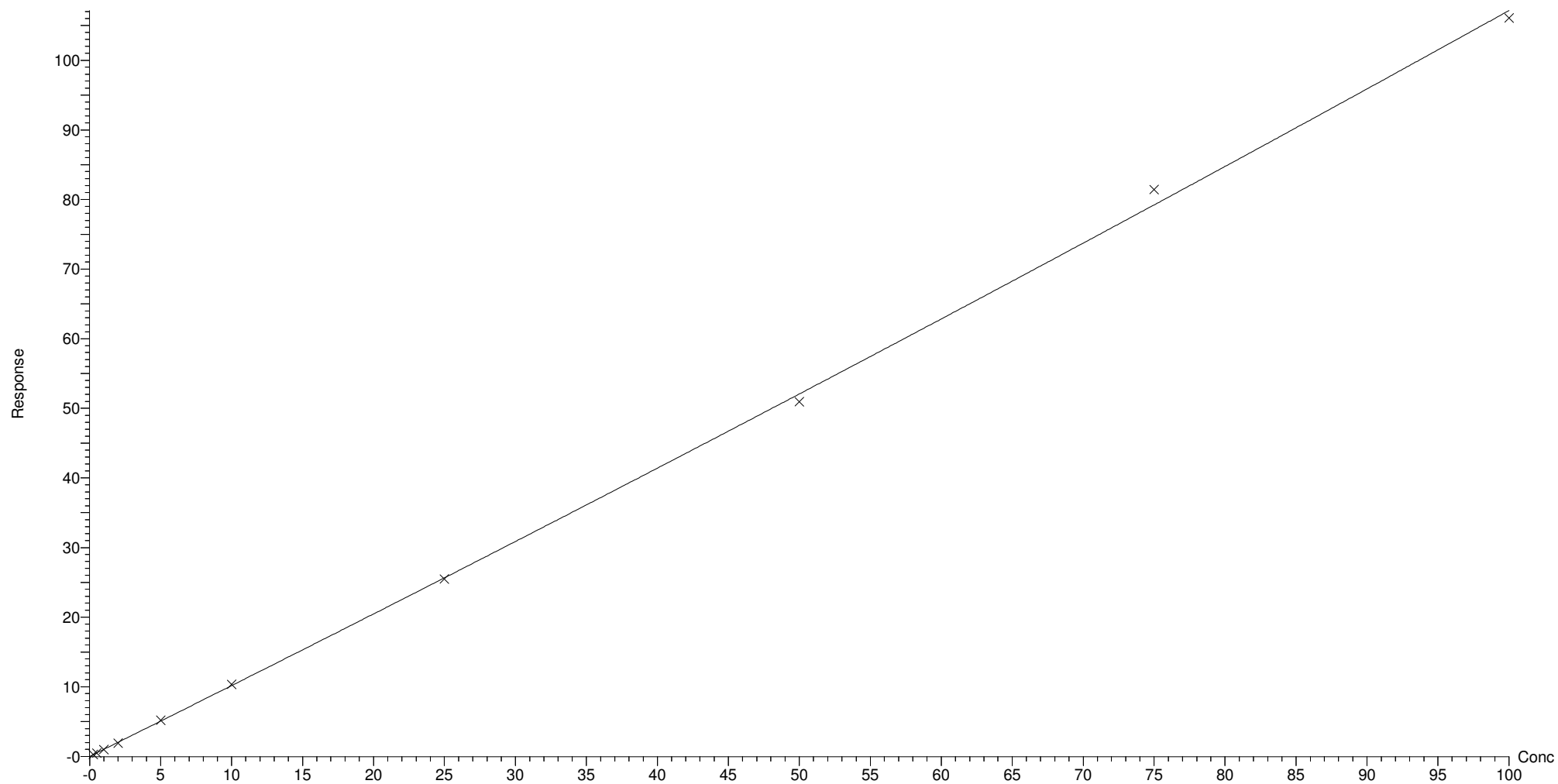
Compound name: PFDA

Coefficient of Determination:  $R^2 = 0.999592$

Calibration curve:  $0.000604356 * x^2 + 1.011 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None





Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

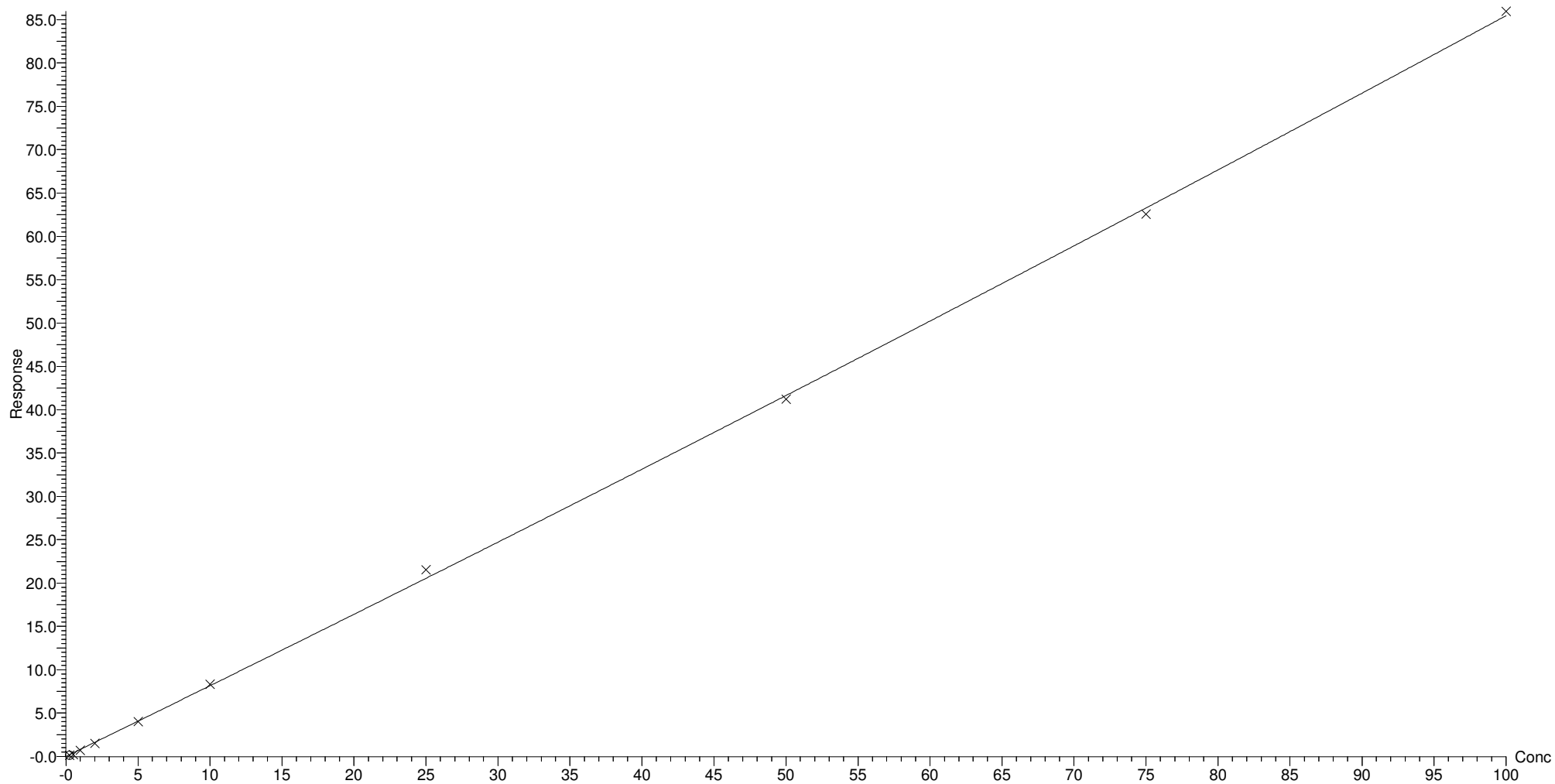
Compound name: N-MeFOSAA

Coefficient of Determination:  $R^2 = 0.999177$

Calibration curve:  $0.000436133 * x^2 + 0.811009 * x$

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

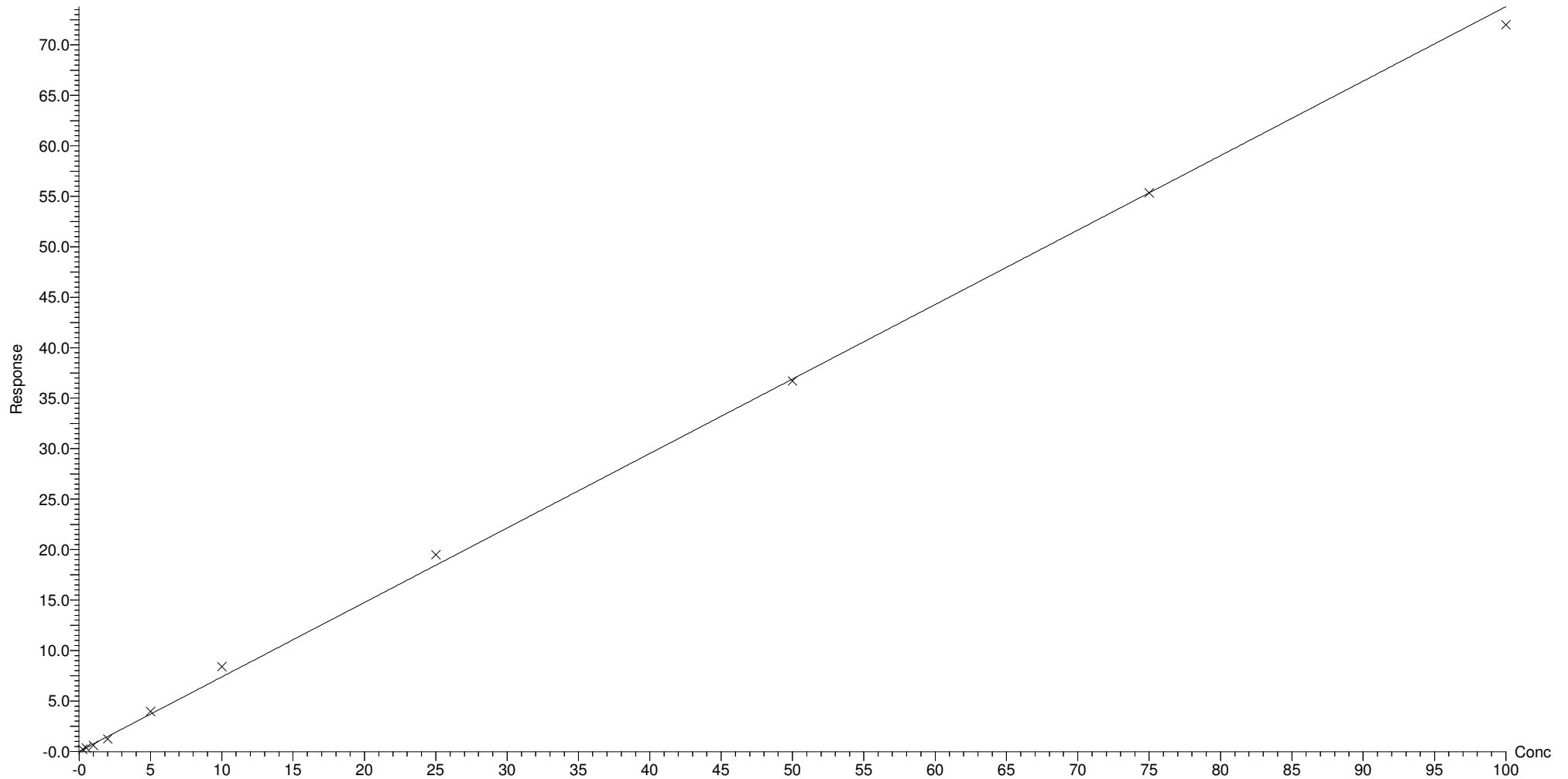
Compound name: N-EtFOSAA

Coefficient of Determination:  $R^2 = 0.998288$

Calibration curve:  $0.738007 * x$

Response type: Internal Std ( Ref 25 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

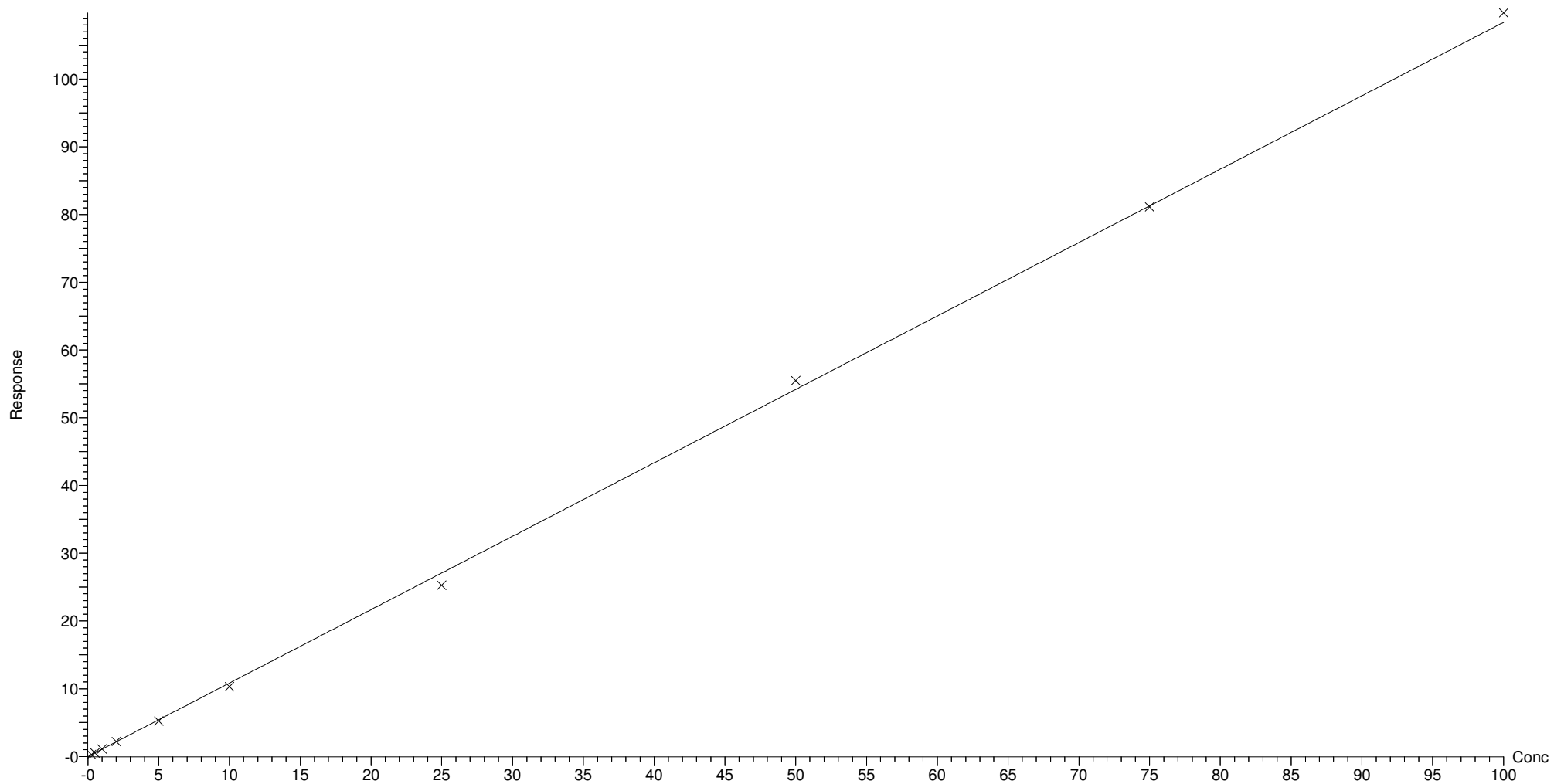
Compound name: PFUnA

Coefficient of Determination:  $R^2 = 0.999242$

Calibration curve:  $1.08381 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

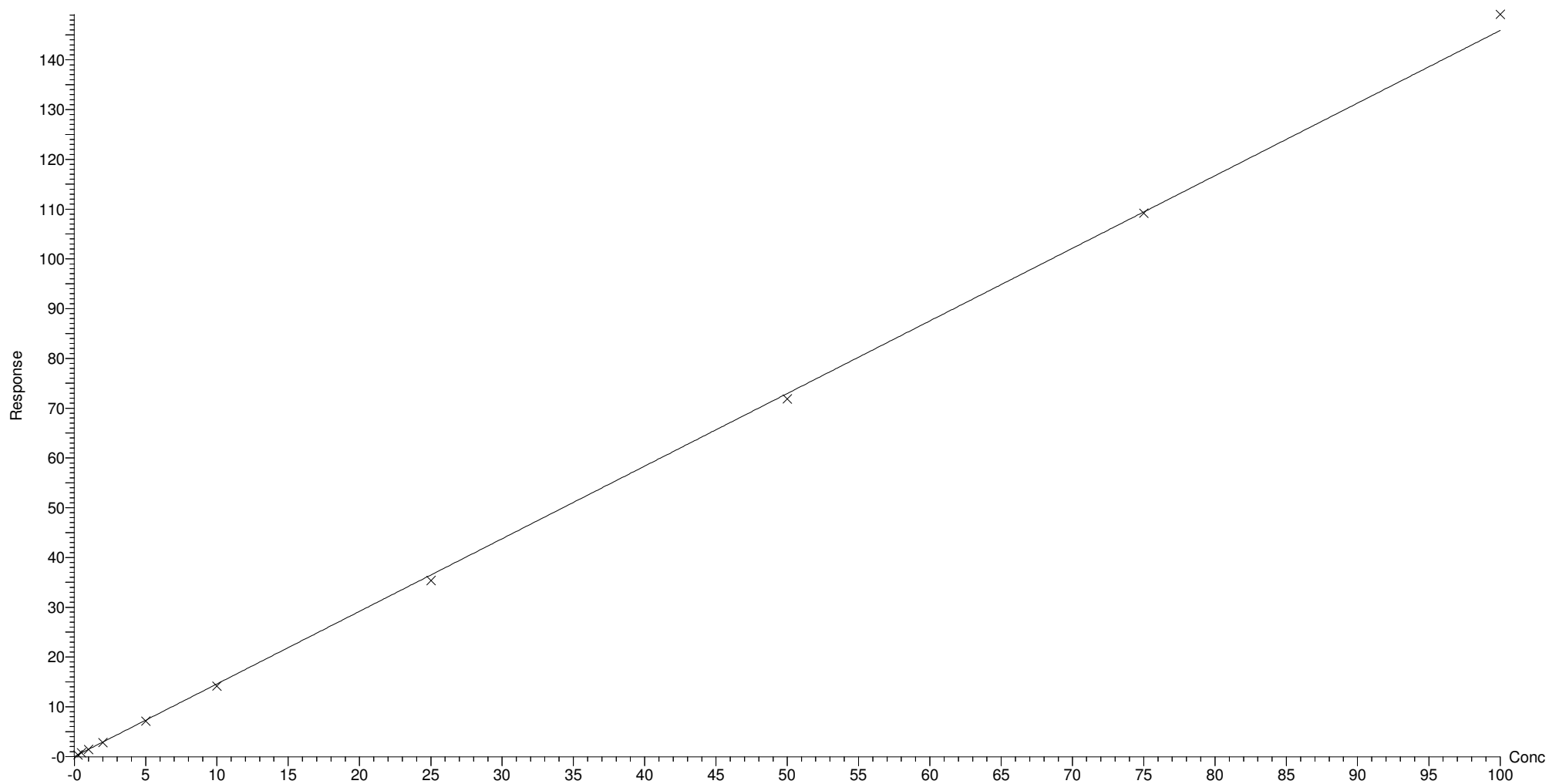
Compound name: PFDoA

Coefficient of Determination:  $R^2 = 0.999601$

Calibration curve:  $1.45897 * x$

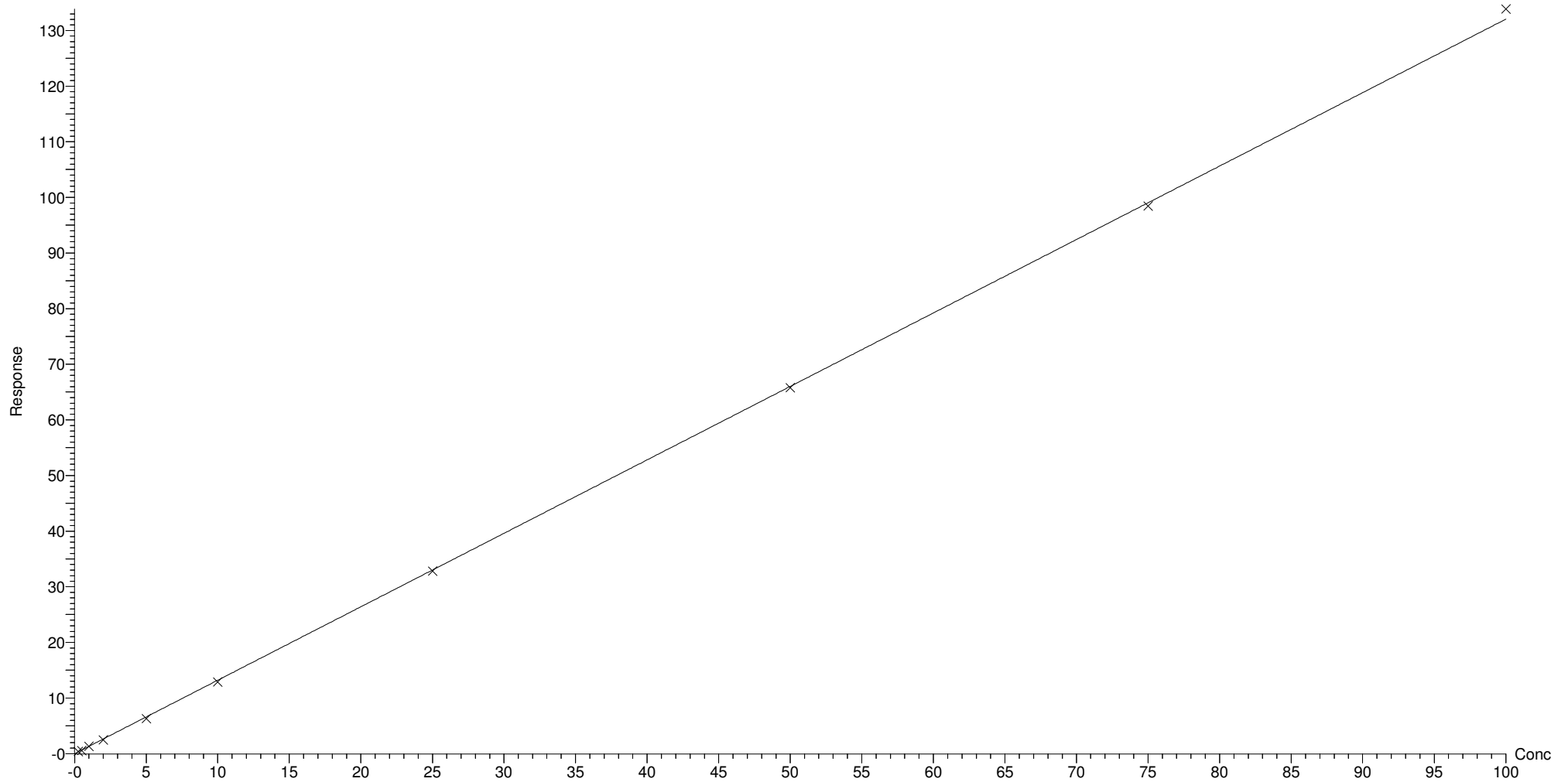
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld  
Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

Compound name: PFTrDA  
Coefficient of Determination:  $R^2 = 0.999746$   
Calibration curve:  $1.32037 * x$   
Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )  
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: P:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 23, 2018 12:03:01 Pacific Standard Time

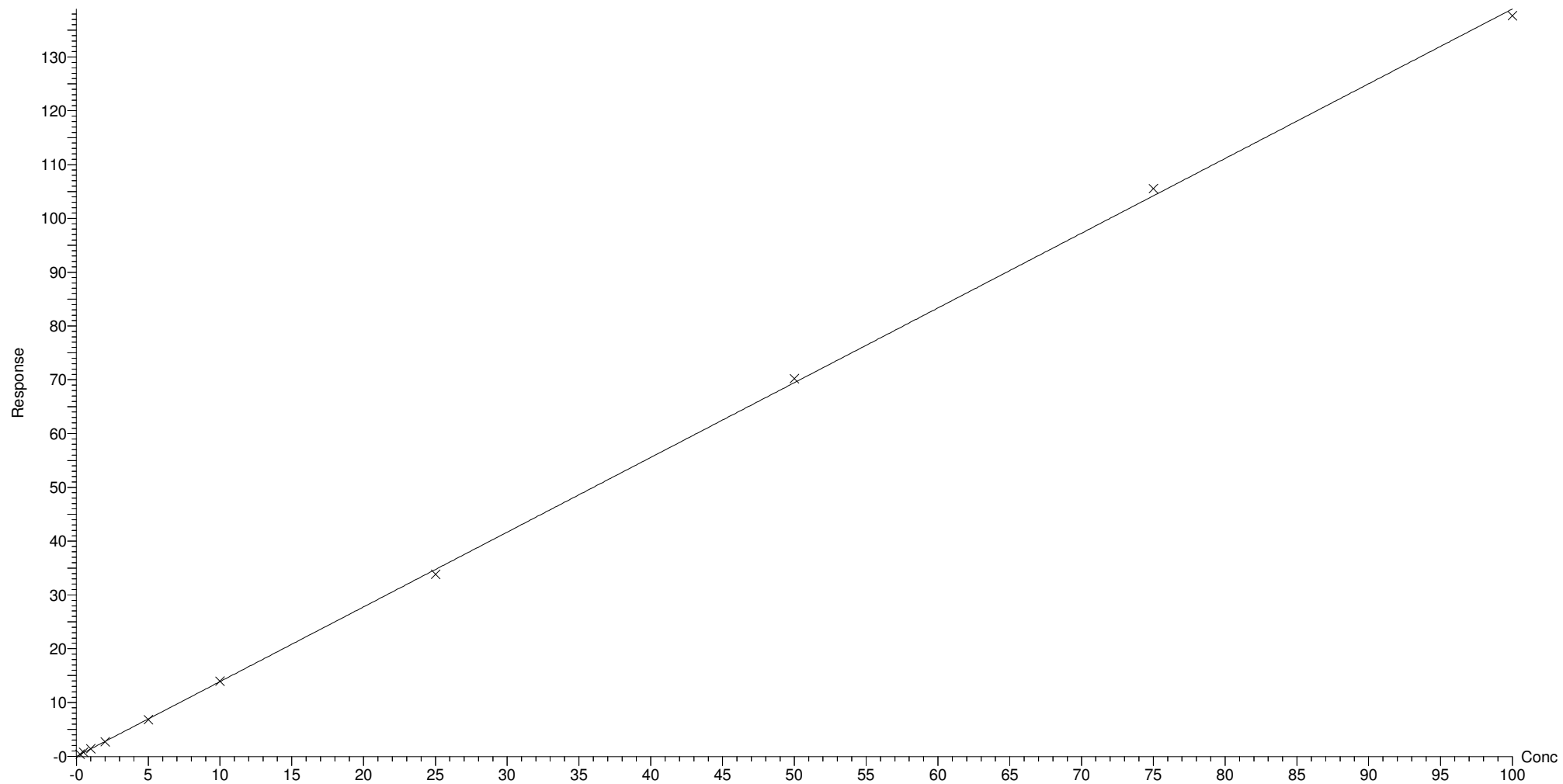
Compound name: PFTeDA

Coefficient of Determination:  $R^2 = 0.999780$

Calibration curve:  $1.38935 * x$

Response type: Internal Std ( Ref 23 ), Area \* ( IS Conc. / IS Area )

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:37:49 Pacific Standard Time

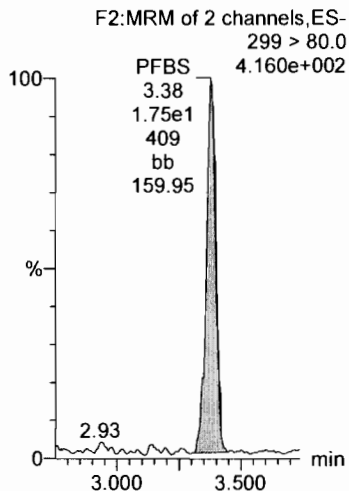
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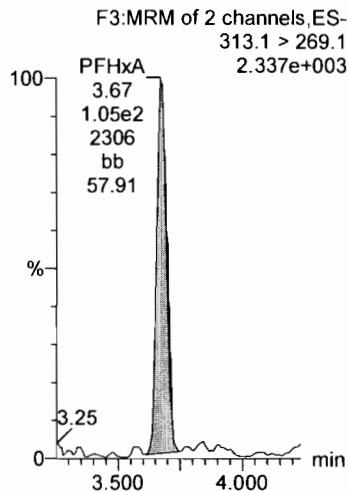
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Name: 181216P1\_2, Date: 16-Dec-2018, Time: 14:57:09, ID: ST181216P1-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

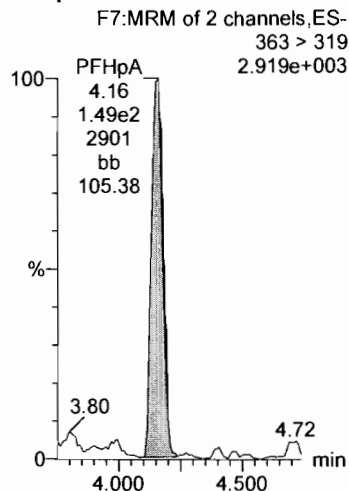
**PFBS**



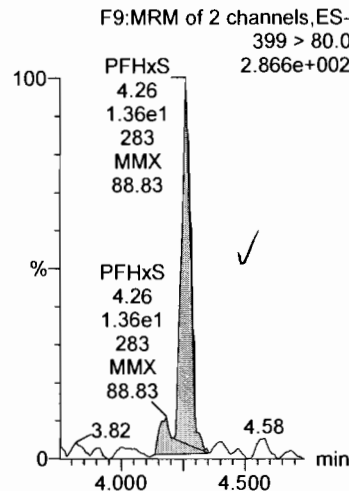
**PFHxA**



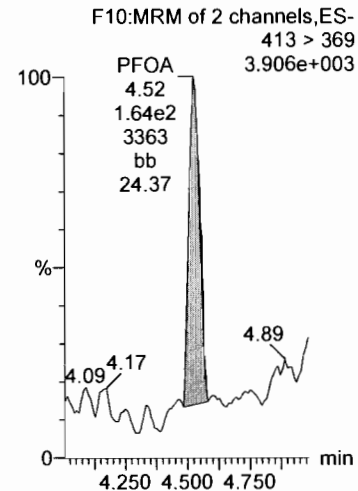
**PFHpA**



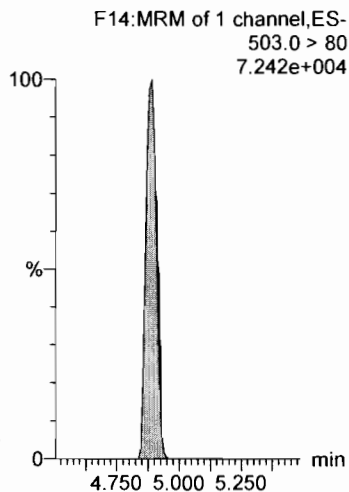
**PFHxS**



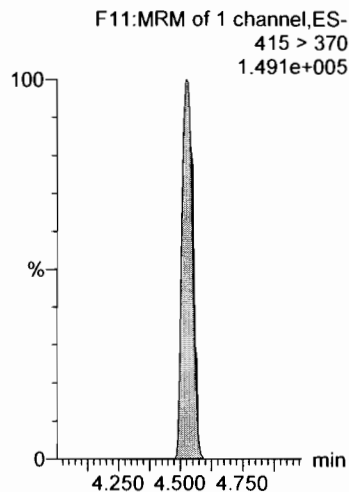
**PFOA**



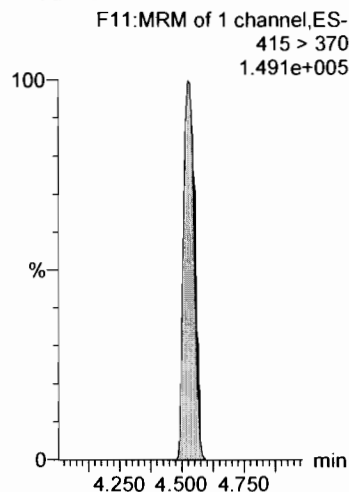
**13C4-PFOS**



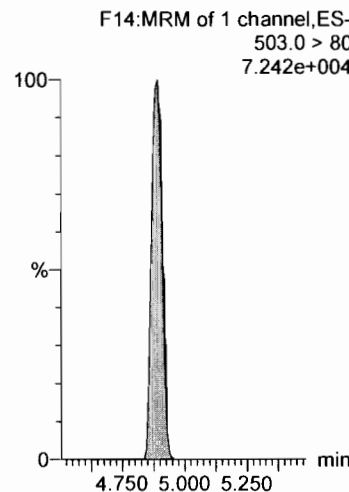
**13C2-PFOA**



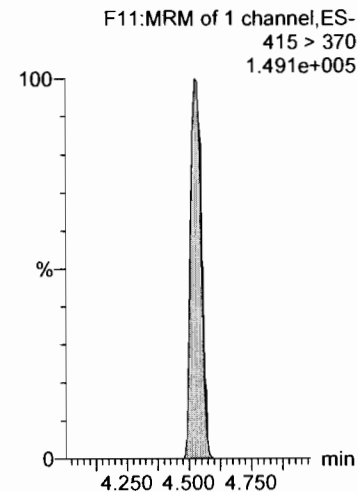
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**



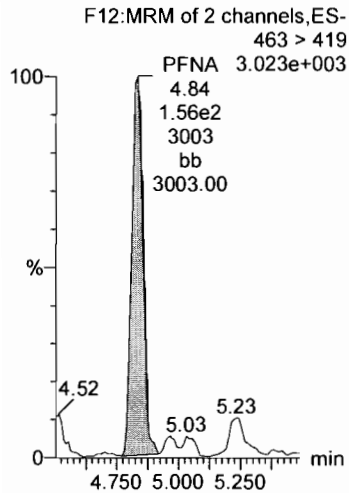
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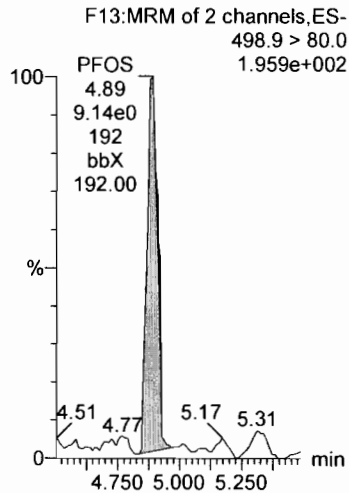
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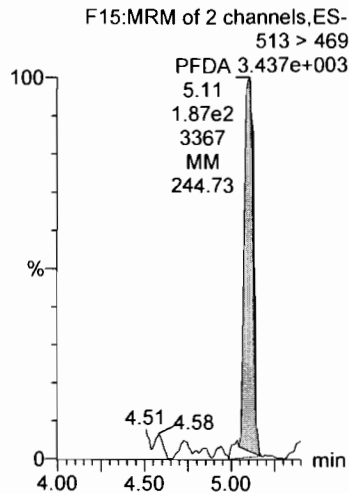
**PFNA**



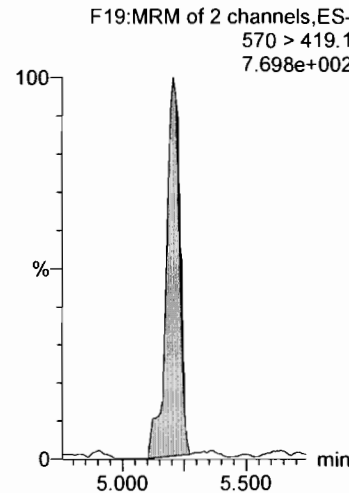
**PFOS**



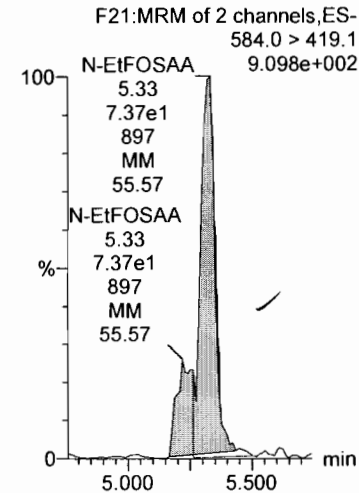
**PFDA**



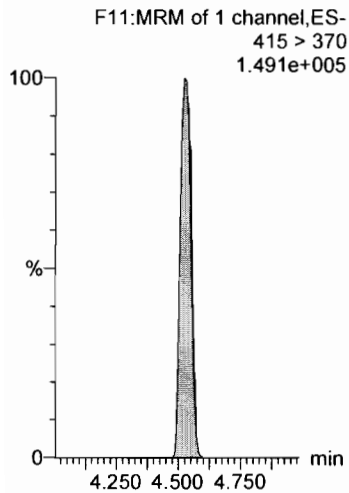
**N-MeFOSAA**



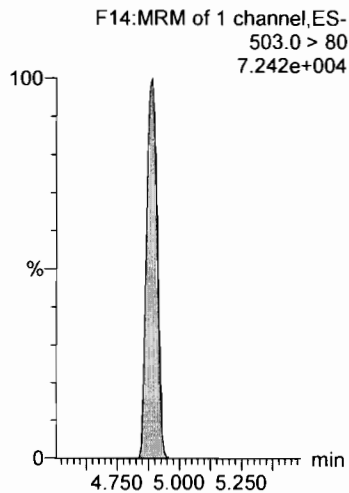
**N-EtFOSAA**



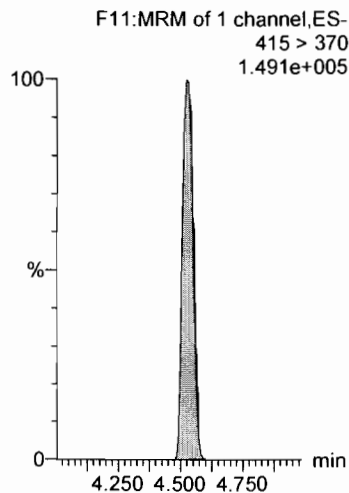
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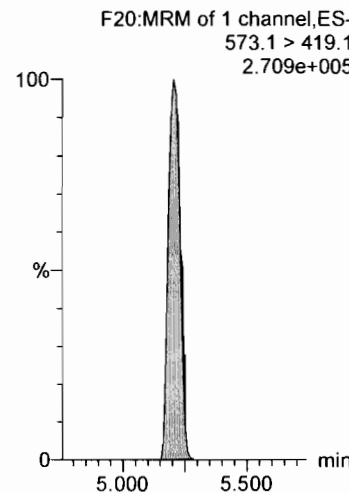
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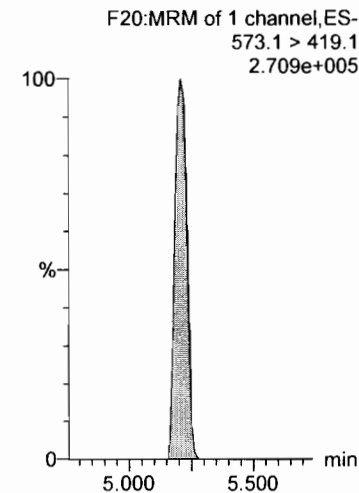
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**





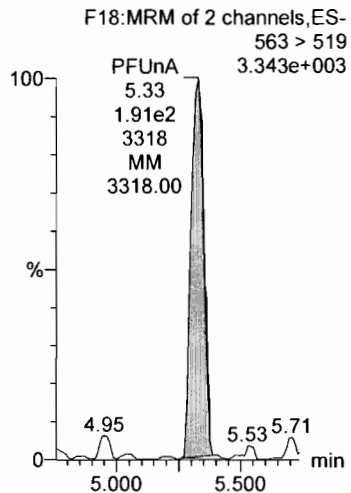
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:37:49 Pacific Standard Time

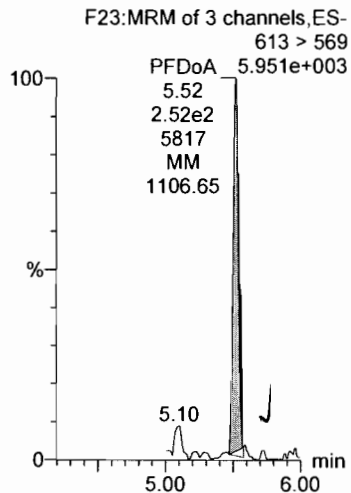
Printed: Sunday, December 16, 2018 17:37:54 Pacific Standard Time

Name: 181216P1\_2, Date: 16-Dec-2018, Time: 14:57:09, ID: ST181216P1-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

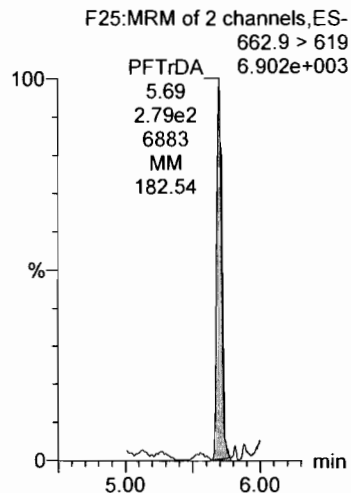
**PFUnA**



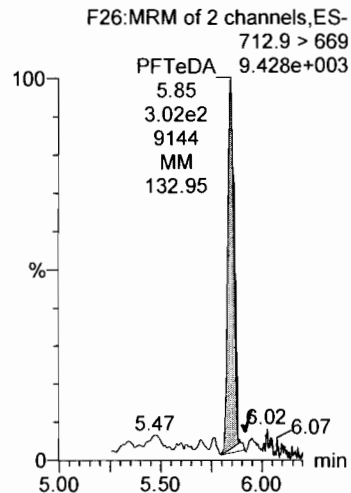
**PFDoA**



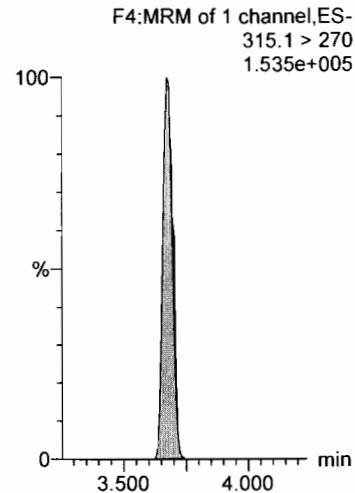
**PFTrDA**



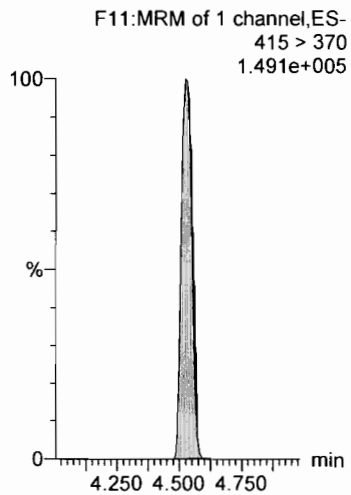
**PFTeDA**



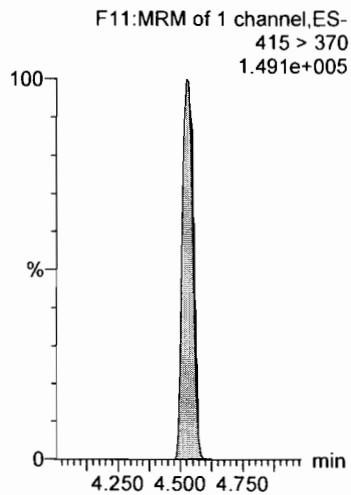
**13C2-PFHxA**



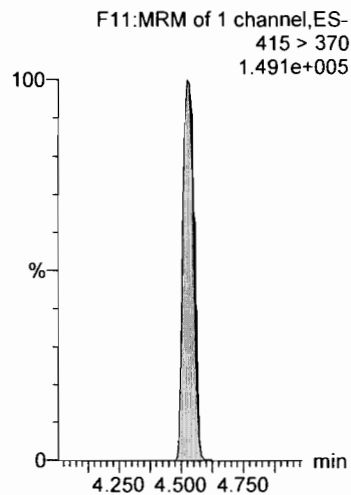
**13C2-PFOA**



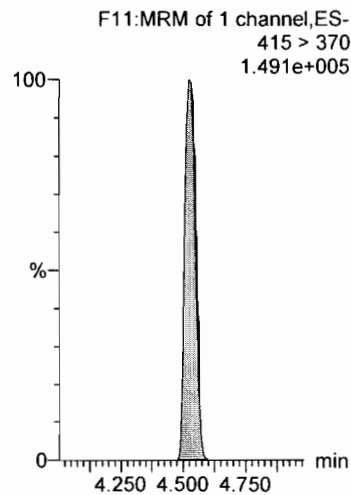
**13C2-PFOA**



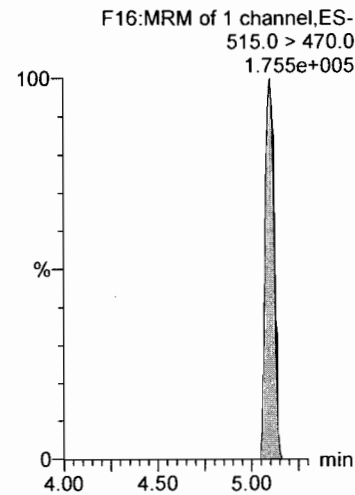
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



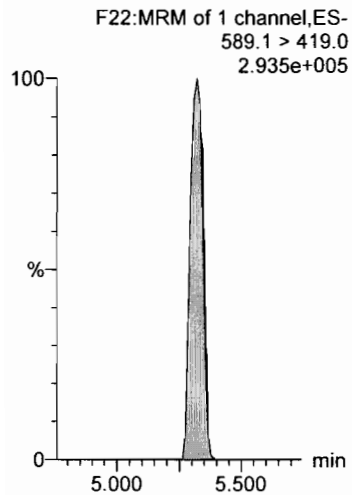
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:37:49 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:37:54 Pacific Standard Time

Name: 181216P1\_2, Date: 16-Dec-2018, Time: 14:57:09, ID: ST181216P1-1 PFC CS-4 537 18L1003, Description: PFC CS-4 537 18L1003

**d5-N-EtFOSAA**



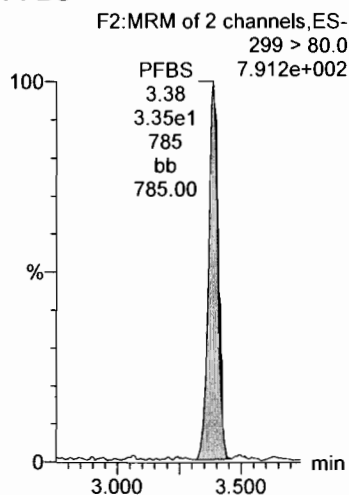
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:39:49 Pacific Standard Time

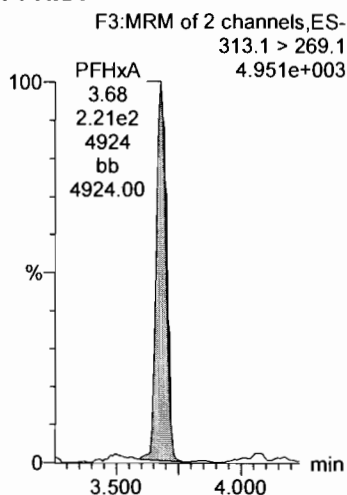
Method: D:\PFAS.pro\MethDB\PFAS\_DW\_L14\_121418.mdb 14 Dec 2018 11:08:06  
Calibration: D:\PFAS.PRO\CurveDB\C18\_537\_Q5\_12-16-18\_L14.cdb 16 Dec 2018 17:39:29

Name: 181216P1\_3, Date: 16-Dec-2018, Time: 15:08:28, ID: ST181216P1-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004

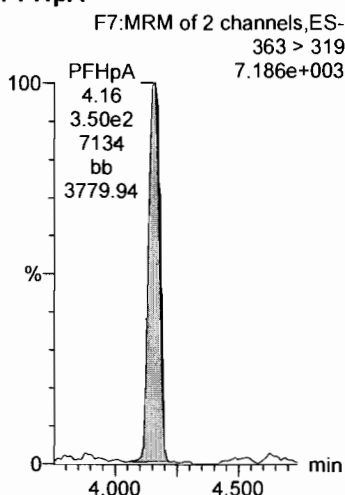
**PFBS**



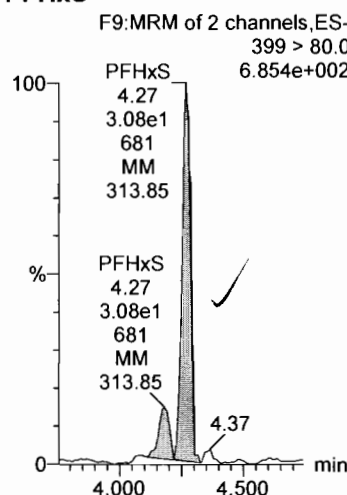
**PFHxA**



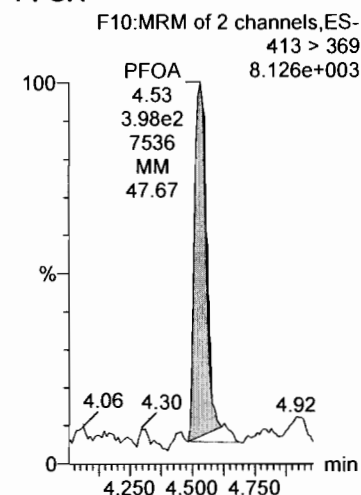
**PFHpA**



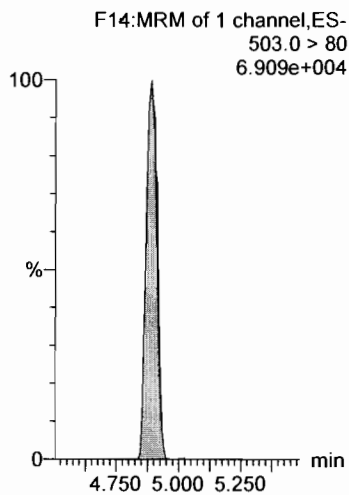
**PFHxS**



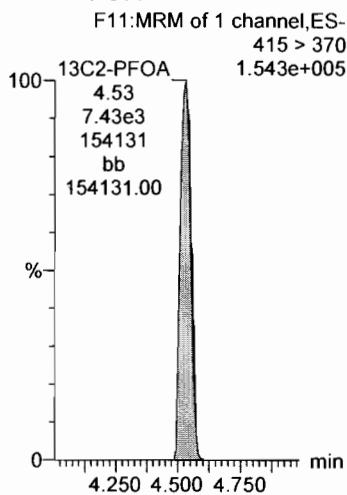
**PFOA**



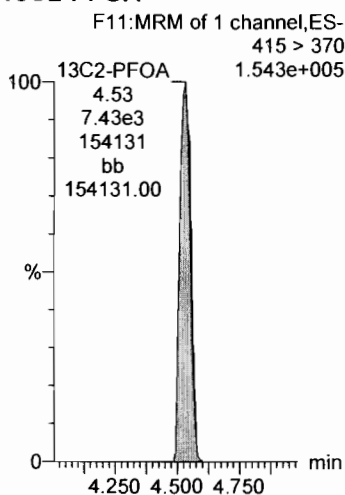
**13C4-PFOS**



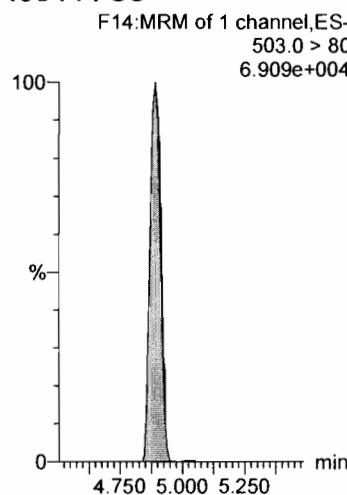
**13C2-PFOA**



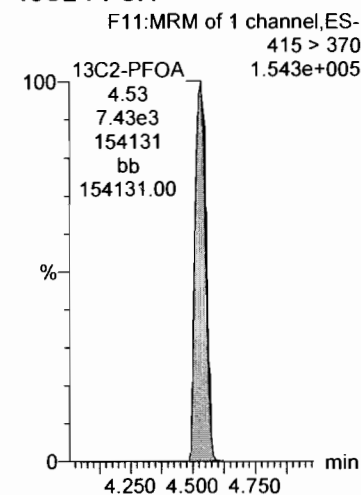
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

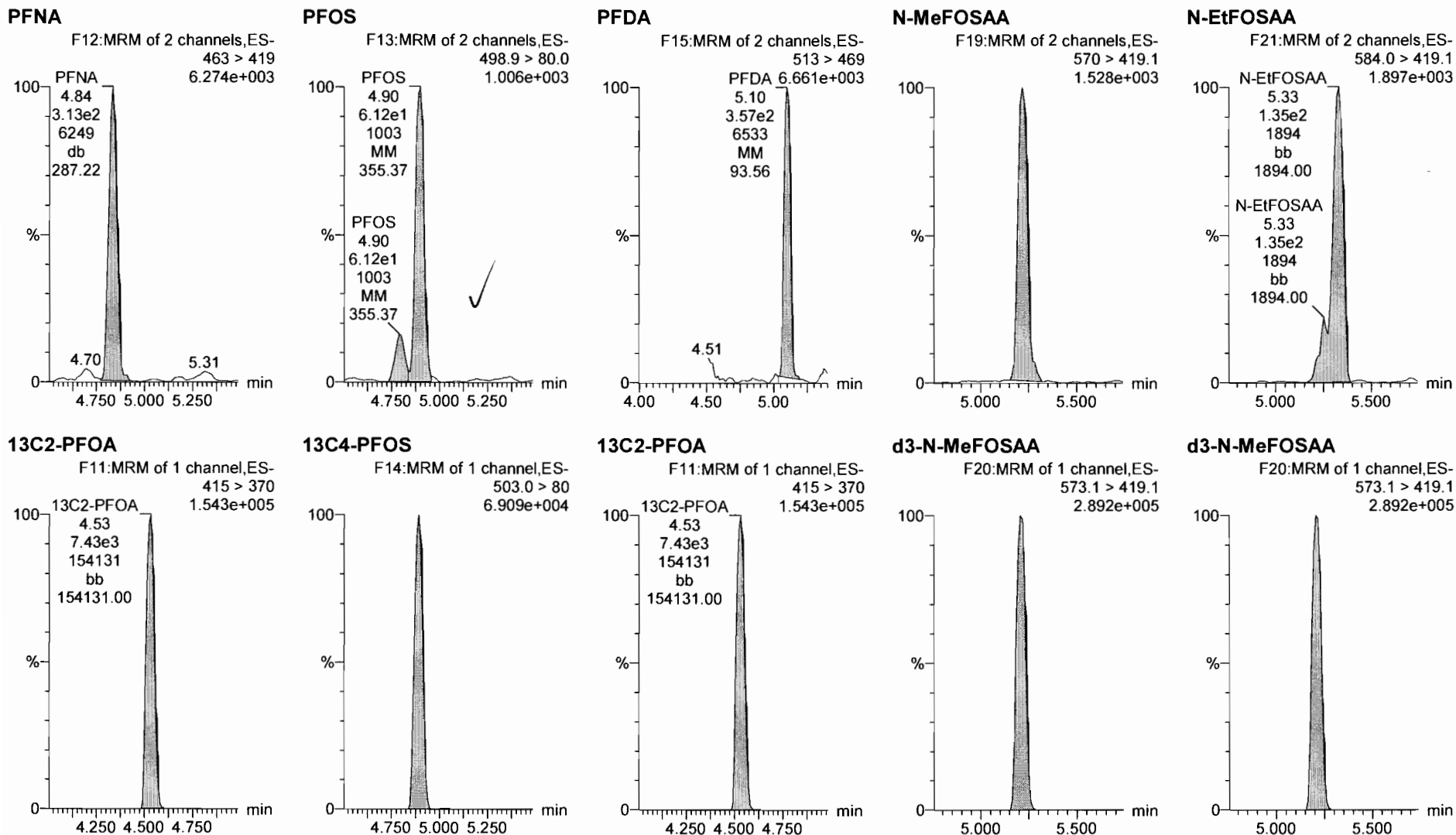


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:39:49 Pacific Standard Time

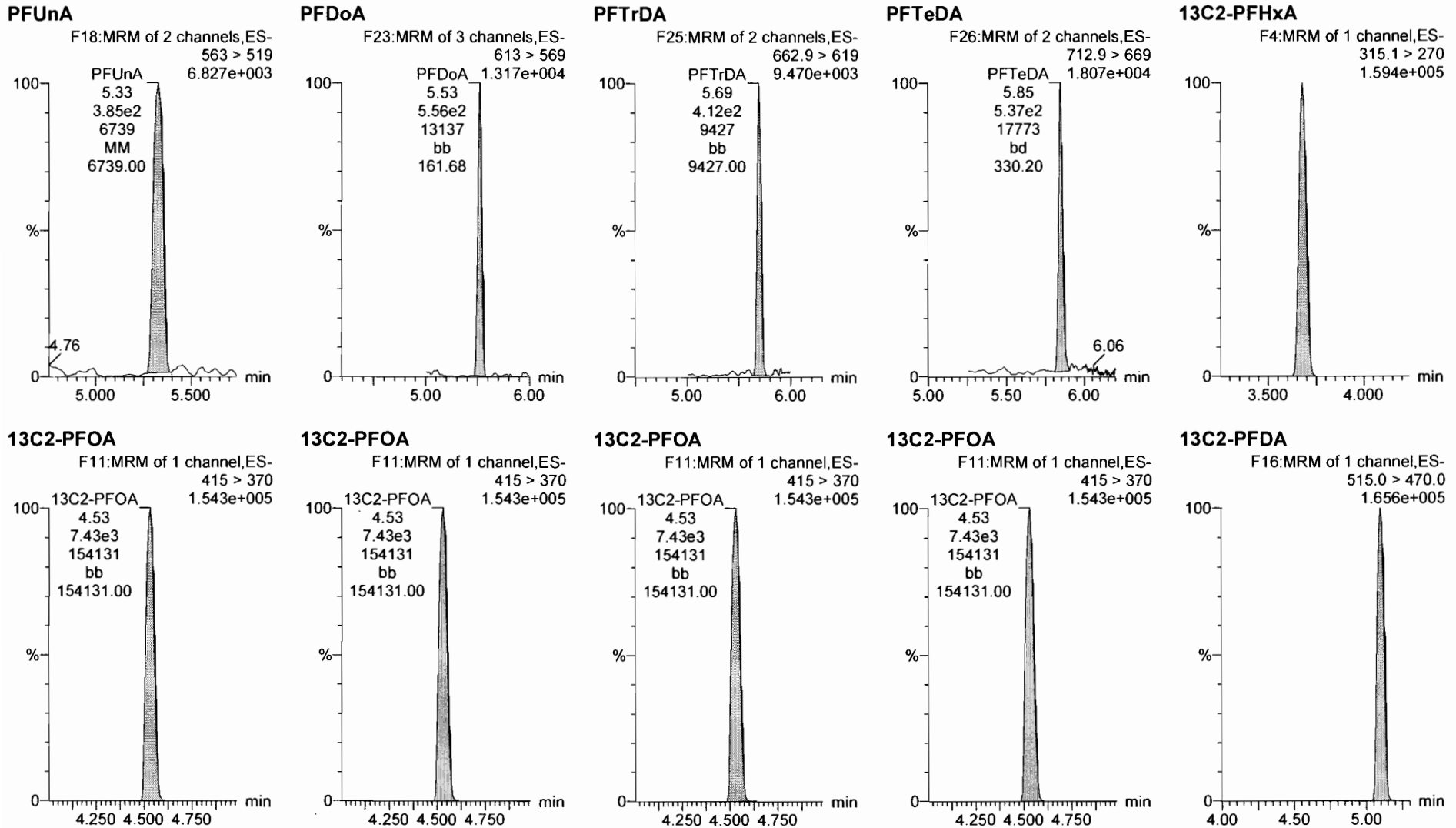
Name: 181216P1\_3, Date: 16-Dec-2018, Time: 15:08:28, ID: ST181216P1-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:39:49 Pacific Standard Time

Name: 181216P1\_3, Date: 16-Dec-2018, Time: 15:08:28, ID: ST181216P1-2 PFC CS-3 537 18L1004, Description: PFC CS-3 537 18L1004



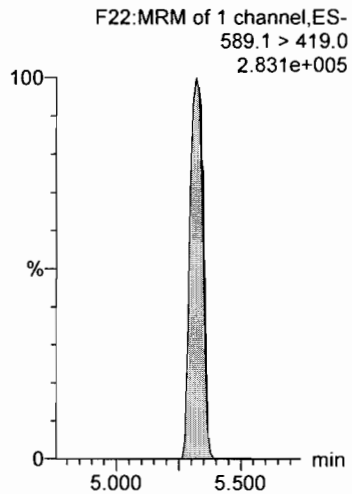
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:39:29 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:39:49 Pacific Standard Time

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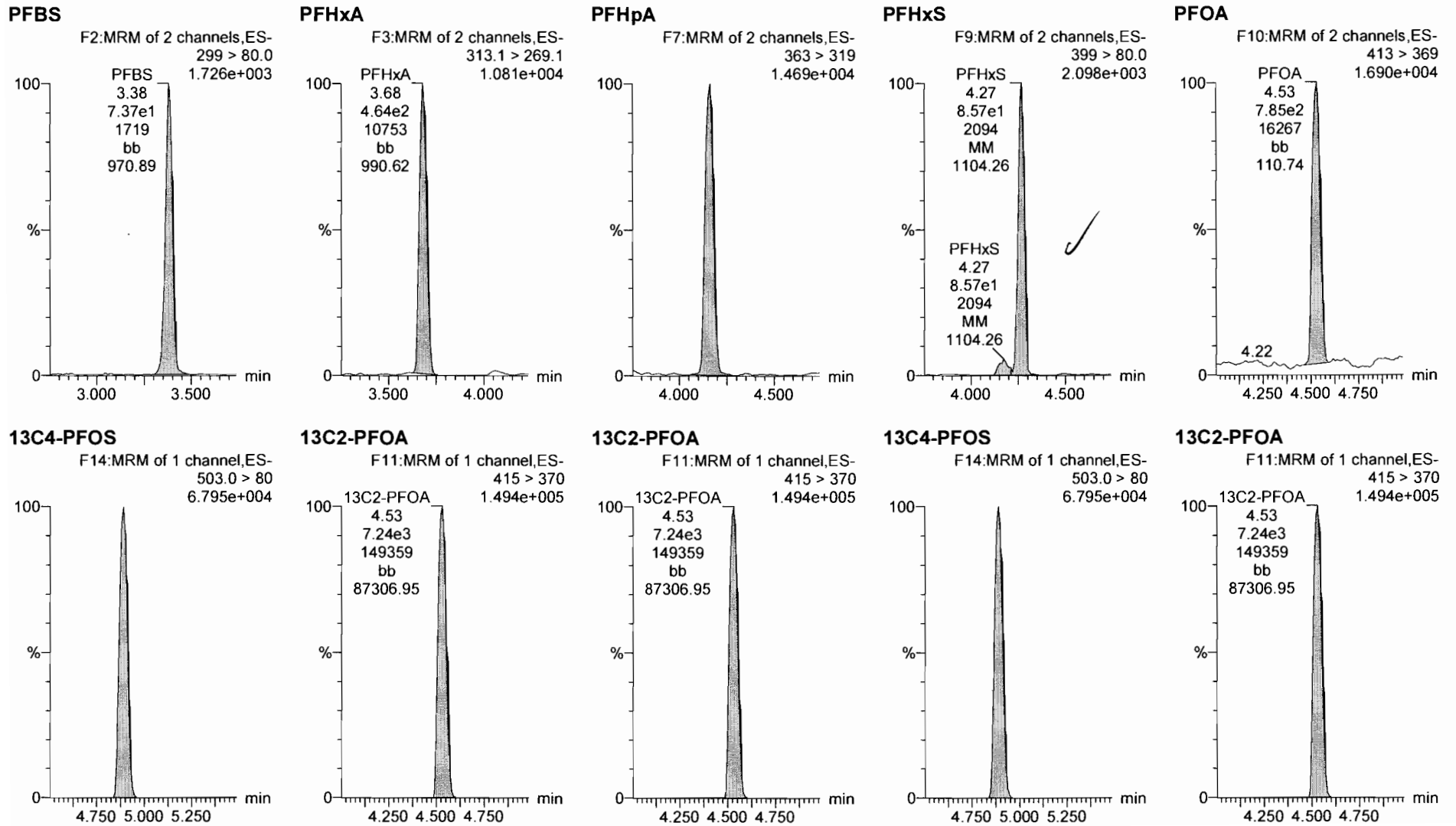
**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

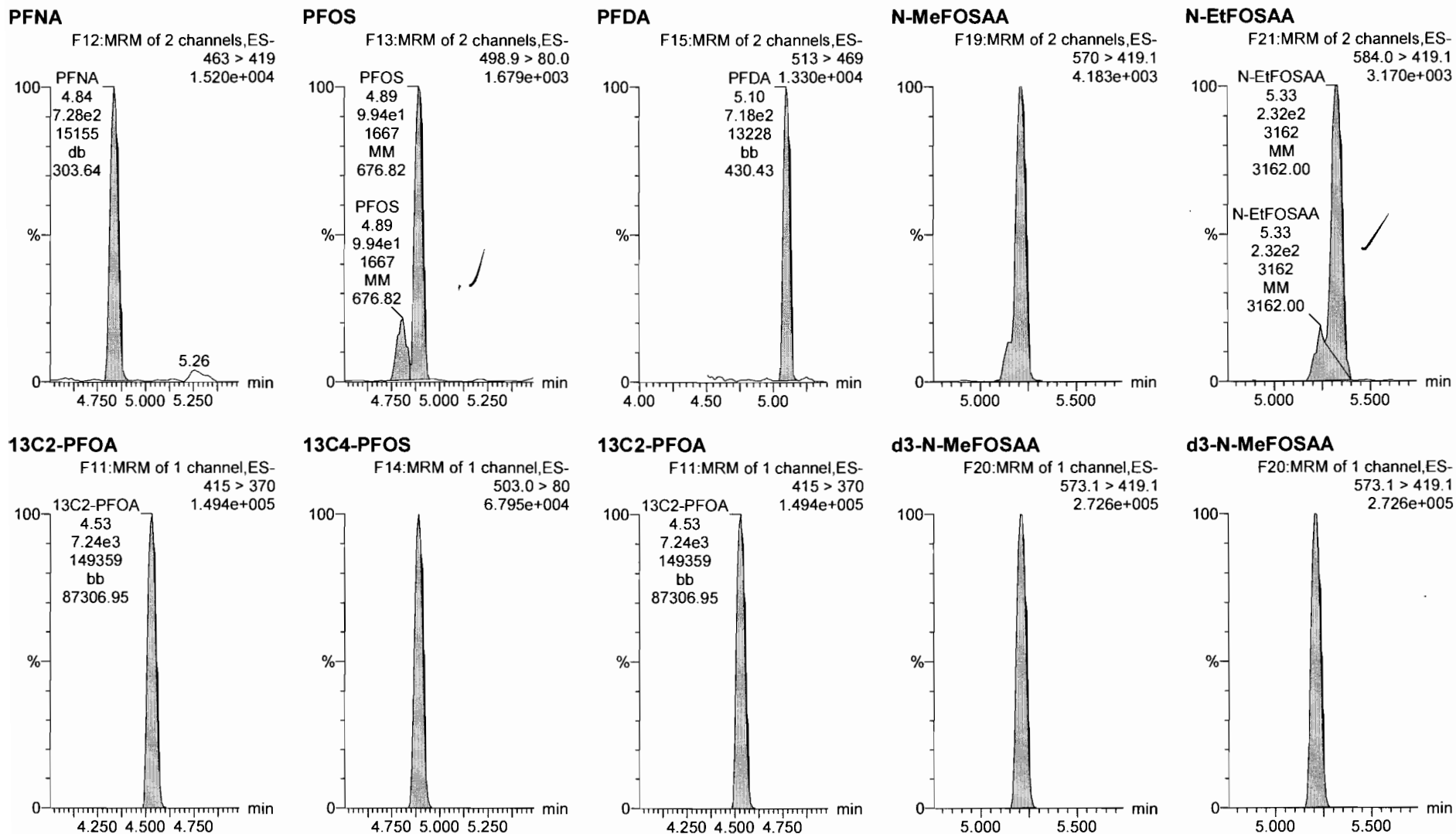
Name: 181216P1\_4, Date: 16-Dec-2018, Time: 15:19:39, ID: ST181216P1-3 PFC CS-2 537 18L1005, Description: PFC CS-2 537 18L1005



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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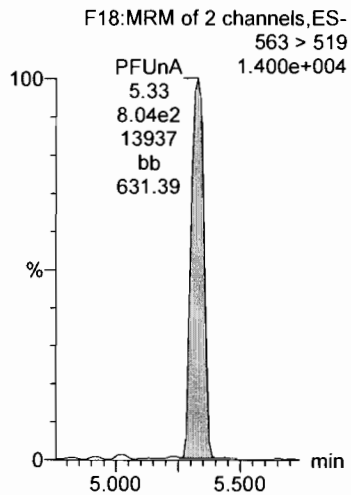
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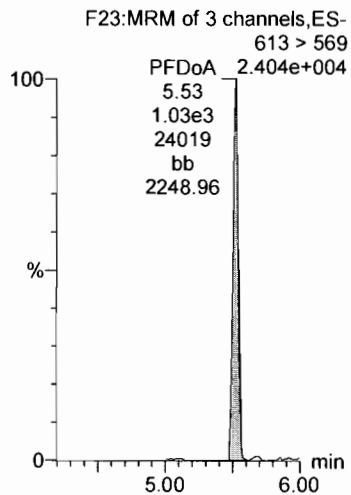
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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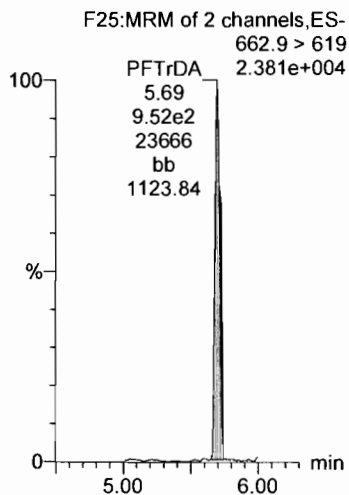
**PFUnA**



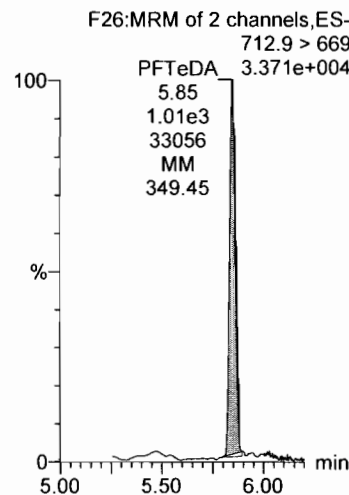
**PFDoA**



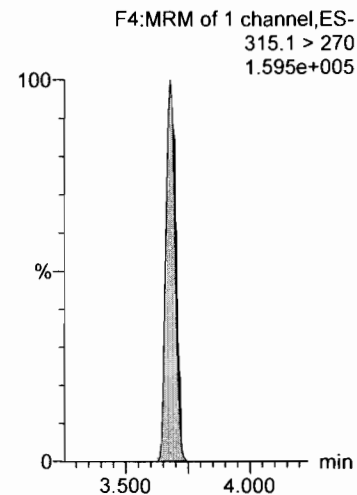
**PFTrDA**



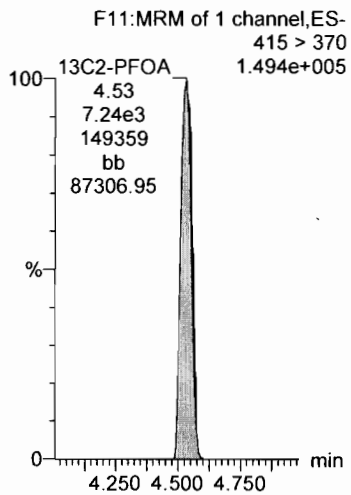
**PFTeDA**



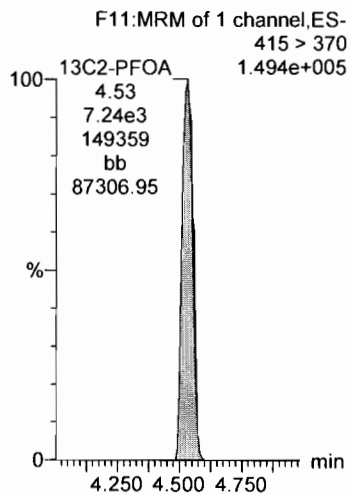
**13C2-PFHxA**



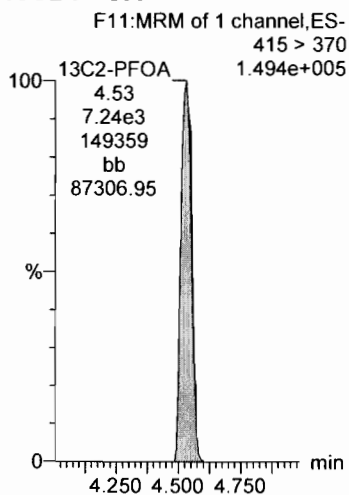
**13C2-PFOA**



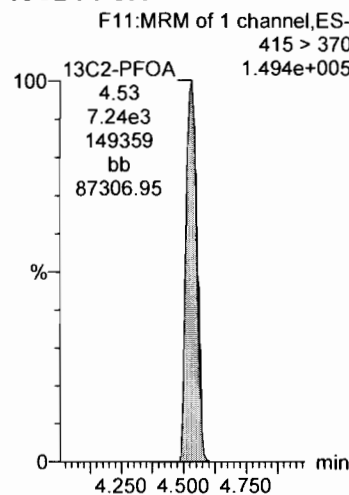
**13C2-PFOA**



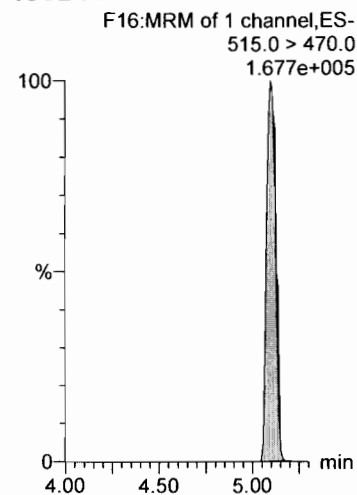
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



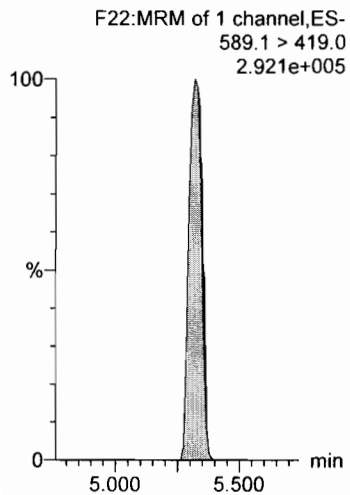
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_4, Date: 16-Dec-2018, Time: 15:19:39, ID: ST181216P1-3 PFC CS-2 537 18L1005, Description: PFC CS-2 537 18L1005

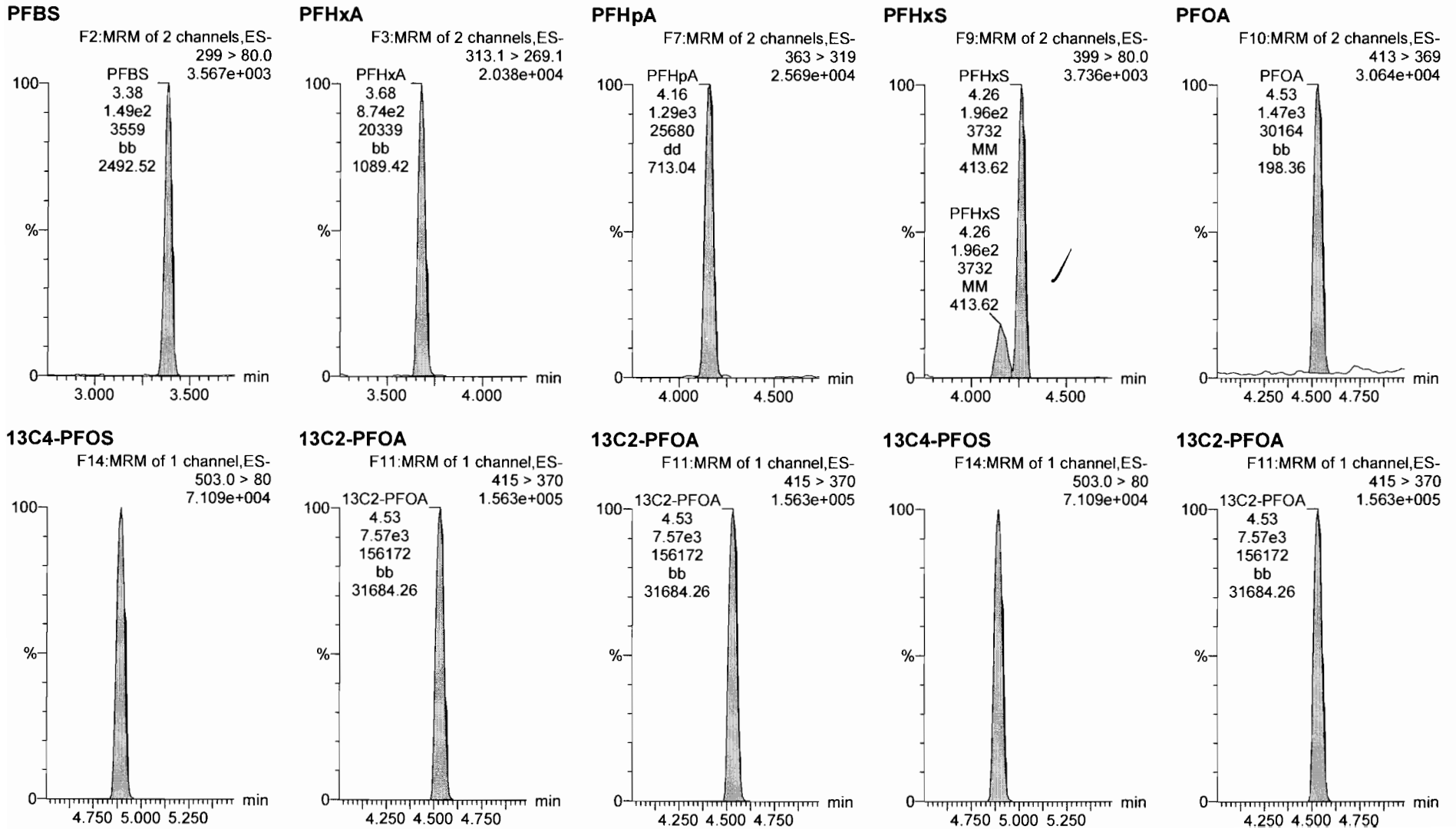
**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_5, Date: 16-Dec-2018, Time: 15:30:50, ID: ST181216P1-4 PFC CS-1 537 18L1006, Description: PFC CS-1 537 18L1006

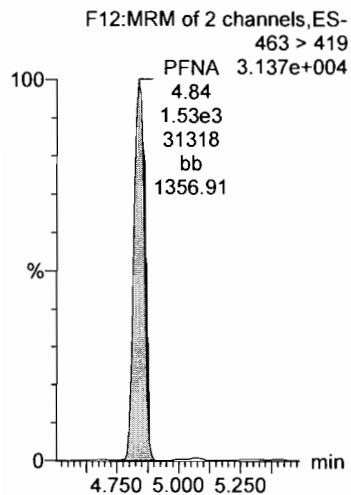


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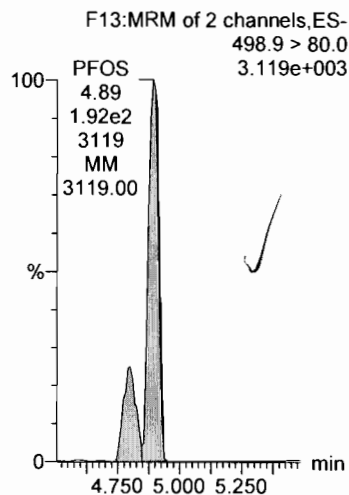
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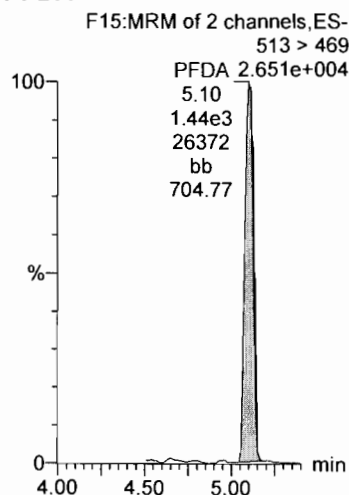
**PFNA**



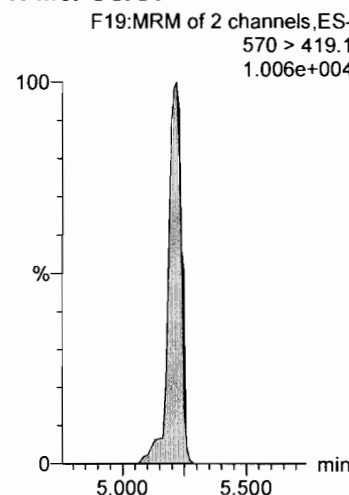
**PFOS**



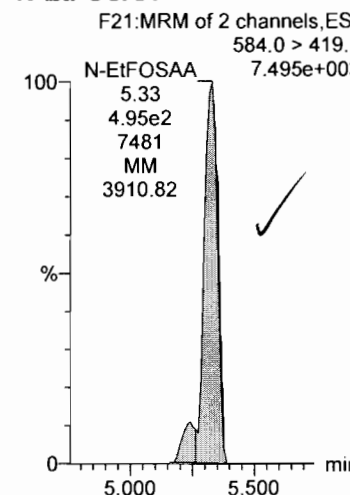
**PFDA**



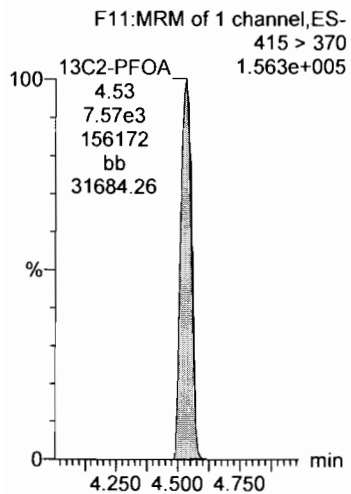
**N-MeFOSAA**



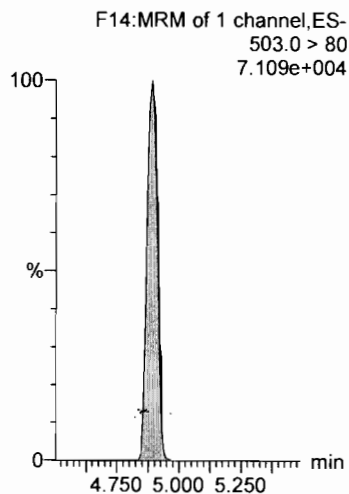
**N-EtFOSAA**



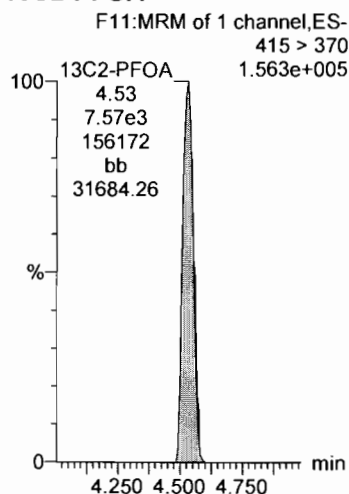
**13C2-PFOA**



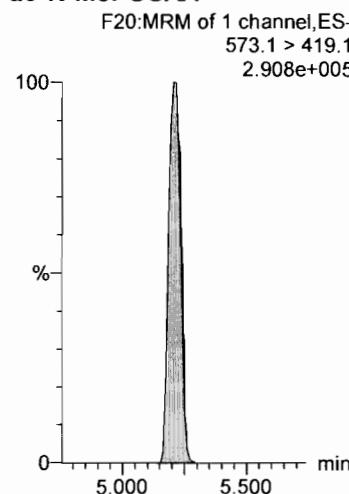
**13C4-PFOS**



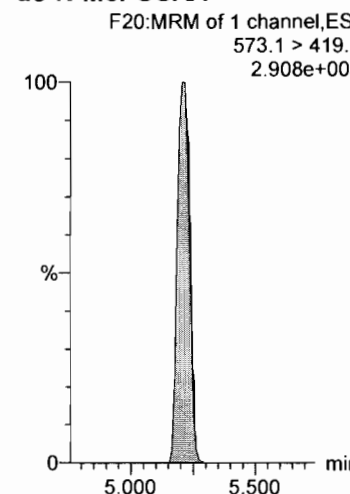
**13C2-PFOA**



**d3-N-MeFOSAA**



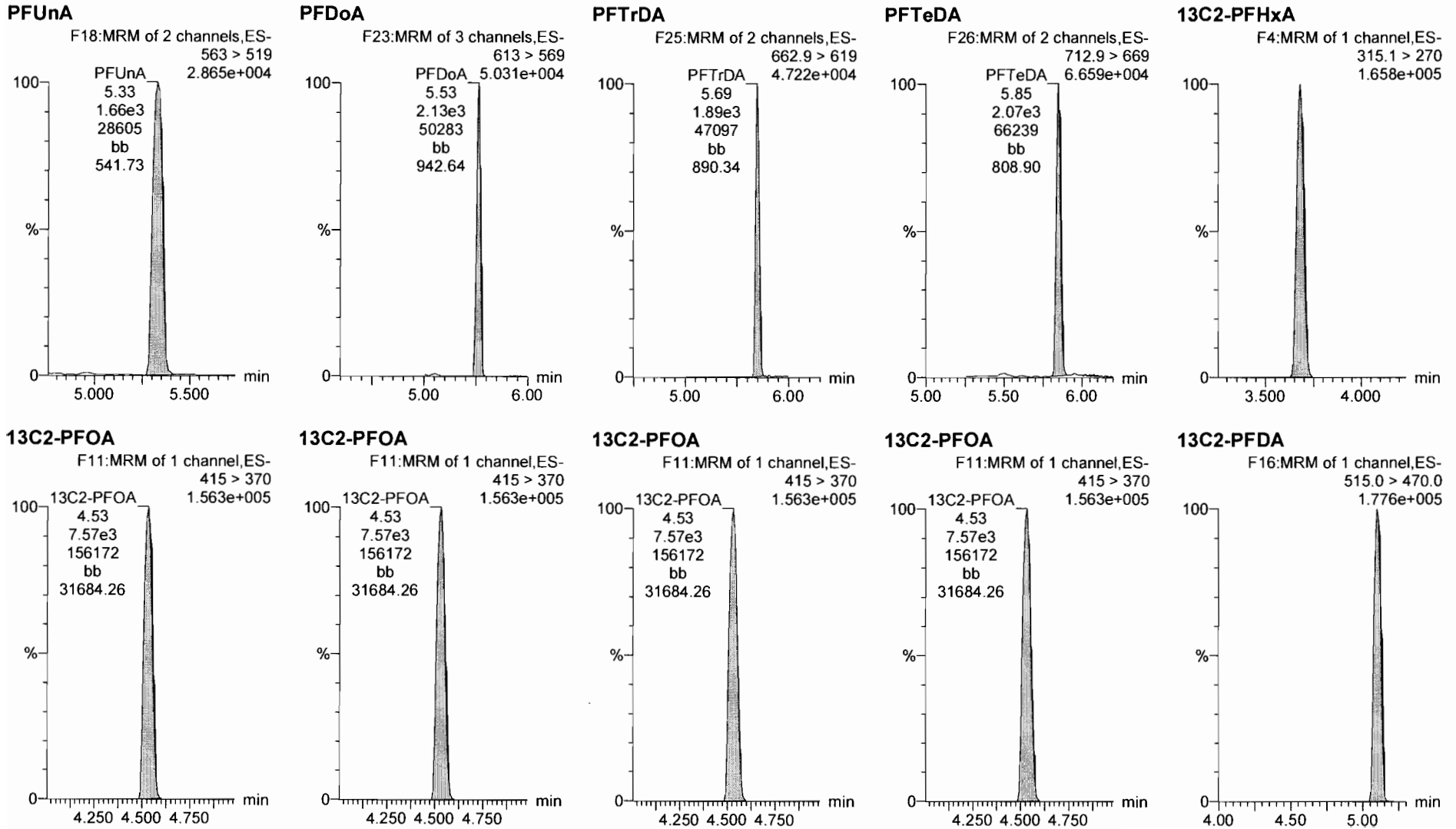
**d3-N-MeFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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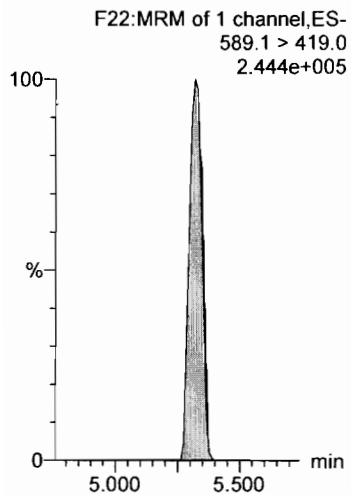
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Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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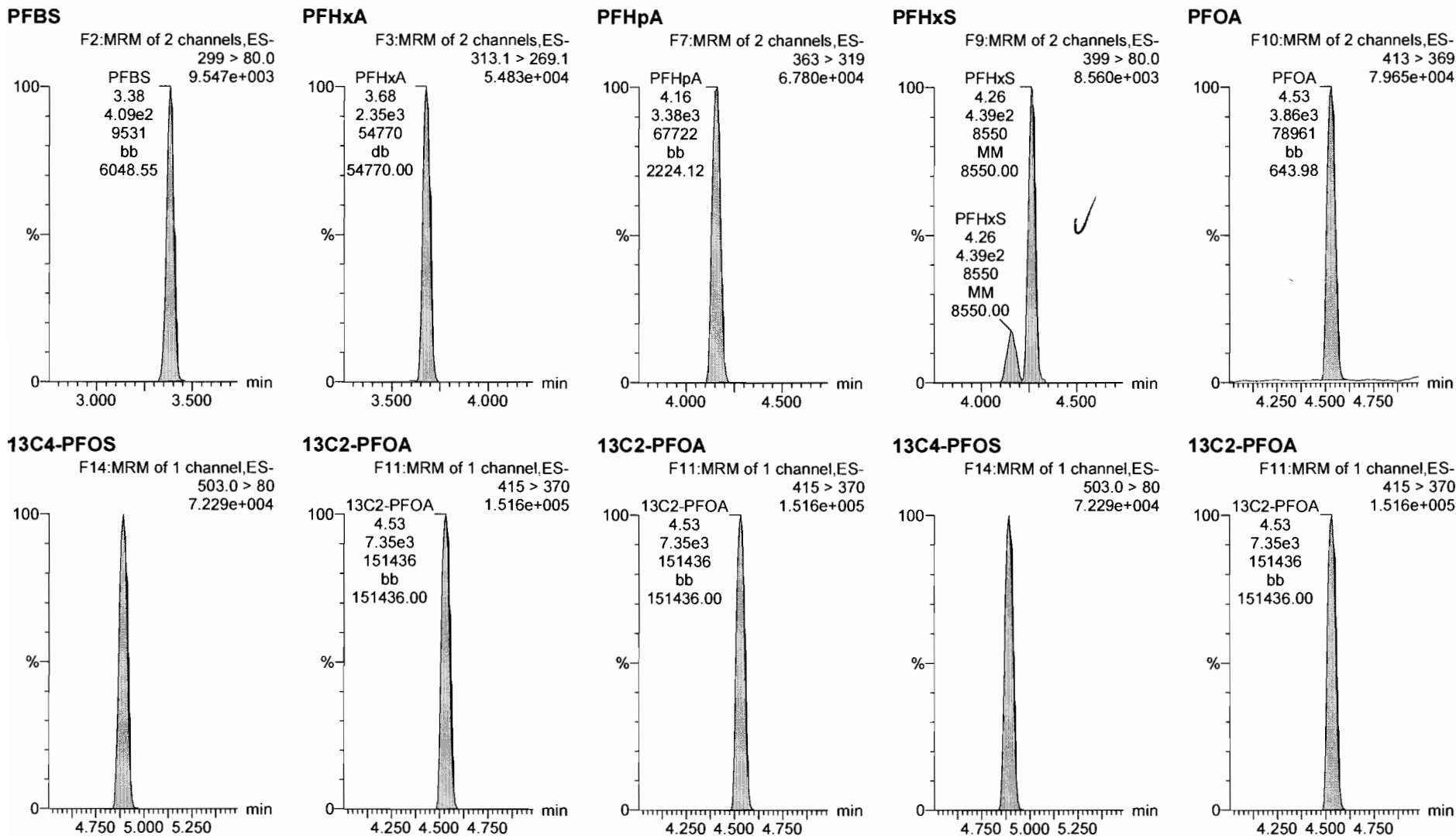
**d5-N-EtFOSAA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
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Name: 181216P1\_6, Date: 16-Dec-2018, Time: 15:42:09, ID: ST181216P1-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007



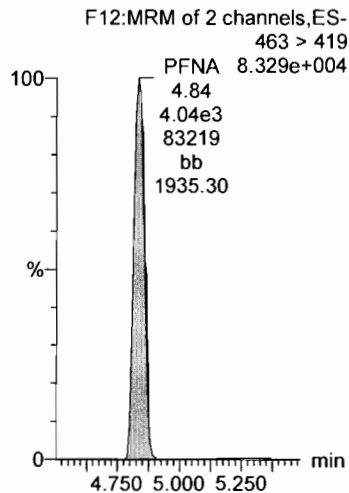
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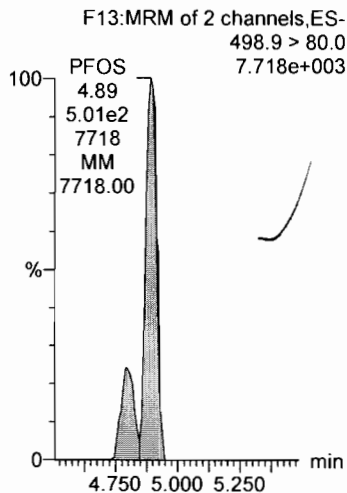
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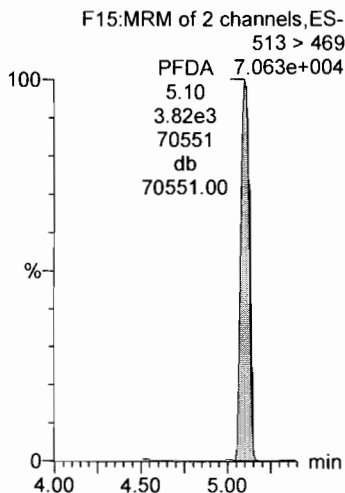
**PFNA**



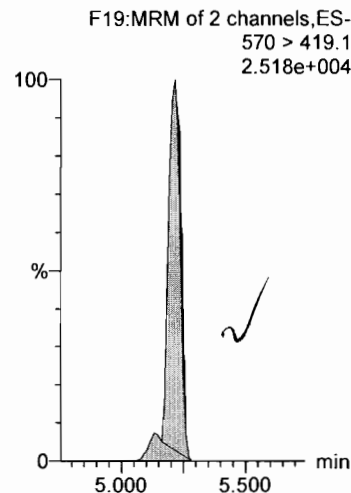
**PFOS**



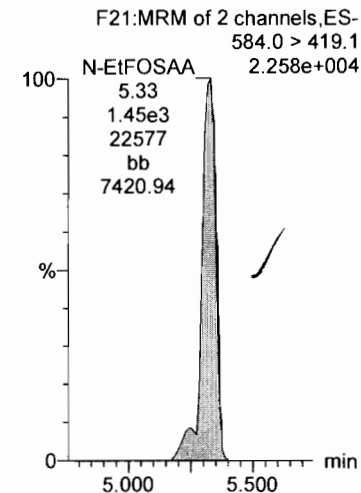
**PFDA**



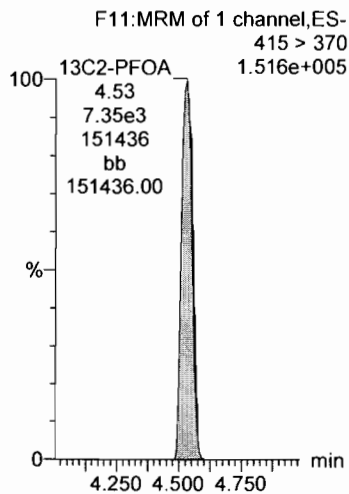
**N-MeFOSAA**



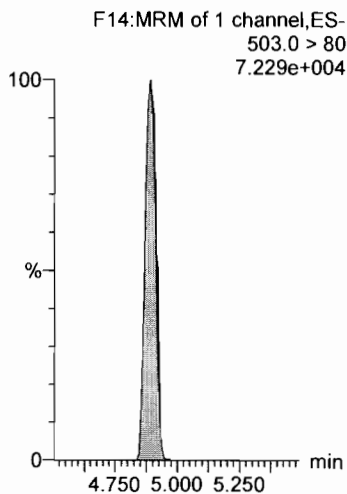
**N-EtFOSAA**



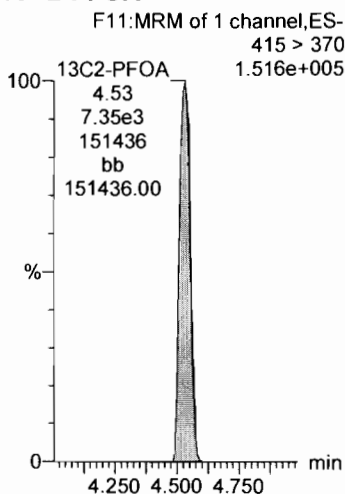
**13C2-PFOA**



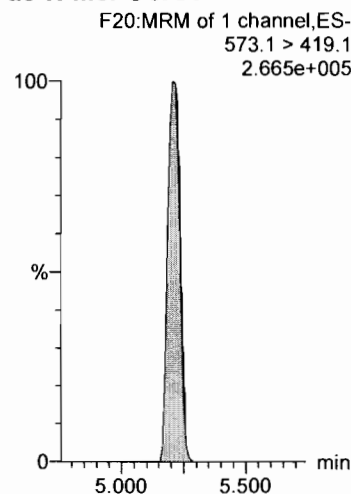
**13C4-PFOS**



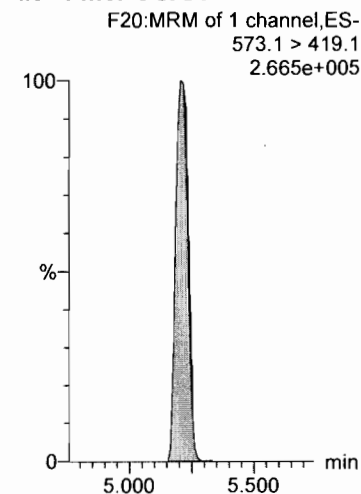
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**



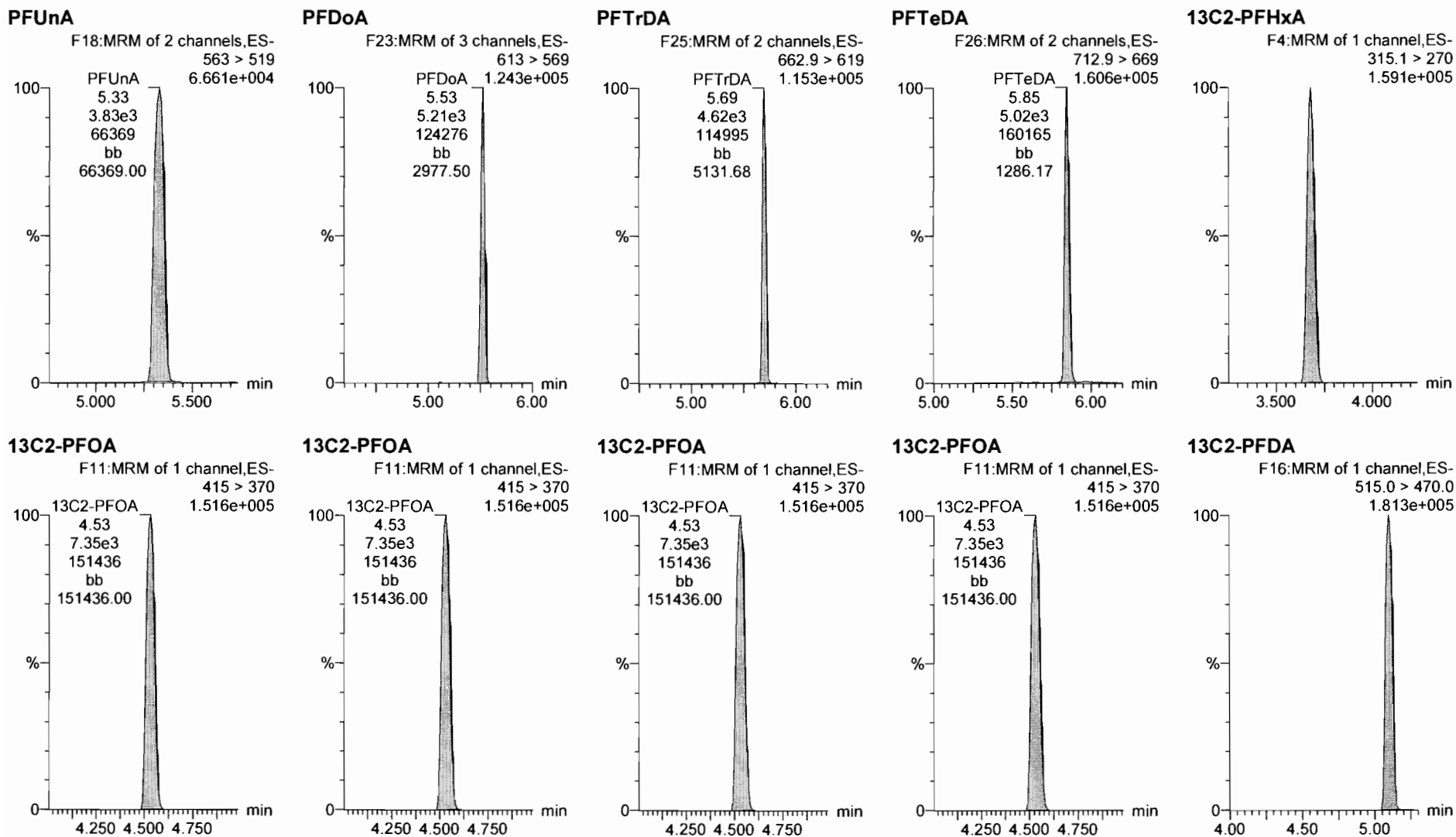


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_6, Date: 16-Dec-2018, Time: 15:42:09, ID: ST181216P1-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007



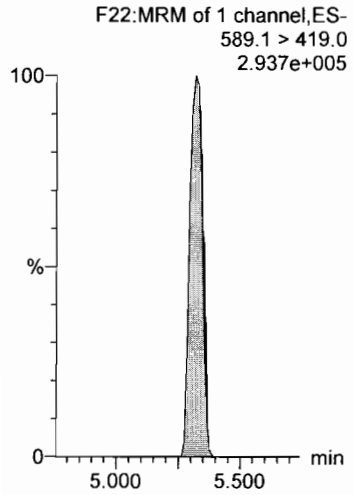
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Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_6, Date: 16-Dec-2018, Time: 15:42:09, ID: ST181216P1-5 PFC CS0 537 18L1007, Description: PFC CS0 537 18L1007

**d5-N-EtFOSAA**



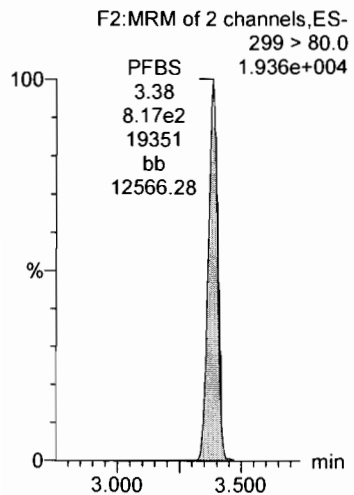
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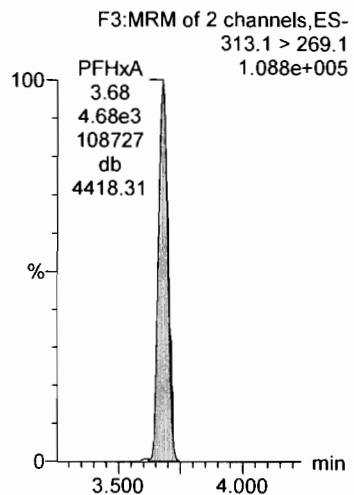
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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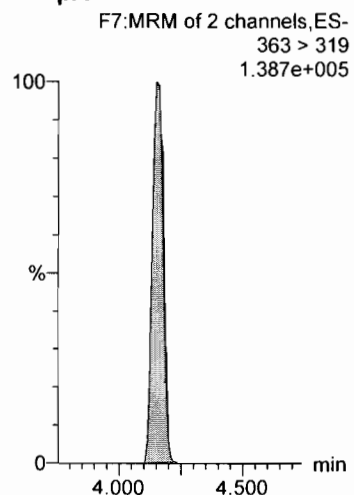
**PFBS**



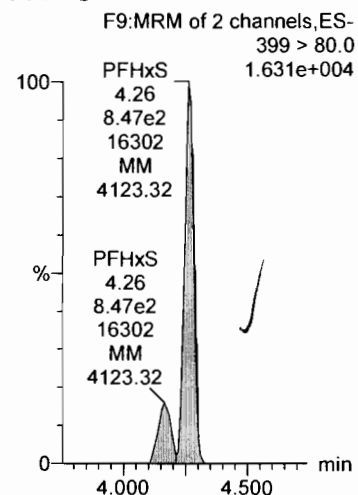
**PFHxA**



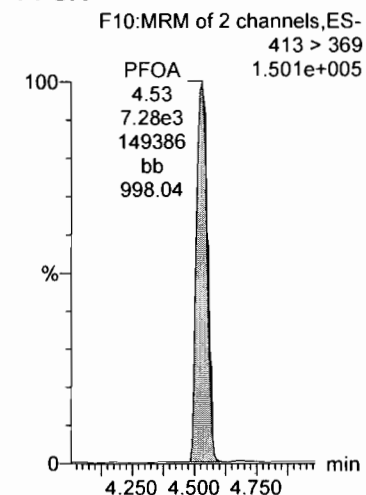
**PFHpA**



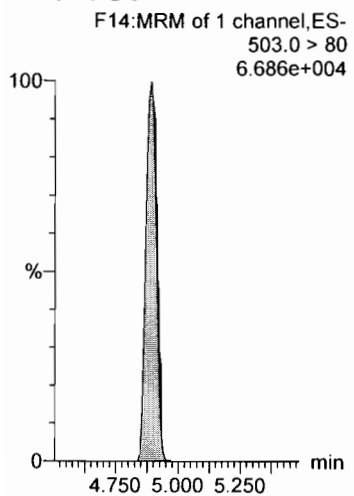
**PFHxS**



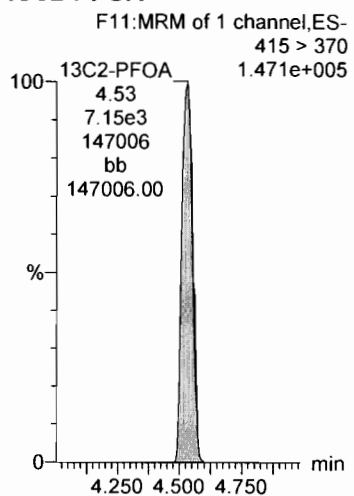
**PFOA**



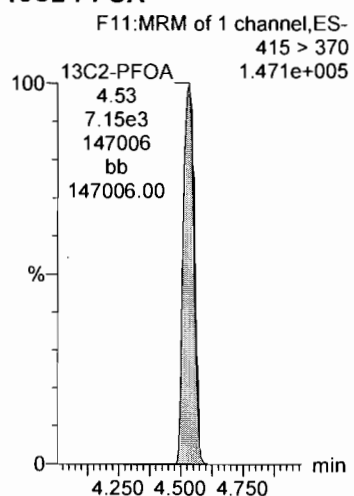
**13C4-PFOS**



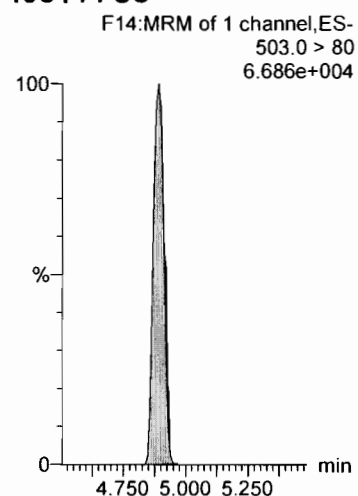
**13C2-PFOA**



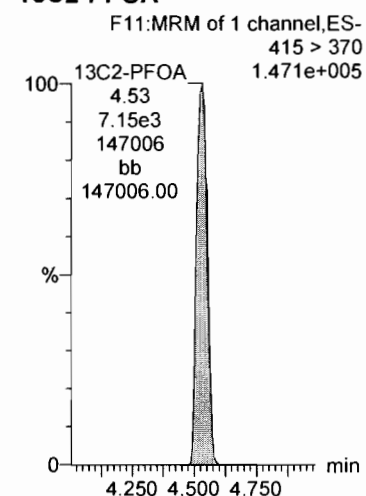
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFOA**

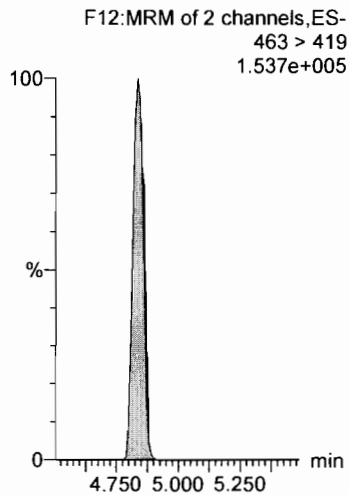


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

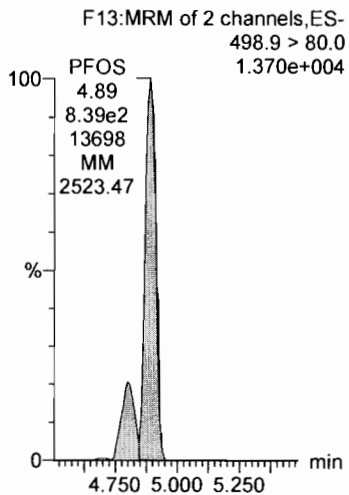
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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_7, Date: 16-Dec-2018, Time: 15:53:20, ID: ST181216P1-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

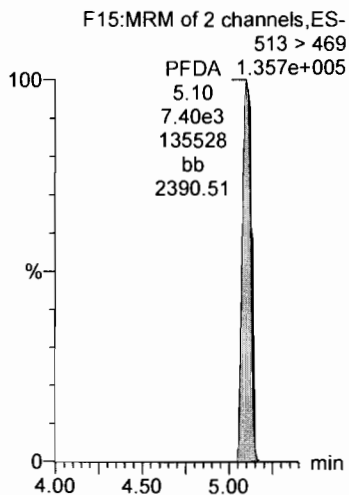
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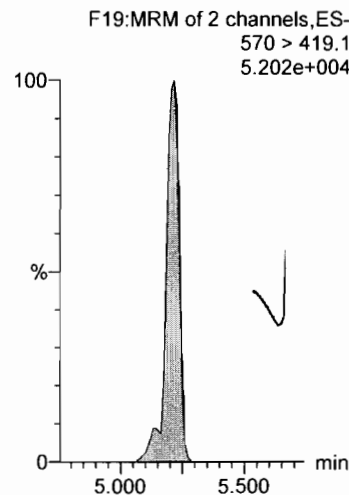
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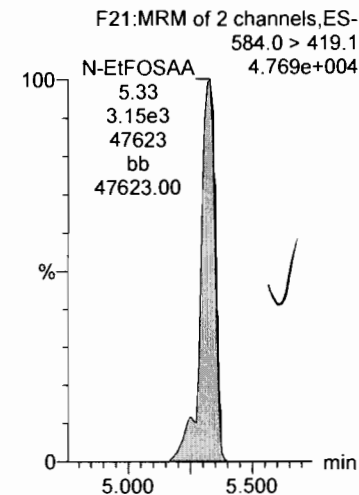
**PFDA**



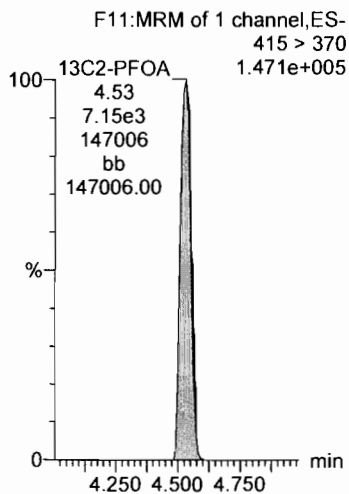
**N-MeFOSAA**



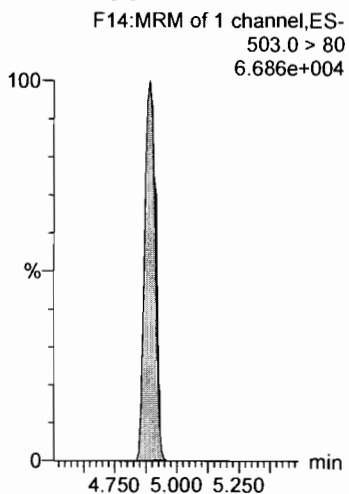
**N-EtFOSAA**



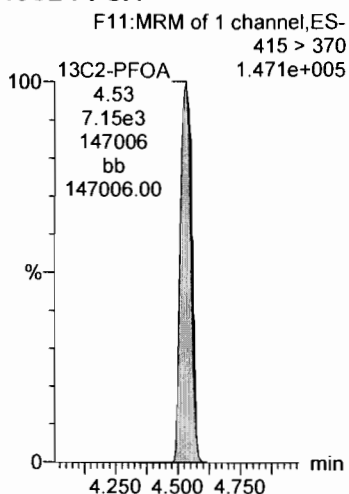
**13C2-PFOA**



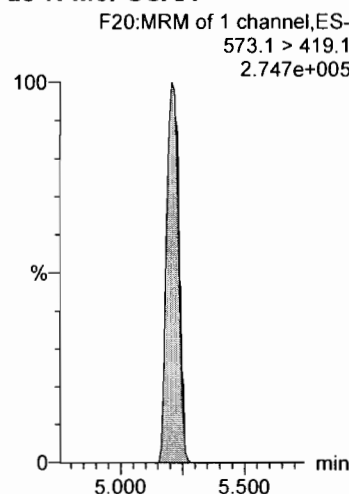
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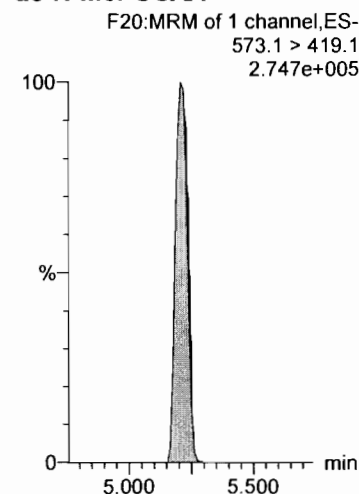
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**d3-N-MeFOSAA**



**d3-N-MeFOSAA**



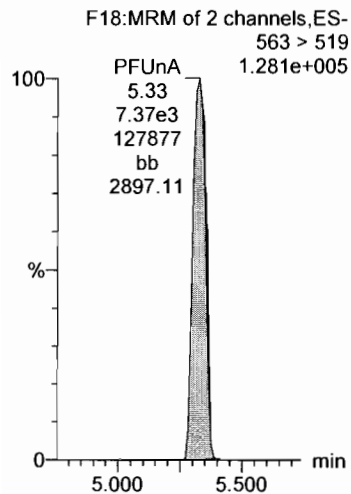
Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

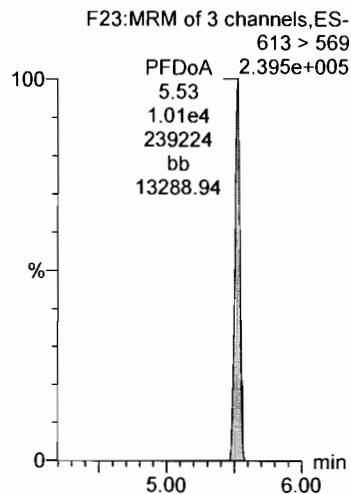
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_7, Date: 16-Dec-2018, Time: 15:53:20, ID: ST181216P1-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

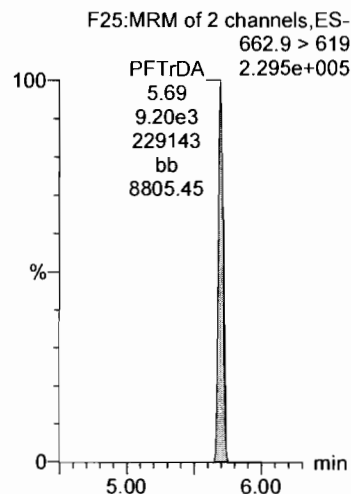
**PFUnA**



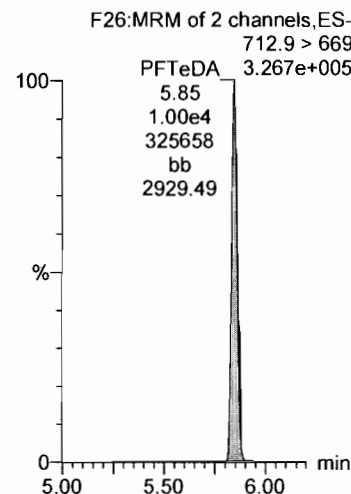
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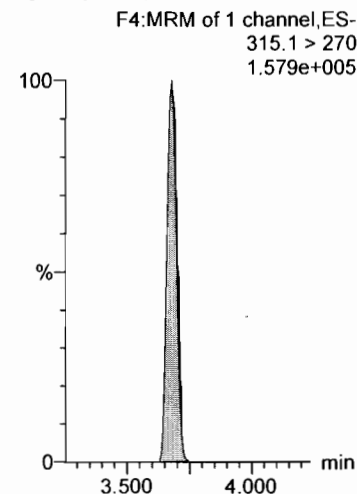
**PFTrDA**



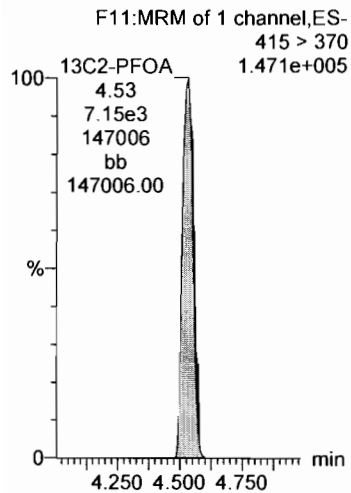
**PFTeDA**



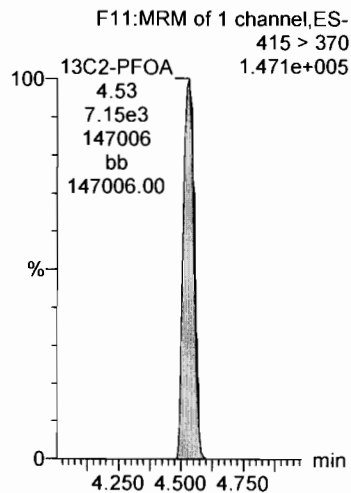
**13C2-PFHxA**



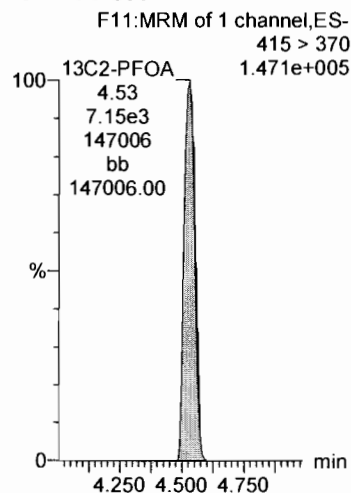
**13C2-PFOA**



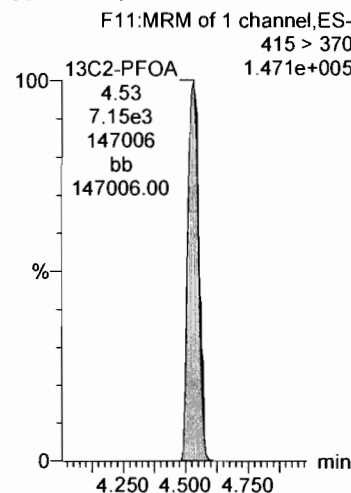
**13C2-PFOA**



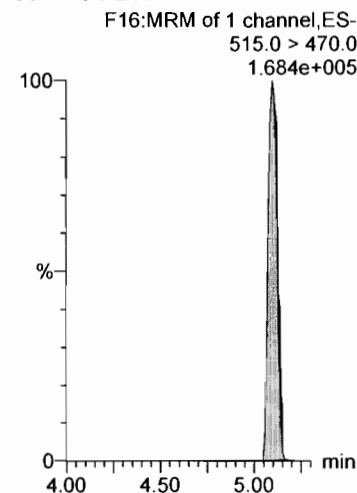
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



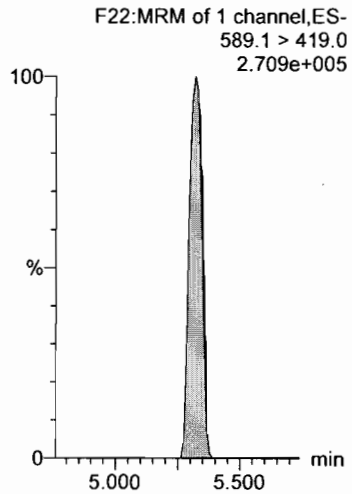
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Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_7, Date: 16-Dec-2018, Time: 15:53:20, ID: ST181216P1-6 PFC CS1 537 18L1008, Description: PFC CS1 537 18L1008

**d5-N-EtFOSAA**

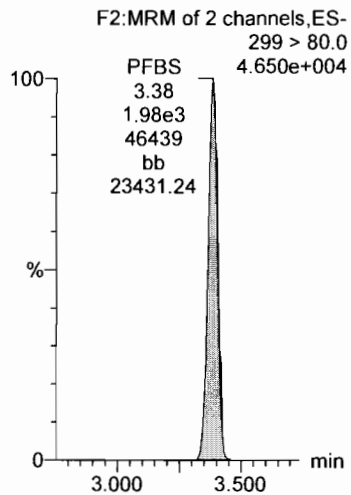


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

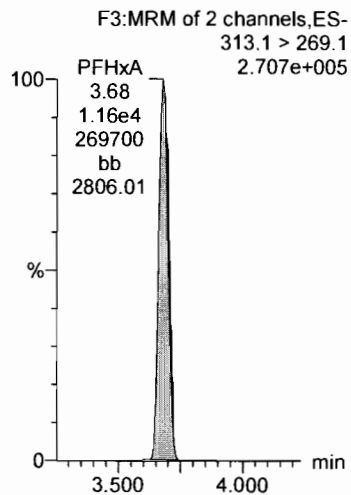
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Name: 181216P1\_8, Date: 16-Dec-2018, Time: 16:04:31, ID: ST181216P1-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009

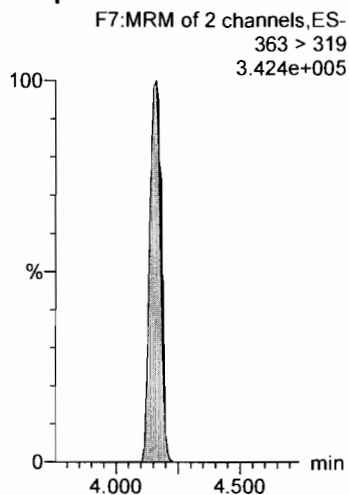
**PFBS**



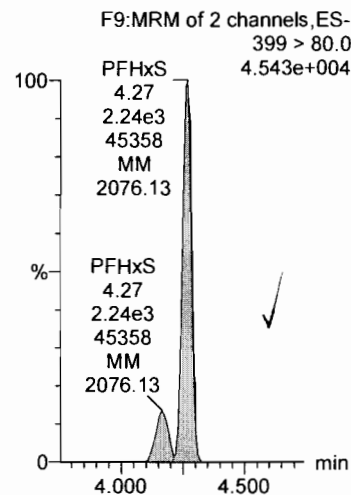
**PFHxA**



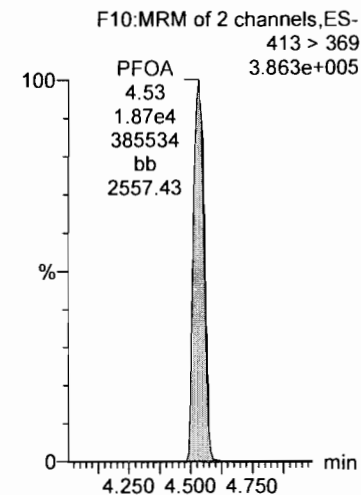
**PFHpA**



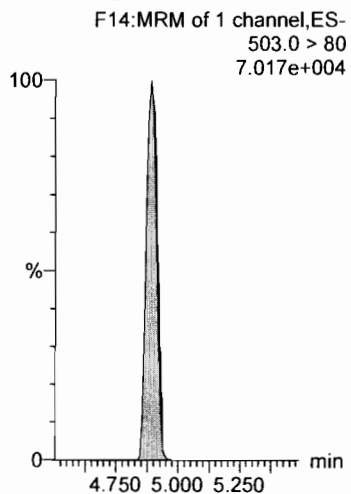
**PFHxS**



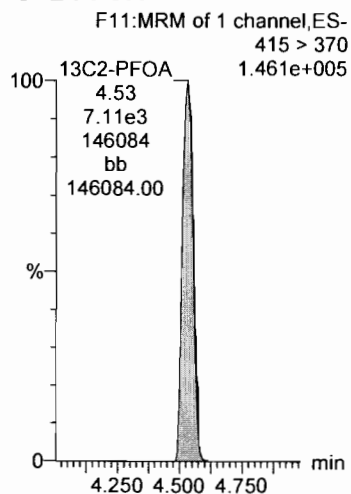
**PFOA**



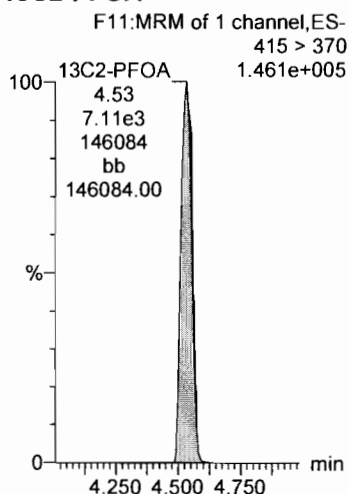
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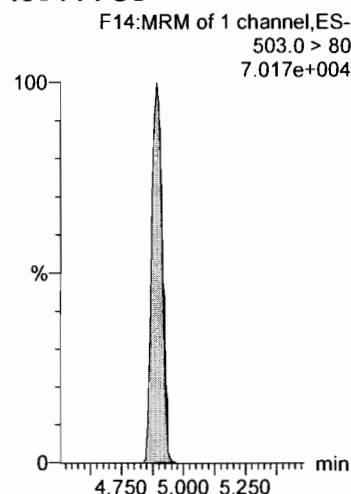
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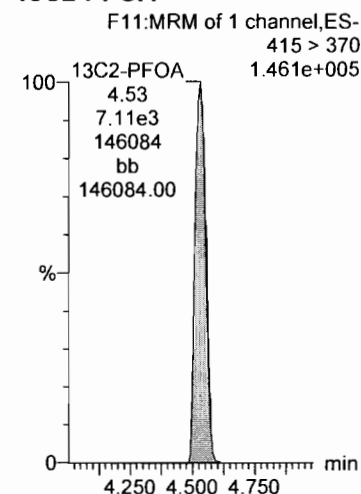
**13C2-PFOA**



**13C4-PFOS**



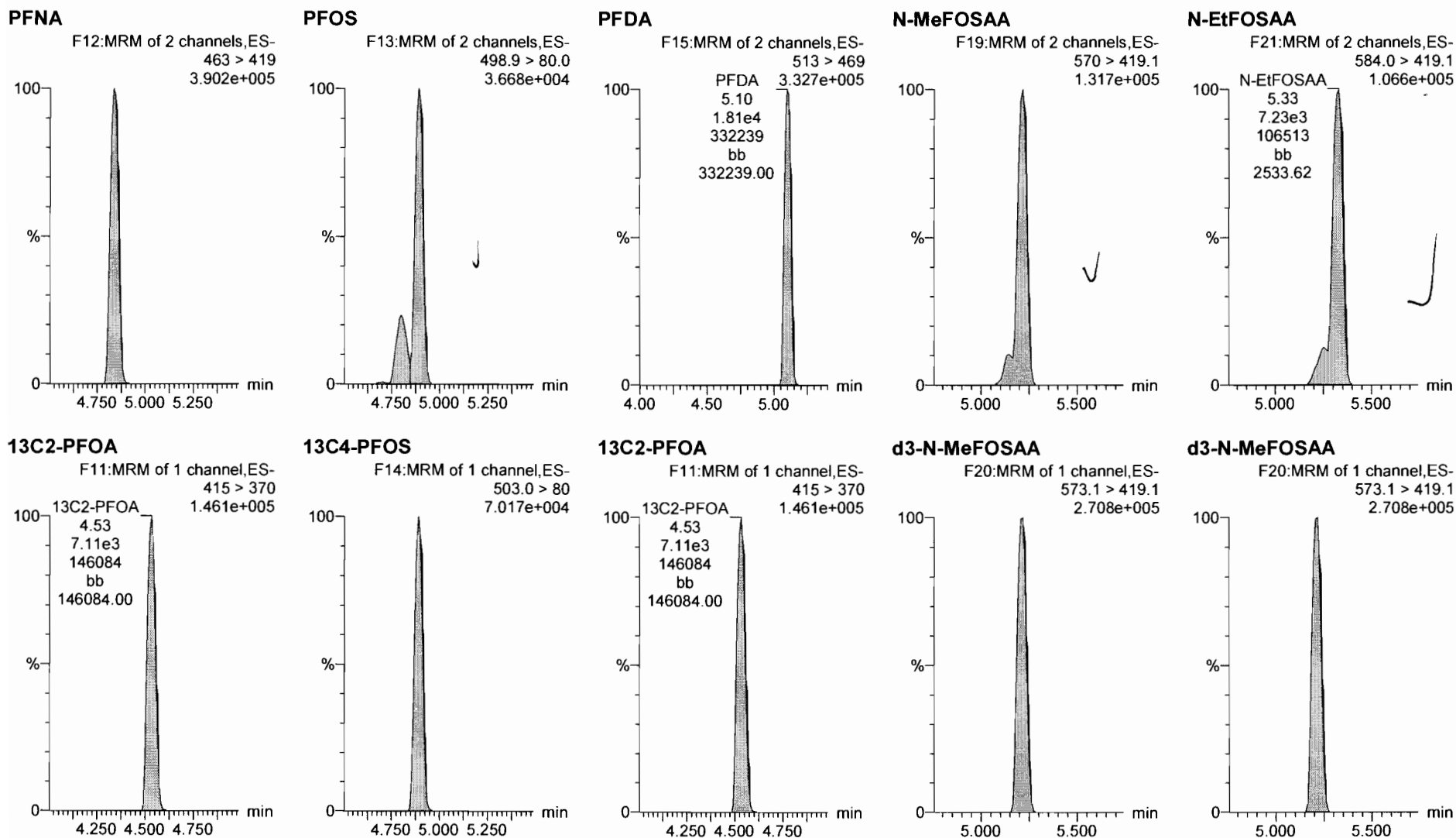
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Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_8, Date: 16-Dec-2018, Time: 16:04:31, ID: ST181216P1-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009



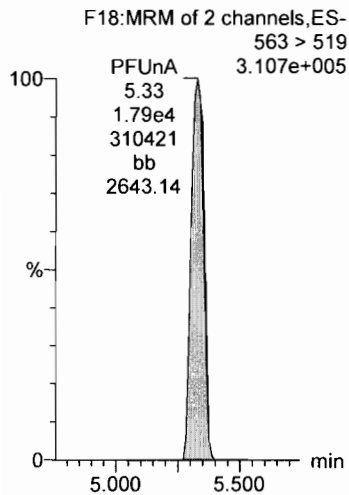


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

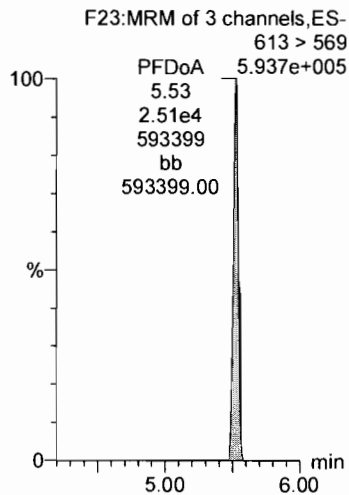
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Name: 181216P1\_8, Date: 16-Dec-2018, Time: 16:04:31, ID: ST181216P1-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009

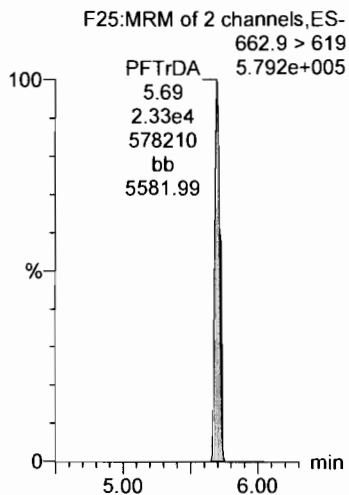
**PFUnA**



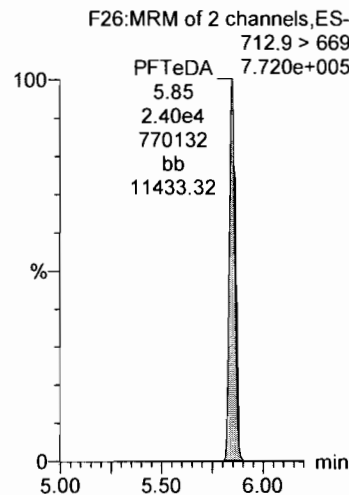
**PFDoA**



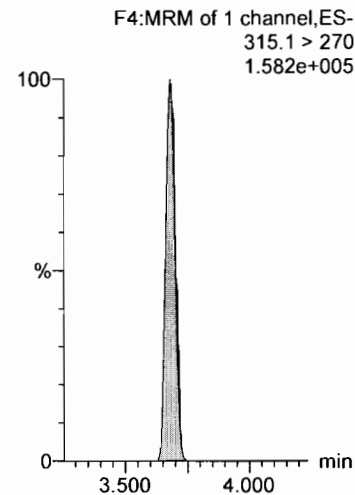
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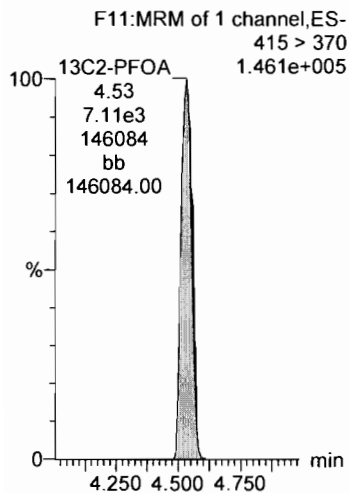
**PFTeDA**



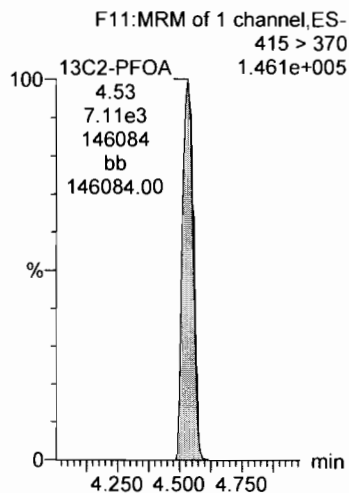
**13C2-PFHxA**



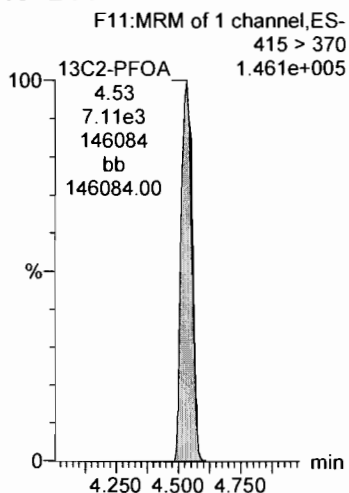
**13C2-PFOA**



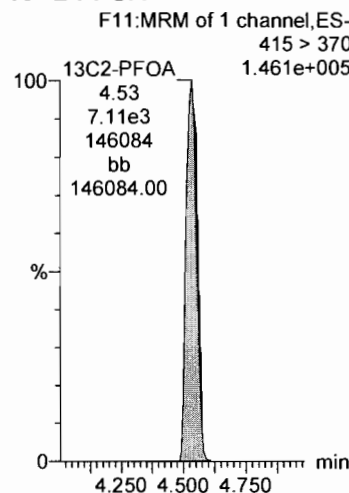
**13C2-PFOA**



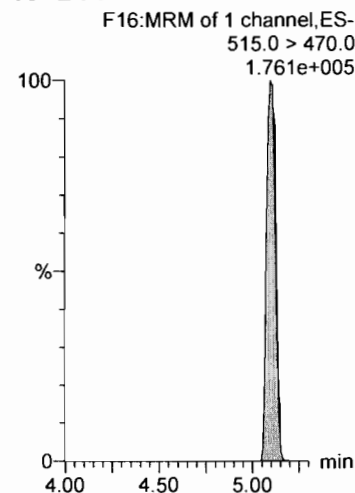
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



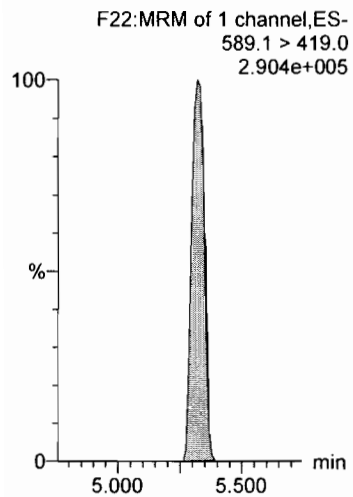
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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_8, Date: 16-Dec-2018, Time: 16:04:31, ID: ST181216P1-7 PFC CS2 537 18L1009, Description: PFC CS2 537 18L1009

**d5-N-EtFOSAA**

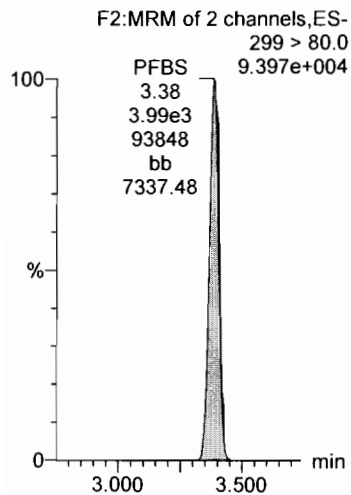


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

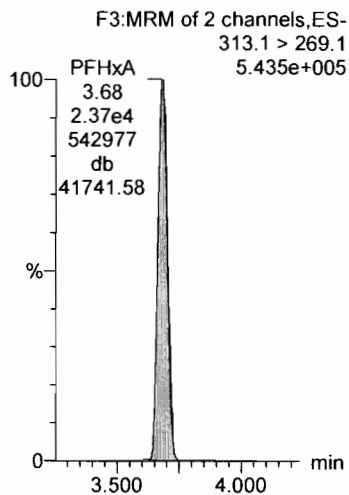
Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
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Name: 181216P1\_9, Date: 16-Dec-2018, Time: 16:15:41, ID: ST181216P1-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010

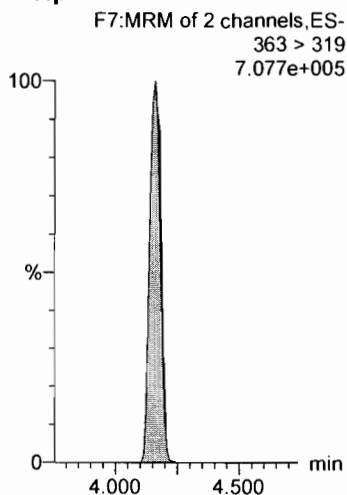
PFBS



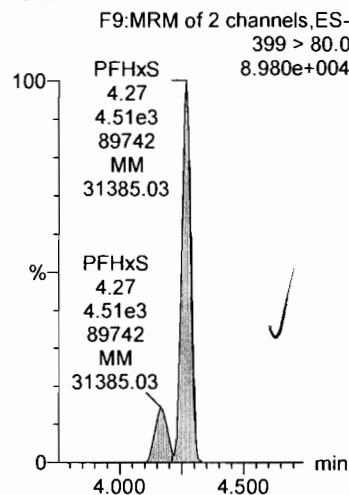
PFHxA



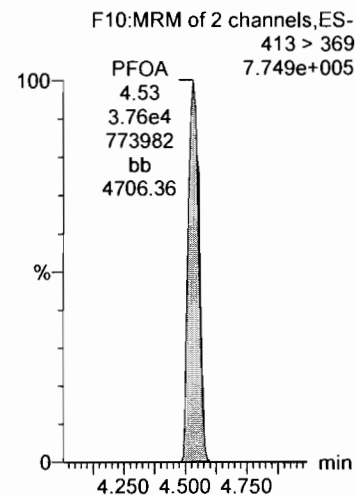
PFHpA



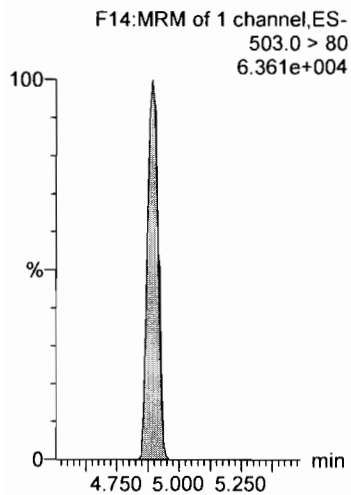
PFHxS



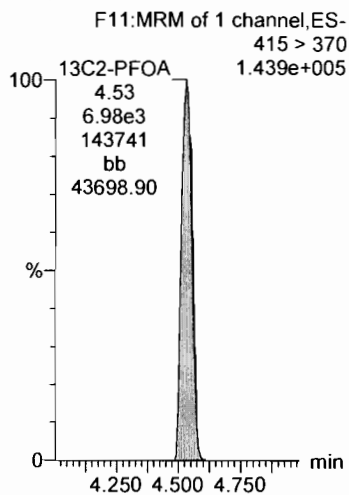
PFOA



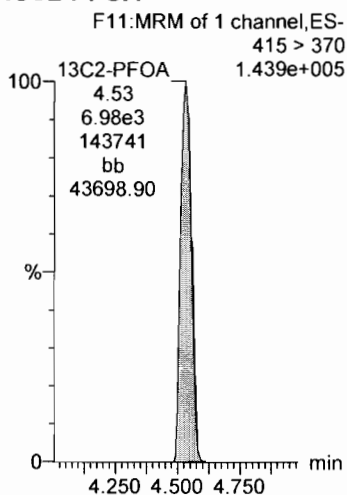
13C4-PFOS



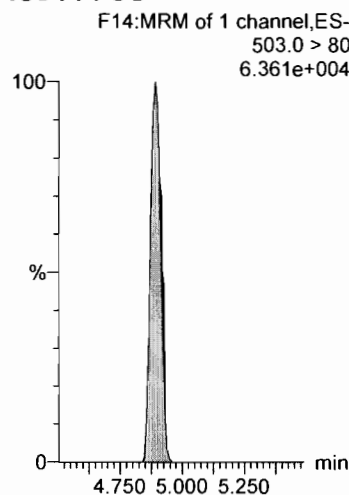
13C2-PFOA



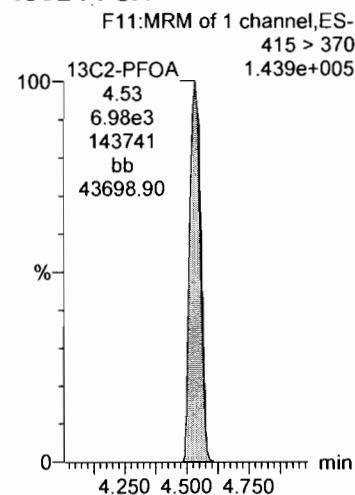
13C2-PFOA



13C4-PFOS



13C2-PFOA



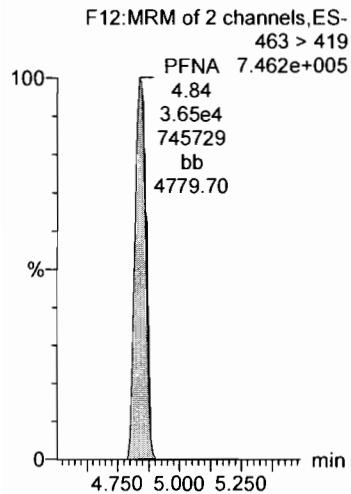
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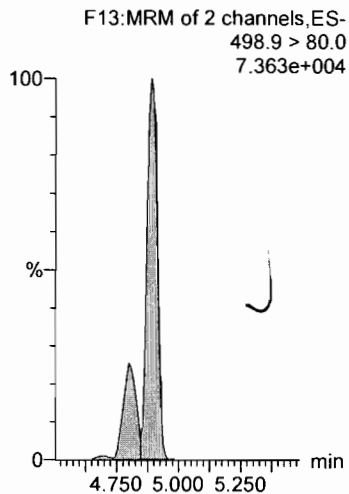
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_9, Date: 16-Dec-2018, Time: 16:15:41, ID: ST181216P1-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010

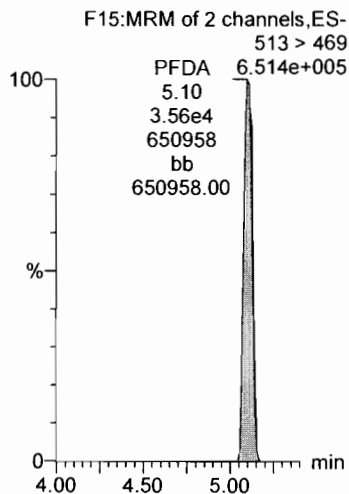
**PFNA**



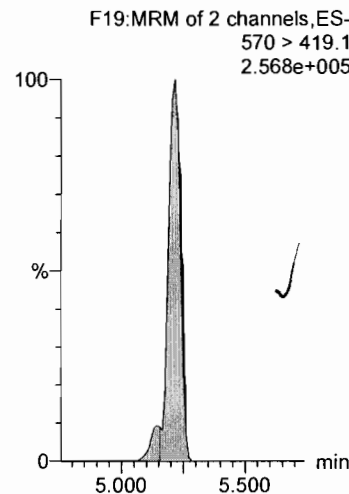
**PFOS**



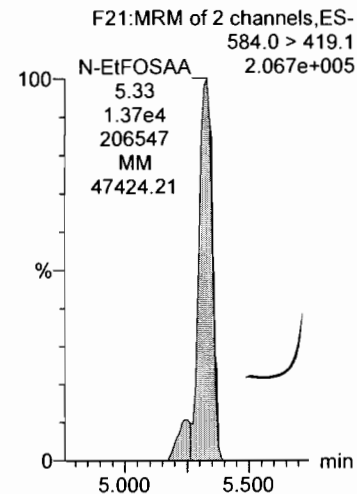
**PFDA**



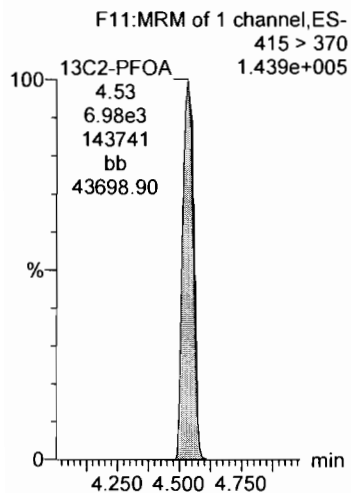
**N-MeFOSAA**



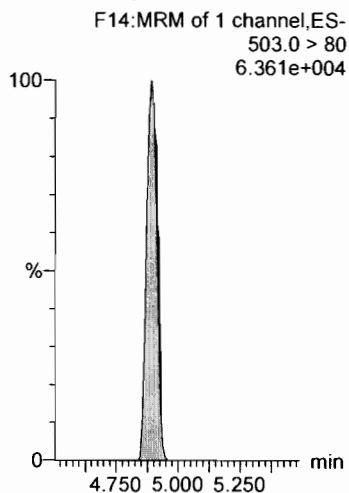
**N-EtFOSAA**



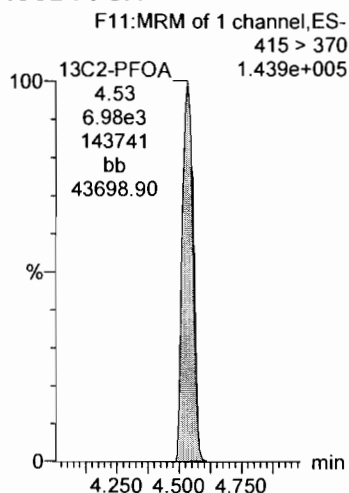
**13C2-PFOA**



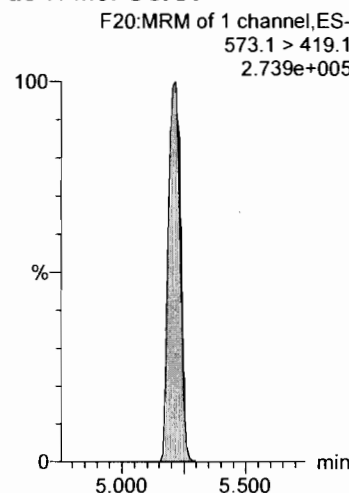
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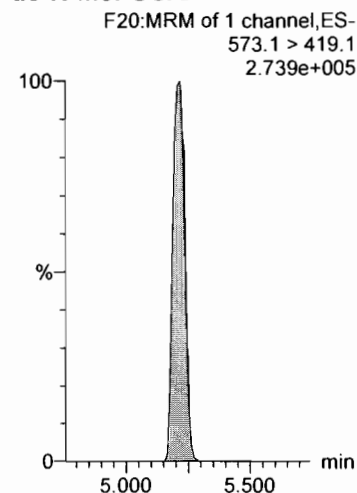
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

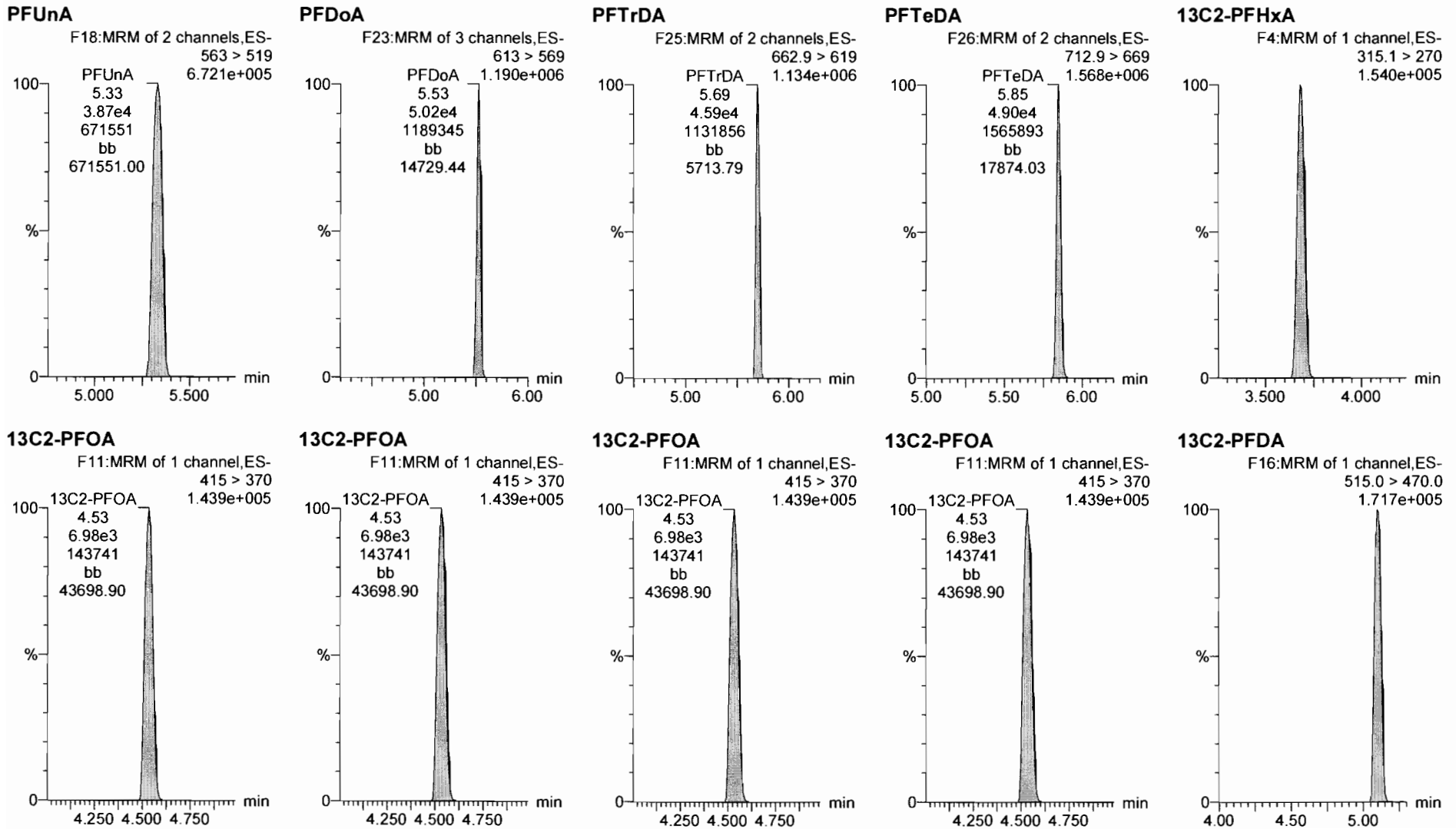


Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_9, Date: 16-Dec-2018, Time: 16:15:41, ID: ST181216P1-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010



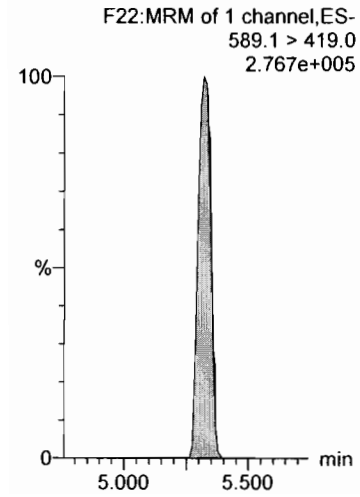
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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_9, Date: 16-Dec-2018, Time: 16:15:41, ID: ST181216P1-8 PFC CS3 537 18L1010, Description: PFC CS3 537 18L1010

**d5-N-EtFOSAA**

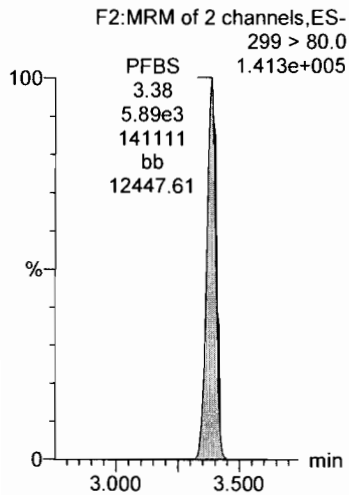


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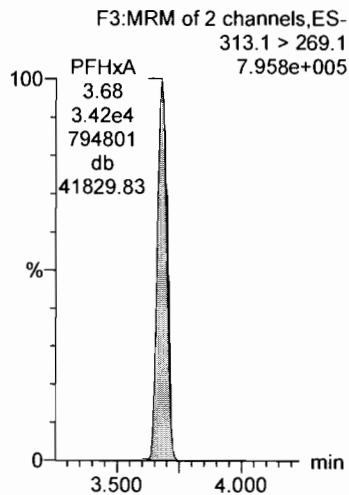
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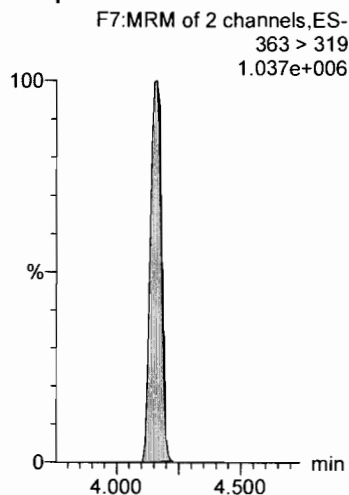
**PFBS**



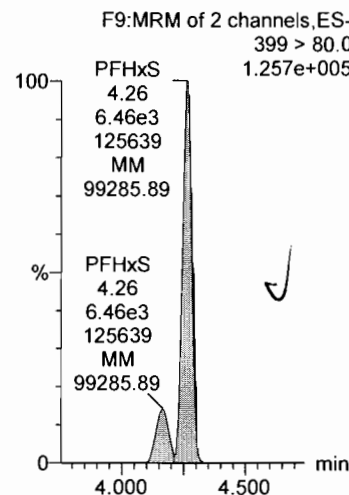
**PFHxA**



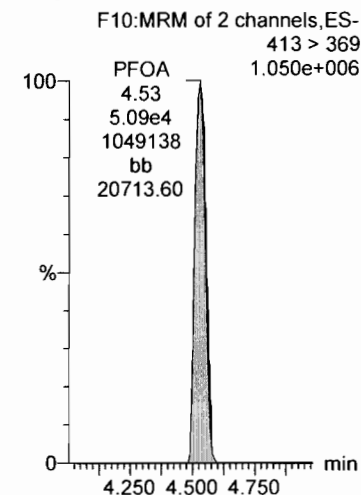
**PFHpA**



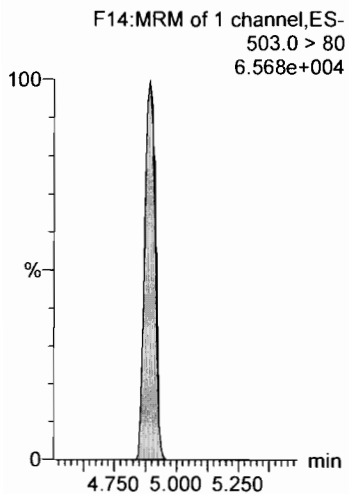
**PFHxS**



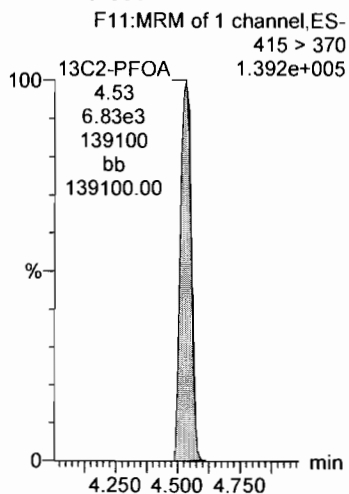
**PFOA**



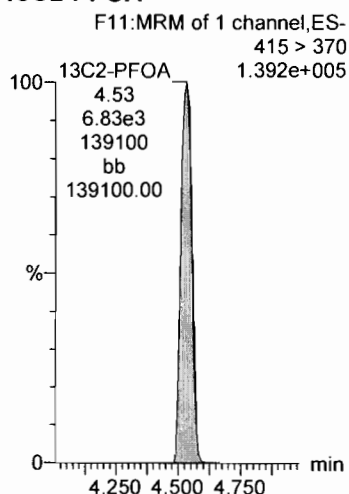
**13C4-PFOS**



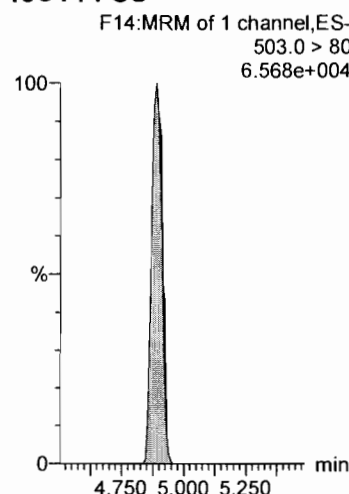
**13C2-PFOA**



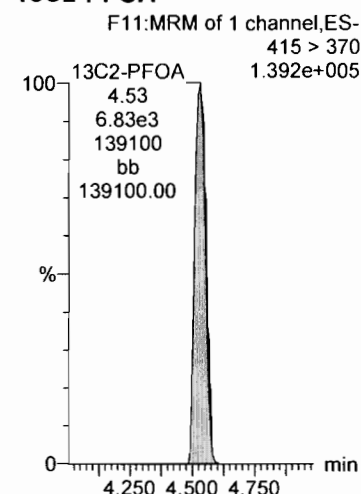
**13C2-PFOA**



**13C4-PFOS**



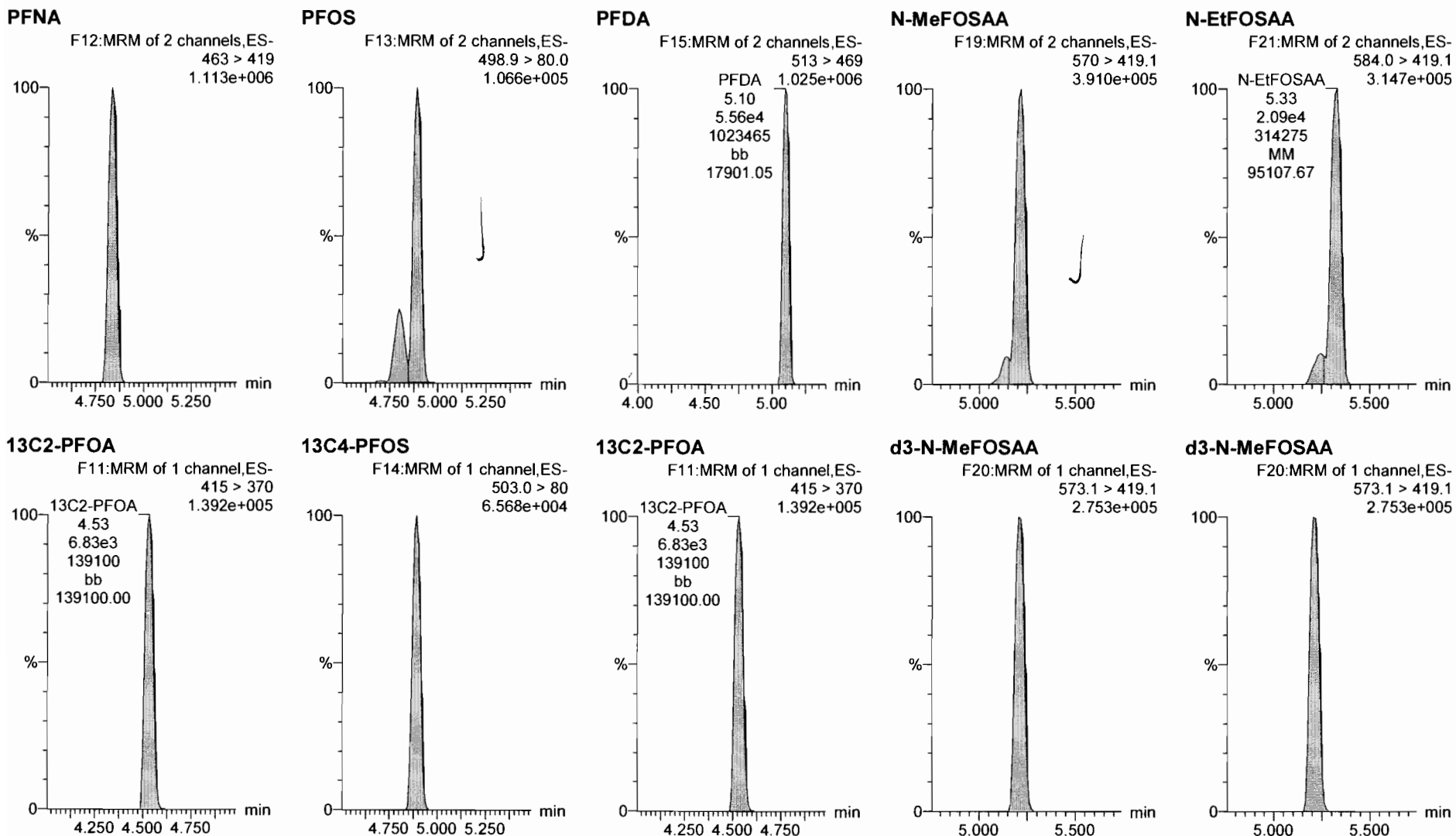
**13C2-PFOA**



Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_10, Date: 16-Dec-2018, Time: 16:26:52, ID: ST181216P1-9 PFC CS4 537 18L1011, Description: PFC CS4 537 18L1011



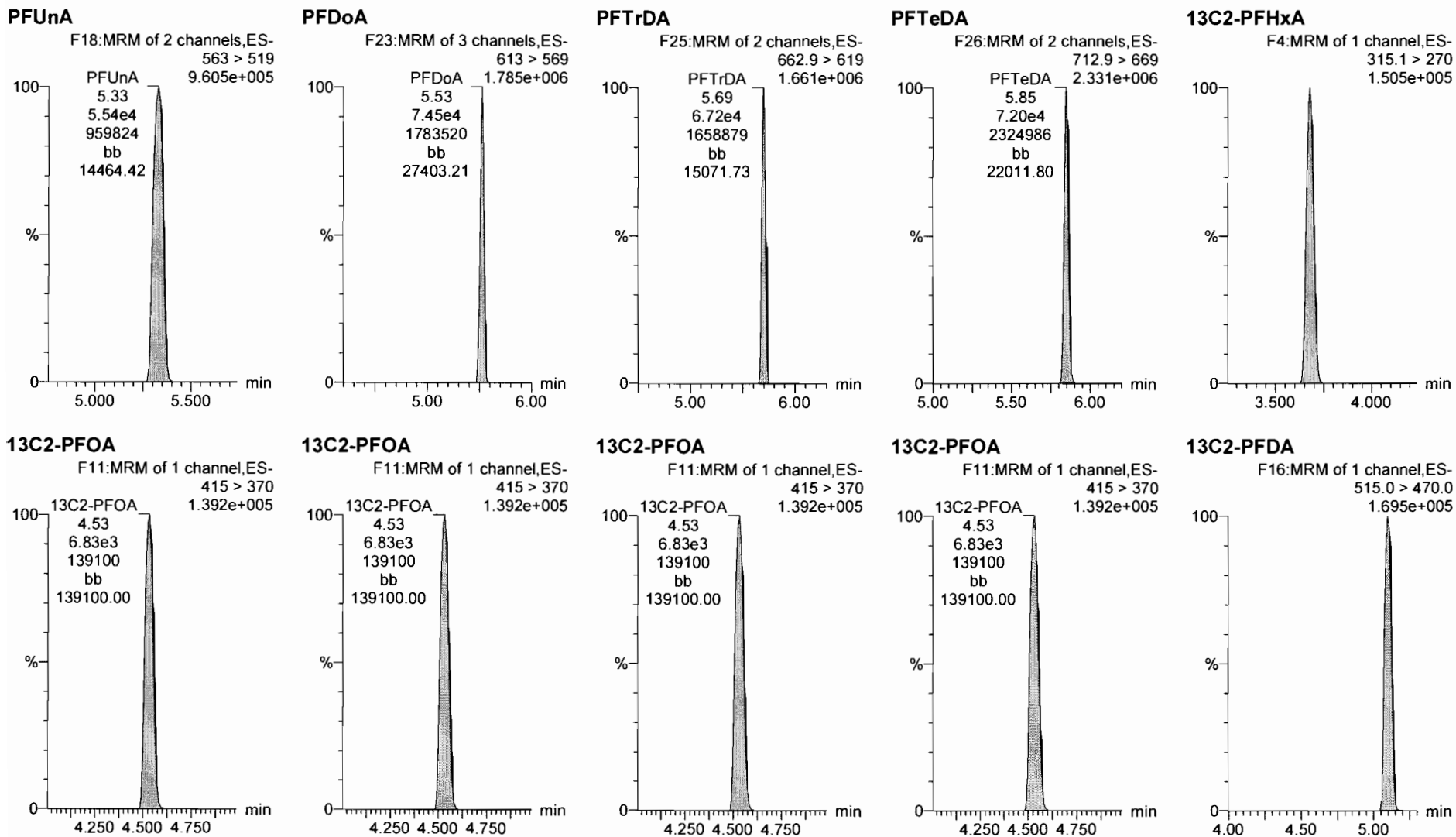


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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

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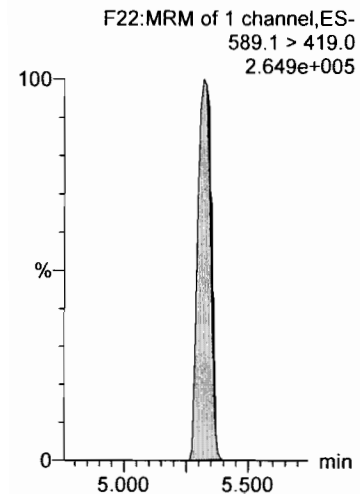
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Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_10, Date: 16-Dec-2018, Time: 16:26:52, ID: ST181216P1-9 PFC CS4 537 18L1011, Description: PFC CS4 537 18L1011

**d5-N-EtFOSAA**

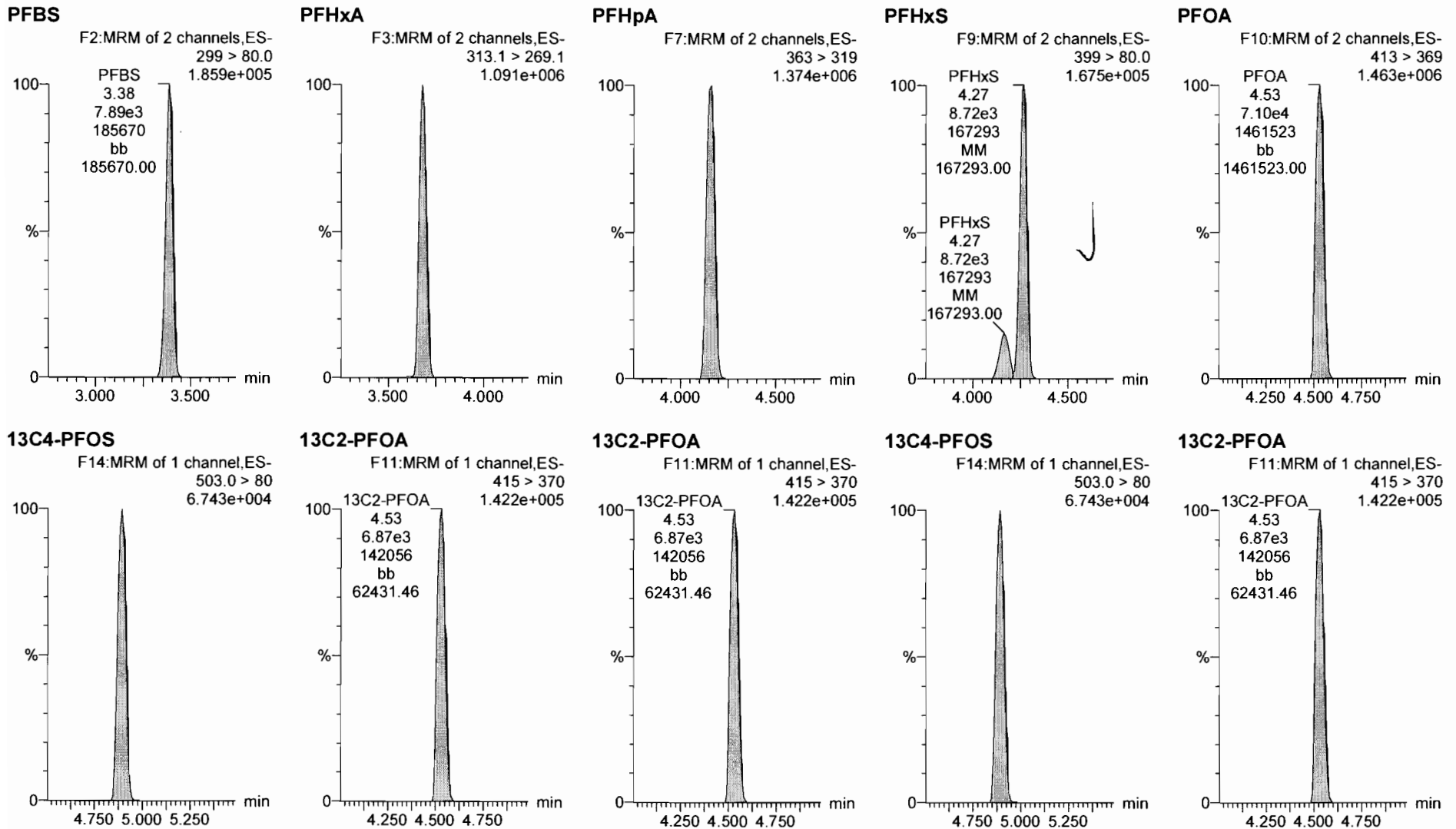


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Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

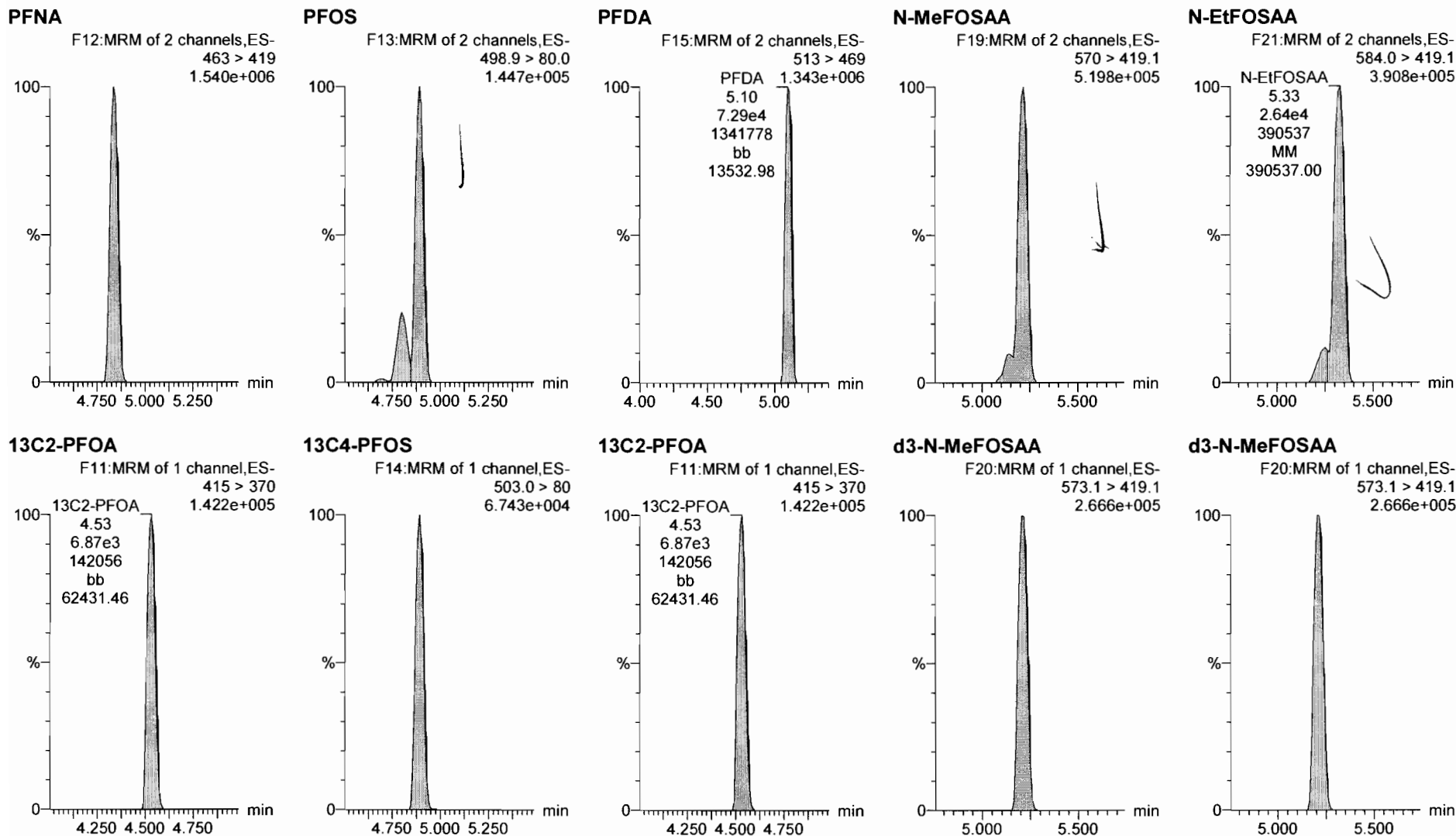
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Dataset: D:\PFAS.PRO\RESULTS\181216p1\181216P1-CRV.qld

Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_11, Date: 16-Dec-2018, Time: 16:38:11, ID: ST181216P1-10 PFC CS5 537 18L1012, Description: PFC CS5 537 18L1012



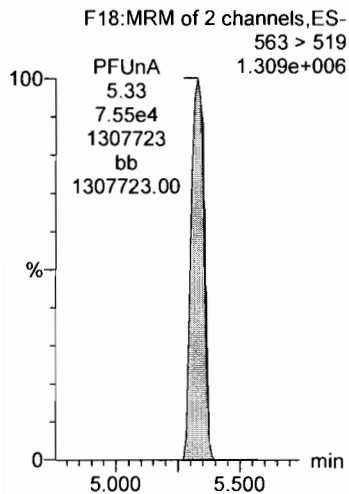
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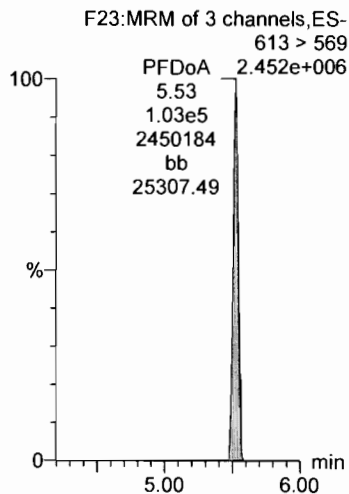
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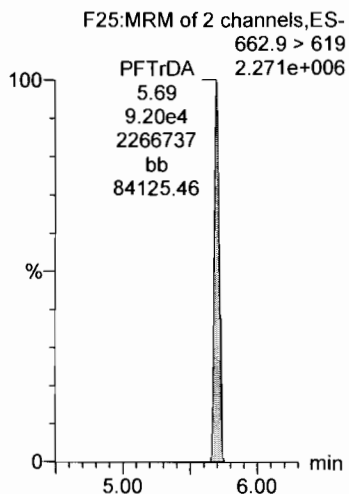
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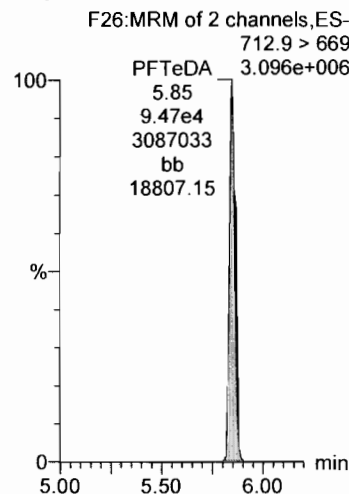
**PFDaA**



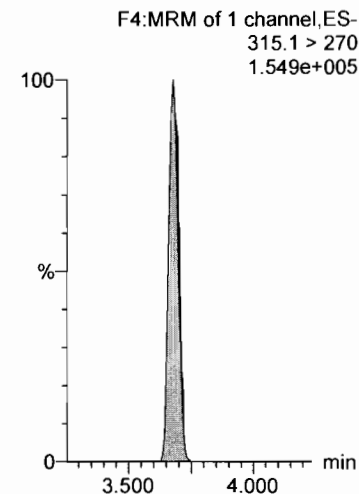
**PFTrDA**



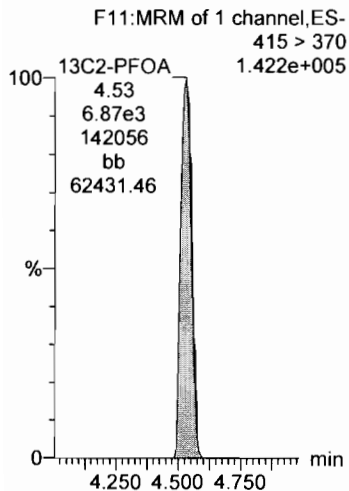
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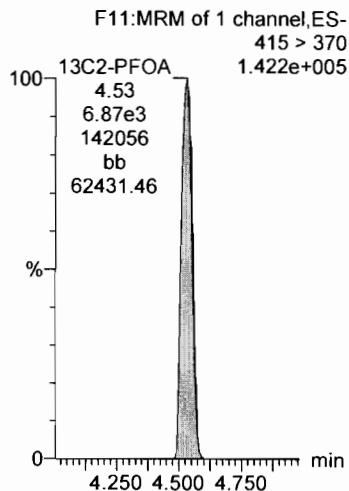
**13C2-PFHxA**



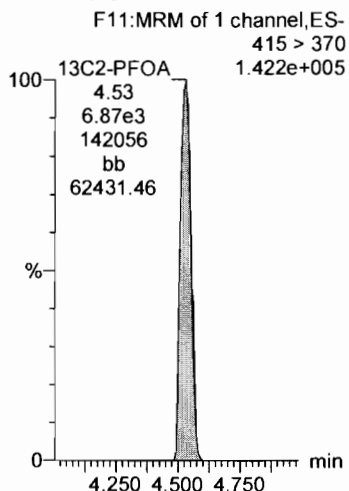
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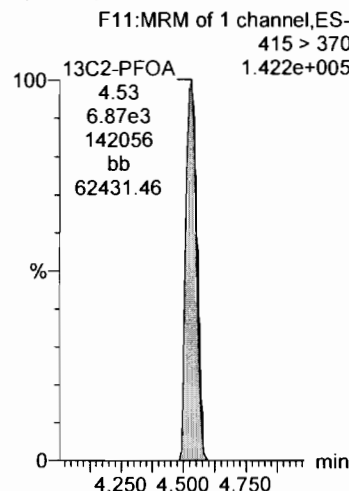
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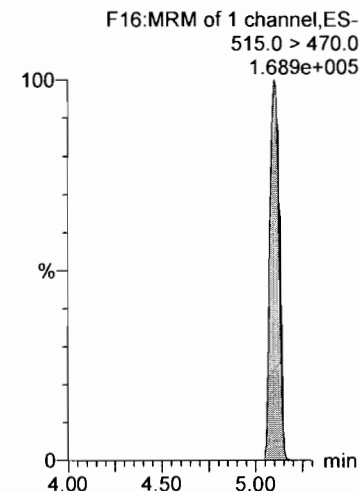
**13C2-PFOA**



**13C2-PFOA**



**13C2-PFDA**



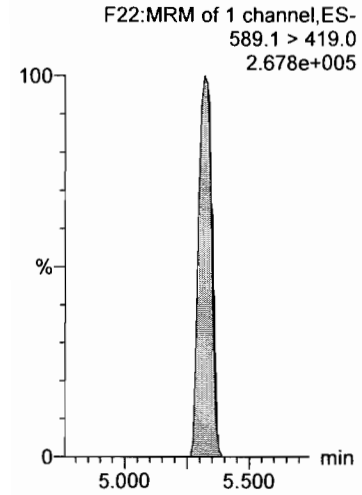
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Last Altered: Sunday, December 16, 2018 17:34:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:36:13 Pacific Standard Time

Name: 181216P1\_11, Date: 16-Dec-2018, Time: 16:38:11, ID: ST181216P1-10 PFC CS5 537 18L1012, Description: PFC CS5 537 18L1012

d5-N-EtFOSAA



Dataset: Untitled

Last Altered: Sunday, December 16, 2018 17:58:53 Pacific Standard Time  
Printed: Sunday, December 16, 2018 17:59:45 Pacific Standard Time

*MTT*  
*12/17/18*

Name: 181216P1\_13, Date: 16-Dec-2018, Time: 17:00:49, ID: ST181216P1-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18L1013

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF Mean	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 80.0	888.723	3299.915	1.00		3.36	3.39	7.73	9.65	96.5
2	2 PFHxA	313.1 > 269.1	4451.837	7469.358	1.00		3.68	3.69	5.96	8.87	88.7
3	4 PFHpA	363 > 319	6658.693	7469.358	1.00		4.15	4.16	8.91	8.97	89.7
4	6 PFHxS	399 > 80.0	979.188	3299.915	1.00		4.26	4.27	8.52	9.86	98.6
5	7 PFOA	413 > 369	7307.983	7469.358	1.00		4.53	4.53	9.78	9.48	94.8
6	24 13C4-PFOS	503.0 > 80	3299.915	3299.915	1.00	1.000	4.87	4.89	28.7	28.7	100.0
7	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
8	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
9	24 13C4-PFOS	503.0 > 80	3299.915	3299.915	1.00	1.000	4.87	4.89	28.7	28.7	100.0
10	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
11	-1										
12	8 PFNA	463 > 419	7095.790	7469.358	1.00		4.85	4.84	9.50	8.93	89.3
13	9 PFOS	498.9 > 80.0	1051.844	3299.915	1.00		4.89	4.89	9.15	10.2	102.5
14	11 PFDA	513 > 469	7195.896	7469.358	1.00		5.11	5.11	9.63	9.48	94.8
15	12 N-MeFOSAA	570 > 419.1	2892.090	15549.612	1.00		5.22	5.22	7.44	9.13	91.3
16	13 N-EtFOSAA	584.0 > 419.1	2836.767	15549.612	1.00		5.32	5.33	7.30	9.89	98.9
17	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
18	24 13C4-PFOS	503.0 > 80	3299.915	3299.915	1.00	1.000	4.87	4.89	28.7	28.7	100.0
19	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
20	25 d3-N-MeFOSAA	573.1 > 419.1	15549.612	15549.612	1.00	1.000	5.20	5.22	40.0	40.0	100.0
21	25 d3-N-MeFOSAA	573.1 > 419.1	15549.612	15549.612	1.00	1.000	5.20	5.22	40.0	40.0	100.0
22	-1										
23	14 PFUnA	563 > 519	5962.430	7469.358	1.00		5.35	5.33	7.98	7.37	73.7
24	16 PFDoA	613 > 569	9529.651	7469.358	1.00		5.55	5.53	12.8	8.74	87.4
25	17 PFTTrDA	662.9 > 619	9112.278	7469.358	1.00		5.71	5.70	12.2	9.24	92.4
26	18 PFTeDA	712.9 > 669	9409.211	7469.358	1.00		5.87	5.85	12.6	9.07	90.7
27	19 13C2-PFHxA	315.1 > 270	6915.183	7469.358	1.00	0.942	3.68	3.68	9.26	9.83	98.3
28	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
29	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
30	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
31	23 13C2-PFOA	415 > 370	7469.358	7469.358	1.00	1.000	4.51	4.53	10.0	10.0	100.0
32	21 13C2-PFDA	515.0 > 470.0	9601.771	7469.358	1.00	1.301	5.12	5.11	12.9	9.88	98.8
33	-1										
34	22 d5-N-EtFOSAA	589.1 > 419.0	17147.160	15549.612	1.00	1.070	5.33	5.32	44.1	41.2	103.0

*am*  
*12/16/18*

Dataset: Untitled

Last Altered: Sunday, December 16, 2018 17:58:53 Pacific Standard Time

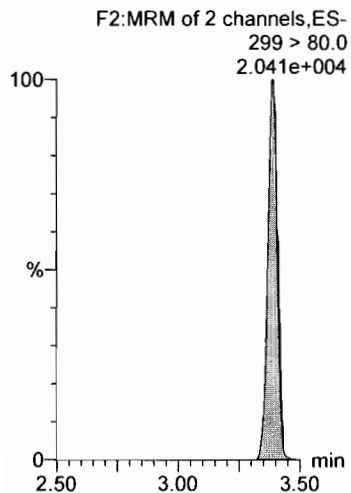
Printed: Sunday, December 16, 2018 17:59:45 Pacific Standard Time

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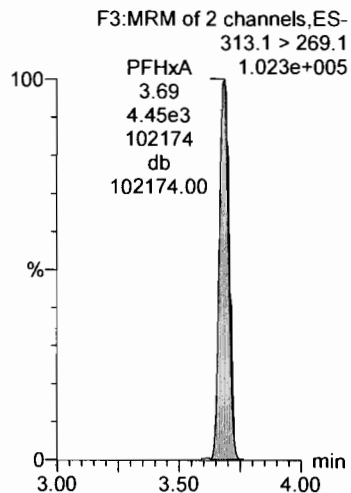
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Name: 181216P1\_13, Date: 16-Dec-2018, Time: 17:00:49, ID: ST181216P1-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18L1013

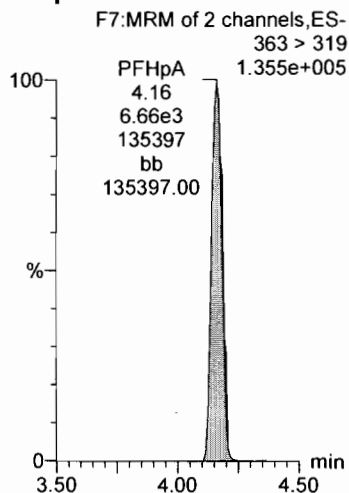
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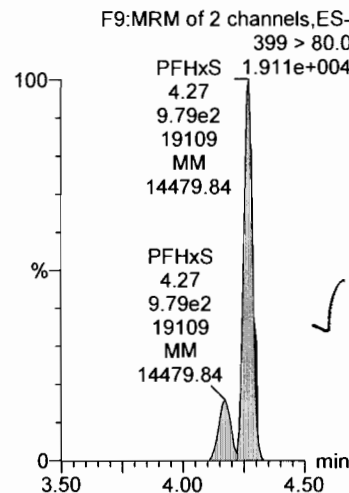
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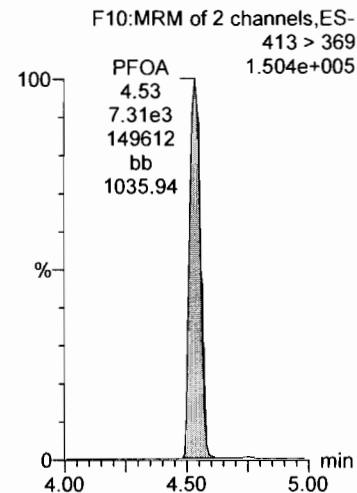
PFHpA



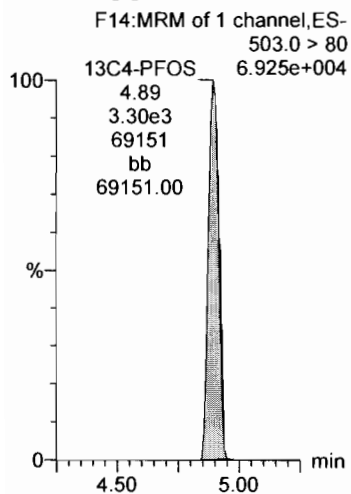
PFHxS



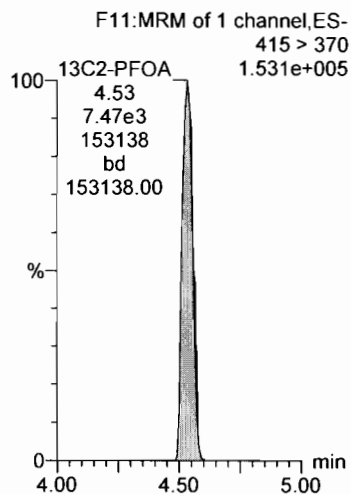
PFOA



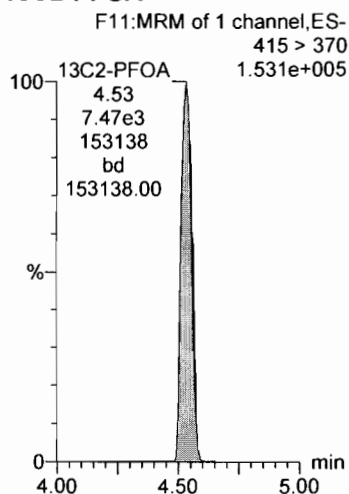
13C4-PFOS



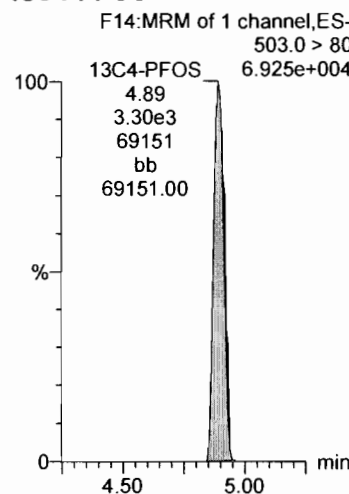
13C2-PFOA



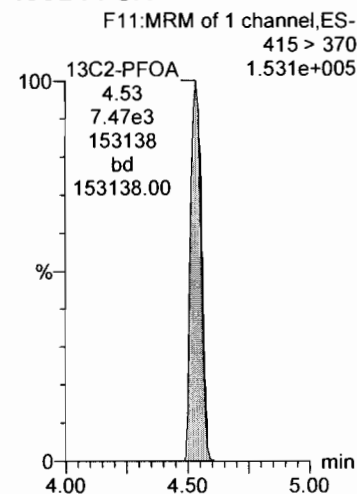
13C2-PFOA



13C4-PFOS



13C2-PFOA





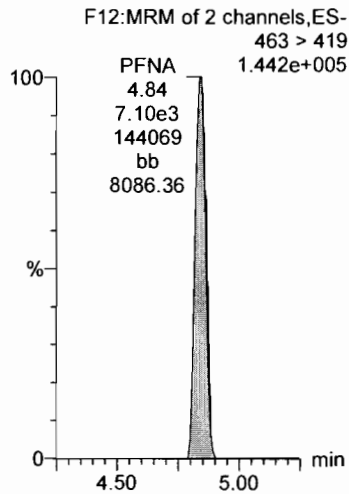
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Last Altered: Sunday, December 16, 2018 17:58:53 Pacific Standard Time

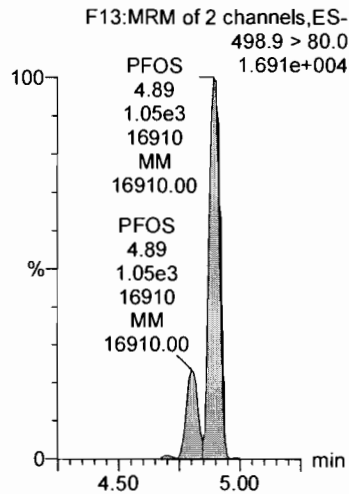
Printed: Sunday, December 16, 2018 17:59:45 Pacific Standard Time

Name: 181216P1\_13, Date: 16-Dec-2018, Time: 17:00:49, ID: ST181216P1-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18L1013

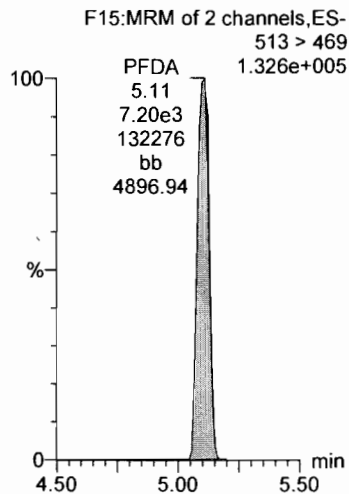
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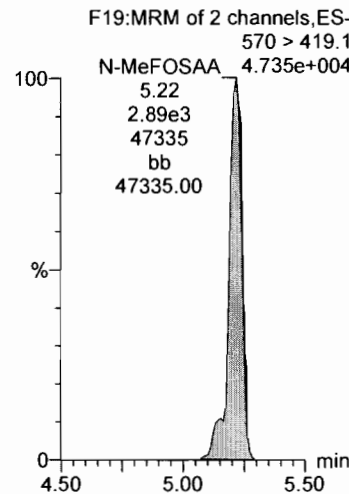
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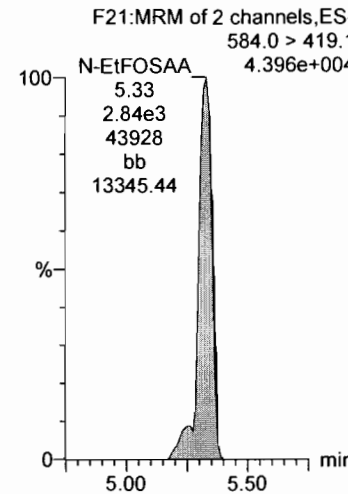
**PFDA**



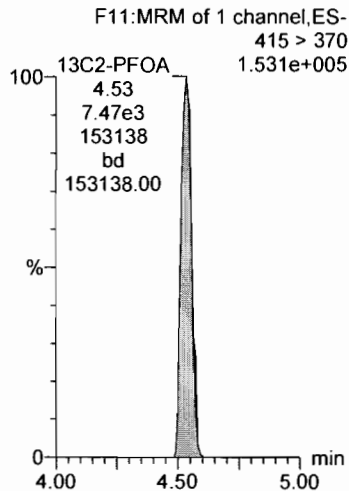
**N-MeFOSAA**



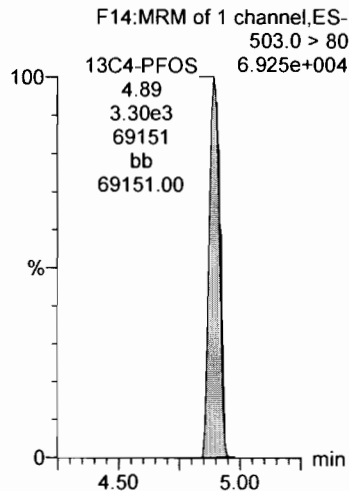
**N-EtFOSAA**



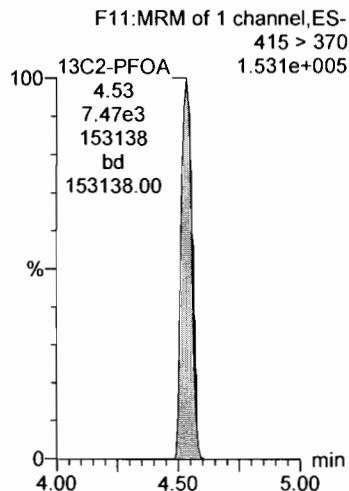
**13C2-PFOA**



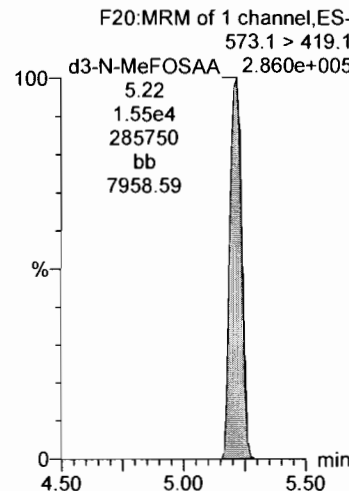
**13C4-PFOS**



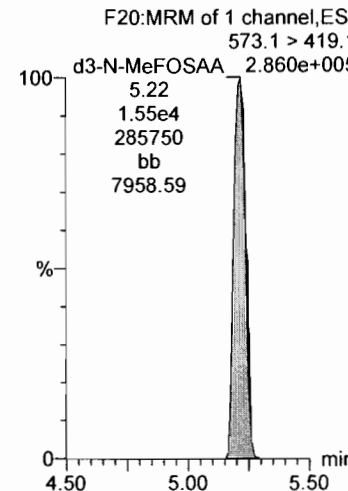
**13C2-PFOA**



**d3-N-MeFOSAA**



**d3-N-MeFOSAA**

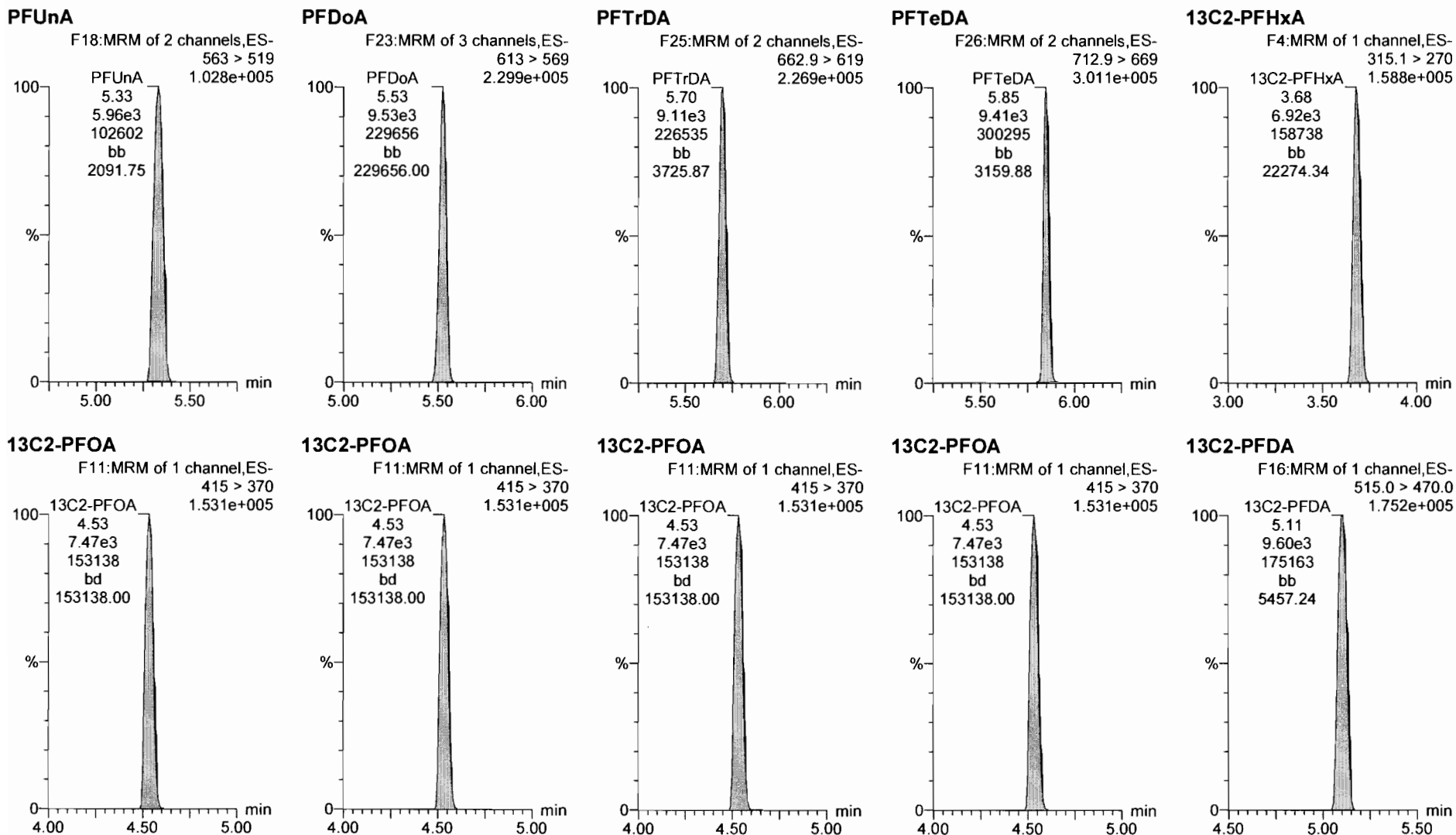


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Last Altered: Sunday, December 16, 2018 17:58:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:59:45 Pacific Standard Time

Name: 181216P1\_13, Date: 16-Dec-2018, Time: 17:00:49, ID: ST181216P1-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18L1013



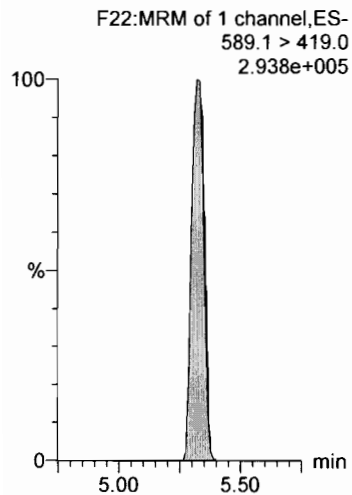
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Last Altered: Sunday, December 16, 2018 17:58:53 Pacific Standard Time

Printed: Sunday, December 16, 2018 17:59:45 Pacific Standard Time

Name: 181216P1\_13, Date: 16-Dec-2018, Time: 17:00:49, ID: ST181216P1-1 PFC ICV 537 18L1013, Description: PFC ICV 537 18L1013

**d5-N-EtFOSAA**



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"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","1763-23-  
1","HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION  
","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","335-76-2","PERFLUORODECANOIC ACID  
(PFDA)","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","2355-31-  
9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","2991-50-  
6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC  
ACID  
(PFUNA)","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID  
(PFDOA)","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","72629-94-  
8","PFTTrDA","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","376-06-  
7","PFTeDA","","","TRG","Yes","N","U","Y","0.00296","0.00486","0.00973","UG\_L","UG\_L","","","","","","","","",  
"","","","","","","","",""

"Big Field-DW-120618","537","12/15/18","02:06","N","NA","000","13C2-PFHxA","13C2-



Big Field-FB-120618", "537", "12/15/18", "02:17", "N", "NA", "000", "13C2-PFDA", "13C2-PFDA", "96.9", "IS", "Yes", "Y", "Y", "PCT\_REC", "100", "96.9", "96.9", "70", "130",  
Big Field-FB-120618", "537", "12/15/18", "02:17", "N", "NA", "000", "d5-EtFOSAA", "d5-EtFOSAA", "97.2", "IS", "Yes", "Y", "Y", "PCT\_REC", "100", "97.2", "97.2", "70", "130",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "375-73-5", "PFBS", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "307-24-4", "PERFLUOROHEXANOIC ACID (PFHXA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "375-85-9", "PERFLUOROHEPTANOIC ACID (PFHPA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "355-46-4", "PERFLUOROHEXANESULFONIC ACID (PFHXS)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "335-67-1", "PERFLUOROOCTANOIC ACID (PFOA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "375-95-1", "PERFLUORONONANOIC ACID (PFNA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "1763-23-1", "HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "335-76-2", "PERFLUORODECANOIC ACID (PFDA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "2355-31-9", "MeFOSAA", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "2991-50-6", "EtFOSAA", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "2058-94-8", "PERFLUOROUNDECANOIC ACID (PFUNA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "307-55-1", "PERFLUORODODECANOIC ACID (PFDOA)", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",  
Behind the Base-DW-120618", "537", "12/15/18", "02:28", "N", "NA", "000", "72629-94-8", "PFTTrDA", "TRG", "Yes", "N", "U", "Y", "0.00301", "0.00496", "0.00991", "UG\_L", "UG\_L",

"Behind the Base-DW-120618","537","12/15/18","02:28","N","NA","000","376-06-7","PFTeDA","TRG","Yes","N","U","Y","0.00301","0.00496","0.00991","UG\_L","UG\_L","70","130"

"Behind the Base-DW-120618","537","12/15/18","02:28","N","NA","000","13C2-PFHxA","13C2-PFHxA","104","IS","Yes","Y","Y","PCT\_REC","100","104","104","70","130"

"Behind the Base-DW-120618","537","12/15/18","02:28","N","NA","000","13C2-PFDA","13C2-PFDA","103","IS","Yes","Y","Y","PCT\_REC","100","103","103","70","130"

"Behind the Base-DW-120618","537","12/15/18","02:28","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","91.3","IS","Yes","Y","Y","PCT\_REC","100","91.3","91.3","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","375-73-5","PFBS","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","1763-23-1","HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","2355-31-9","MeFOSAA","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","2991-50-6","EtFOSAA","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"

"Behind the Base-FB-120618","537","12/15/18","02:39","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","TRG","Yes","N","U","Y","0.00301","0.00494","0.00989","UG\_L","UG\_L","70","130"







(PFDA),,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","2355-31-9","MeFOSAA",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","2991-50-6","EtFOSAA",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","72629-94-8","PFTTrDA",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","376-06-7","PFTeDA",,,,,,"TRG","Yes","N","U","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","13C2-PFHxA","13C2-PFHxA","106",,,,,,"IS","Yes","Y",,,,,,"PCT\_REC",,,,,,"100","106","106",,,,,,"70","130",,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","13C2-PFDA","13C2-PFDA","103",,,,,,"IS","Yes","Y",,,,,,"PCT\_REC",,,,,,"100","103","103",,,,,,"70","130",,,,,  
"Shooting Range1-FB-120618","537","12/15/18","03:01","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","103",,,,,,"IS","Yes","Y",,,,,,"PCT\_REC",,,,,,"100","103","103",,,,,,"70","130",,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","375-73-5","PFBS",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","335-67-1","PERFLUOROOCCTANOIC ACID (PFOA)",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","1763-23-1","HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION",,,,,,"TRG","Yes","N","U","Y","0.00320","0.00525","0.0105","UG\_L","UG\_L",,,,,,,  
"Source Blank","537","12/15/18","03:13","N","NA","000","335-76-2","PERFLUORODECANOIC ACID





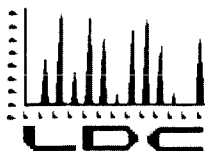


6","EtFOSAA","0.0212","","TRG","Yes","Y","","Y","0.00304","0.00500","0.0100","UG\_L","UG\_L","","","","0.0200",  
,"0.0212","106","","","","50","150","","",""  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID  
(PFUNA)","0.0180","","TRG","Yes","Y","","Y","0.00304","0.00500","0.0100","UG\_L","UG\_L","","","","0.0200","0.0  
180","90.1","","","","50","150","","",""  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID  
(PFD OA)","0.0195","","TRG","Yes","Y","","Y","0.00304","0.00500","0.0100","UG\_L","UG\_L","","","","0.0200","0.0  
195","97.6","","","","50","150","","",""  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","72629-94-  
8","PFT rDA","0.0192","","TRG","Yes","Y","","Y","0.00304","0.00500","0.0100","UG\_L","UG\_L","","","","0.0200",  
0.0192","95.9","","","","50","150","","",""  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","376-06-  
7","PFT eDA","0.0191","","TRG","Yes","Y","","Y","0.00304","0.00500","0.0100","UG\_L","UG\_L","","","","0.0200",  
0.0191","95.5","","","","50","150","","",""  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","13C2-PFHxA","13C2-  
PFHxA","100","","IS","Yes","Y","","Y","","","PCT\_REC","","","","100","100","100","","","","70","130",  
","  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","13C2-PFDA","13C2-  
PFDA","100","","IS","Yes","Y","","Y","","","PCT\_REC","","","","100","100","100","","","","70","130",  
"  
"B8L0076-BS1","537","12/15/18","01:21","N","NA","000","d5-EtFOSAA","d5-  
EtFOSAA","76.4","","IS","Yes","Y","","Y","","","PCT\_REC","","","","100","76.4","76.4","","","","70","130  
"  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","375-73-  
5","PFBS","0.0532","","TRG","Yes","Y","","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.0342","0.01  
76","0.0532","108","","","","50","150","","",""  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID  
(PFHXA)","0.242","","TRG","Yes","Y","","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.213","0.0200  
","0.242","145","","","","50","150","","",""  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID  
(PFHPA)","0.135","","TRG","Yes","Y","H","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.0872","0.02  
00","0.135","240","","","","50","150","","+",""  
"B8L0076-MS1","537","12/17/18","19:41","N","NA","DL1","355-46-4","PERFLUOROHEXANESULFONIC ACID  
(PFHXS)","0.490","","TRG","Yes","Y","D,  
H","Y","0.0303","0.0498","0.0998","UG\_L","UG\_L","","","","0.362","0.0182","0.490","703","","","","50","150",  
","+"  
"B8L0076-MS1","537","12/17/18","19:41","N","NA","DL1","335-67-1","PERFLUORO OCTANOIC ACID  
(PFOA)","0.515","","TRG","Yes","Y","D,  
H","Y","0.0303","0.0498","0.0998","UG\_L","UG\_L","","","","0.246","0.0200","0.515","1350","","","","50","150",  
","+"  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","375-95-1","PERFLUORONONANOIC ACID  
(PFNA)","0.0596","","TRG","Yes","Y","H","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.0217","0.02  
00","0.0596","190","","","","50","150","","+",""  
"B8L0076-MS1","537","12/17/18","19:41","N","NA","DL1","1763-23-  
1","HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION  
","0.397","","TRG","Yes","Y","D","Y","0.0303","0.0498","0.0998","UG\_L","UG\_L","","","","0.375","0.0184","0.397",  
123","","","","50","150","",""  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","335-76-2","PERFLUORODECANOIC ACID  
(PFDA)","0.0214","","TRG","Yes","Y","","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.0200","0.0  
214","107","","","","50","150","",""  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","2355-31-  
9","MeFOSAA","0.0175","","TRG","Yes","Y","","Y","0.00303","0.00498","0.00998","UG\_L","UG\_L","","","","0.020  
0","0.0175","87.6","","","","50","150","",""  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","2991-50-

6","EtFOSAA","0.0208",,,,,,"TRG","Yes","Y",,"Y","0.00303","0.00498","0.00998","UG\_L","UG\_L",,,,,,"0.0200",  
,"0.0208","104",,,,,,"50","150",,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID  
(PFUNA)","0.0150",,,,,,"TRG","Yes","Y",,"Y","0.00303","0.00498","0.00998","UG\_L","UG\_L",,,,,,"0.0200",  
0.0150,"75.2",,,,,,"50","150",,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID  
(PFDOA)","0.0193",,,,,,"TRG","Yes","Y",,"Y","0.00303","0.00498","0.00998","UG\_L","UG\_L",,,,,,"0.0200",  
0.0193,"96.7",,,,,,"50","150",,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","72629-94-  
8","PFTTrDA","0.0192",,,,,,"TRG","Yes","Y",,"Y","0.00303","0.00498","0.00998","UG\_L","UG\_L",,,,,,"0.0200",  
,"0.0192","96.0",,,,,,"50","150",,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","376-06-  
7","PFTeDA","0.0181",,,,,,"TRG","Yes","Y",,"Y","0.00303","0.00498","0.00998","UG\_L","UG\_L",,,,,,"0.0200",  
,"0.0181","90.6",,,,,,"50","150",,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","13C2-PFHxA","13C2-  
PFHxA","104",,,,,,"IS","Yes","Y",,"Y",,,,,,"PCT\_REC",,,,,,"100","104","104",,,,,,"70","130",,,,,,  
,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","13C2-PFDA","13C2-  
PFDA","102",,,,,,"IS","Yes","Y",,"Y",,,,,,"PCT\_REC",,,,,,"100","102","102",,,,,,"70","130",,,,,,  
,,,,,  
"B8L0076-MS1","537","12/15/18","01:32","N","NA","000","d5-EtFOSAA","d5-  
EtFOSAA","89.9",,,,,,"IS","Yes","Y",,"Y",,,,,,"PCT\_REC",,,,,,"100","89.9","89.9",,,,,,"70","130",  
,,,,,  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","375-73-  
5","PFBS","0.0553",,,,,,"TRG","Yes","Y",,"Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0342",  
0.0179,"0.0553","118","0.0532","0.0179","0.0553","118","8.85","50","150","30",,,,,,  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID  
(PFHXA)","0.235",,,,,,"TRG","Yes","Y",,"Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.213",  
0.0202",  
0.235,"110","0.242","0.0202","0.235","110","27.5","50","150","30",,,,,,  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID  
(PFHPA)","0.116",,,,,,"TRG","Yes","Y","H","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0872",  
0.0202",  
0.116,"143","0.135","0.0202","0.116","143","50.7","50","150","30",,,,,,"\*"  
"B8L0076-MSD1","537","12/17/18","19:52","N","NA","DL1","355-46-4","PERFLUOROHEXANESULFONIC ACID  
(PFHXS)","0.397",,,,,,"TRG","Yes","Y","D,  
H","Y","0.0307","0.0504","0.101","UG\_L","UG\_L",,,,,,"0.362","0.0184","0.397","187","0.490","0.0184",  
0.397",  
187,"116","50","150","30",,,,,,"\*"  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","335-67-1","PERFLUOROOCCTANOIC ACID  
(PFOA)","0.331",,,,,,"TRG","Yes","Y","H","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.246",  
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0.331,"420","0.515","0.0202","0.331","420","105","50","150","30",,,,,,"\*"  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","375-95-1","PERFLUORONONANOIC ACID  
(PFNA)","0.0486",,,,,,"TRG","Yes","Y","H","Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0217",  
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0.0486,"133","0.0596","0.0202","0.0486","133","35.3","50","150","30",,,,,,"\*"  
"B8L0076-MSD1","537","12/17/18","19:52","N","NA","DL1","1763-23-  
1","HEPTADEC AFLUOROACTANESULFONIC ACID SOLUTION ",  
0.445",,,,,,"TRG","Yes","Y","D,  
H","Y","0.0307","0.0504","0.101","UG\_L","UG\_L",,,,,,"0.375","0.0187","0.445","378",  
0.397",  
0.0187",  
0.445",  
378,"102","50","150","30",,,,,,"\*"  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","335-76-2","PERFLUORODECANOIC ACID  
(PFDA)","0.0207",,,,,,"TRG","Yes","Y",,"Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0202",  
0.0207",  
0.0207",  
0.0207",  
102",  
4.78",  
50",  
150",  
30",  
,,,,,  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","2355-31-  
9","MeFOSAA","0.0199",,,,,,"TRG","Yes","Y",,"Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0202",  
,"0.0199",  
98.3",  
0.0175",  
0.0202",  
0.0199",  
98.3",  
11.5",  
50",  
150",  
30",  
,,,,,  
"B8L0076-MSD1","537","12/15/18","01:43","N","NA","000","2991-50-  
6","EtFOSAA","0.0221",,,,,,"TRG","Yes","Y",,"Y","0.00307","0.00504","0.0101","UG\_L","UG\_L",,,,,,"0.0202"

, "0.0221", "109", "0.0208", "0.0202", "0.0221", "109", "4.69", "50", "150", "30", "", "", ""  
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(PFUNA)", "0.0199", "", "TRG", "Yes", "Y", "", "Y", "0.00307", "0.00504", "0.0101", "UG\_L", "UG\_L", "", "", "", "0.0202", "0.0  
199", "98.5", "0.0150", "0.0202", "0.0199", "98.5", "26.8", "50", "150", "30", "", "", ""  
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(PFDOA)", "0.0216", "", "TRG", "Yes", "Y", "", "Y", "0.00307", "0.00504", "0.0101", "UG\_L", "UG\_L", "", "", "", "0.0202", "0.0  
216", "107", "0.0193", "0.0202", "0.0216", "107", "10.1", "50", "150", "30", "", "", ""  
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8", "PFTTrDA", "0.0188", "", "TRG", "Yes", "Y", "", "Y", "0.00307", "0.00504", "0.0101", "UG\_L", "UG\_L", "", "", "", "0.0202", "  
0.0188", "93.0", "0.0192", "0.0202", "0.0188", "93.0", "3.17", "50", "150", "30", "", "", ""  
"B8L0076-MSD1", "537", "12/15/18", "01:43", "N", "NA", "000", "376-06-  
7", "PFTeDA", "0.0196", "", "TRG", "Yes", "Y", "", "Y", "0.00307", "0.00504", "0.0101", "UG\_L", "UG\_L", "", "", "", "0.0202", "  
0.0196", "97.3", "0.0181", "0.0202", "0.0196", "97.3", "7.13", "50", "150", "30", "", "", ""  
"B8L0076-MSD1", "537", "12/15/18", "01:43", "N", "NA", "000", "13C2-PFHxA", "13C2-  
PFHxA", "105", "", "IS", "Yes", "Y", "", "Y", "", "", "", "PCT\_REC", "", "", "", "100", "105", "105", "", "", "", "70", "130", "",  
", "", ""  
"B8L0076-MSD1", "537", "12/15/18", "01:43", "N", "NA", "000", "13C2-PFDA", "13C2-  
PFDA", "103", "", "IS", "Yes", "Y", "", "Y", "", "", "", "PCT\_REC", "", "", "", "100", "103", "103", "", "", "", "70", "130", "", "  
", "", ""  
"B8L0076-MSD1", "537", "12/15/18", "01:43", "N", "NA", "000", "d5-EtFOSAA", "d5-  
EtFOSAA", "82.9", "", "IS", "Yes", "Y", "", "Y", "", "", "", "PCT\_REC", "", "", "", "100", "82.9", "82.9", "", "", "", "70", "130  
", "", "", ""





## LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

AMEC Foster Wheeler, Inc.  
7376 SW Durham Road  
Portland, OR 97224  
Attn: Ms. Kimberly Shirooti  
[Kimberly.Shirooti@woodplc.com](mailto:Kimberly.Shirooti@woodplc.com)

May 23, 2019

SUBJECT: Former Chase Field, Data Validation

Dear Ms. Shirooti,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on May 23, 2019. Attachment 1 is a summary of the samples that were reviewed for analysis.

### LDC Project #45129:

<u>SDG #</u>	<u>Fraction</u>
1803982, 1804167 1900154, 1900478	Perfluorinated Alkyl Acids

The data validation was performed under Stage 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Initial Assessment of Perfluorinated Compounds or Per- and Polyfluoroalkyl Substances, Sites at Various Base Realignment and Closure Installations; June 2017
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1, 2017
- USEPA, National Functional Guidelines for Organic Superfund Methods Data Review, January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng  
[Pgeng@lab-data.com](mailto:Pgeng@lab-data.com)  
Project Manager/Senior Chemist

90/10 EDD

**LDC #45129 (Wood Environment & Infrastructure Solutions, OR / Chase Field, TO 008)**

KMEA PO000936

LDC	SDG#	DATE REC'D	(1) DATE DUE	PFAs (537M)		W		S		W		S		W		S		W		S		W		S		W		S		W		S		W		S		W		S	
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix:	Water/Soil																																								
A	1803982	05/23/19	ASAP	3	0																																				
B	1804167	05/23/19	ASAP	1	0																																				
C	1900154	05/23/19	ASAP	1	0																																				
D	1900478	05/23/19	ASAP	1	0																																				
Total	T/PG			6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B review). These sample counts do not include DL, RE, MS, MSD, or DUP's.

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Former Chase Field

**LDC Report Date:** May 23, 2019

**Parameters:** Perfluorinated Alkyl Acids

**Validation Level:** Stage 4

**Laboratory:** Vista Analytical Laboratory

**Sample Delivery Group (SDG):** 1803982

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
Big Field-DW-120618	1803982-01	Water	12/06/18
Behind the Base-DW-120618	1803982-03	Water	12/06/18
Shooting Range 1-DW-120618	1803982-05	Water	12/06/18
Shooting Range 1-DW-120618MS	1803982-05MS	Water	12/06/18
Shooting Range 1-DW-120618MSD	1803982-05MSD	Water	12/06/18

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Initial Assessment of Perfluorinated Compounds (PFCS) or Per- and Polyfluoroalkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537, Revision 1.1

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. LC/MS Instrument Performance Check**

Instrument performance was checked as applicable.

All ion abundance requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For each calibration standard, except the lowest point, all compounds were within 70-130% of their true value. For the lowest calibration point, all compounds were within 50-150% of their true value.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration and Instrument Sensitivity Check**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample Source Blank was identified as a source blank. No contaminants were found.

Sample Shooting Range 1-FB-120618 was identified as a field blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all drinking water samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were not within the QC limits for Shooting Range 1-DW-120618MS/MSD. No data were qualified since the parent sample results were greater than the spiked concentration

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
Shooting Range 1-DW-120618MS/MSD (Shooting Range 1-DW-120618)	PFOA	43 (≤30)	J (all detects)	A

## IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## X. Field Duplicates

Samples Shooting Range 1-DW-120618 and DUP-1 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	Shooting Range 1-DW-120618	DUP-1				
PFBS	34.2	32.0	-	2.2 (≤10.6)	-	-
PFHxA	213	194	9 (≤30)	-	-	-
PHHpA	87.2	76.0	14 (≤30)	-	-	-
PFHxS	362	299	19 (≤30)	-	-	-

Compound	Concentration (ng/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	Shooting Range 1-DW-120618	DUP-1				
PFOA	246	185	28 (≤30)	-	-	-
PFNA	21.7	15.7	-	6 (≤10.6)	-	-
PFOS	375	268	33 (≤30)	-	J (all detects)	A

## XI. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## XII. Compound Quantitation

All compound quantitations met validation criteria.

The laboratory indicated that PFAs are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## XIII. Target Compound Identifications

All target compound identifications met validation criteria.

## XIV. System Performance

The system performance was acceptable.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD RPD and field duplicate RPD, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.



**Former Chase Field  
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1803982**

Sample	Compound	Flag	A or P	Reason
Shooting Range 1-DW-120618	PFOA	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
Shooting Range 1-DW-120618 DUP-1	PFOS	J (all detects)	A	Field duplicates (RPD)

**Former Chase Field  
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 1803982**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG 1803982**

No Sample Data Qualified in this SDG

LDC #: 45129A96  
 SDG #: 1803982  
 Laboratory: Vista Analytical Laboratory

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 4

Date: 5/2/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluorinated Alkyl Acids (EPA Method 537M), Rev. 1.1 )

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	$RSD \leq 20\%$ , $\gamma^2$ $T_{MS} \leq 30/50\%$ (low), $KV \leq 30\%$
IV.	Continuing calibration /130	A	$CV/ISE \leq 30\%$
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SB=5, FB=A
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LC5
X.	Field duplicates	W	D = 3 + 6
XI.	Labeled Compounds	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	Big Field-DW-120618	1803982-01	Water	12/06/18
2	Behind the Base-DW-120618	1803982-03	Water	12/06/18
3	Shooting Range 1-DW-120618	1803982-05	Water	12/06/18
4	Shooting Range 1-FB-120618	1803982-06	Water	12/06/18
5	Source Blank	1803982-07	Water	12/06/18
6	DUP 1	1803982-08	Water	12/06/18
7	Shooting Range 1-DW-120618MS	1803982-05MS	Water	12/06/18
8	Shooting Range 1-DW-120618MSD	1803982-05MSD	Water	12/06/18
9				
10				

Notes:

BB10076 BK				

**Method:** LCMS (EPA Method 537 Modified )

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIa. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) ≤ 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	low ≤ 50% for drinking water
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIb. Initial Calibration Verification</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VIII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>IX. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## TARGET COMPOUND WORKSHEET

### METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			



LDC# 15129A96

**VALIDATION FINDINGS WORKSHEET**  
Field Duplicates

Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** PFCs (EPA Method 537, Rev.1.1))

Compound	Concentration (ng/L)		(<30) RPD	Difference	Limits	Qual
	3	6				
PFBS	34.2	32.0		2.2	≤10.6	
PFHxA	213	194	9			
PHHpA	87.2	76.0	14			
PFHxS	362	299	19			
PFOA	246	185	28			
PFNA	21.7	15.7		6	≤10.6	
PFOS	375	268	33			<u>[Signature]</u>

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/14/2018	PFOS	1	0.232	0.1988737
		2	0.464	0.3287097
		3	0.928	0.7292670
		4	1.860	1.2784472
		5	4.640	3.7459125
		6	9.240	7.2972533
		7	23.100	21.6975380
		8	46.200	43.6619180
		9	69.400	63.9538080
		10	92.500	80.7597070

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.89864913	0.899774
Correlation Coefficient	0.999427	0.99745
Coefficient of Determination (r <sup>2</sup> )	0.998854	



Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/14/2018	PFOA	1	0.250	0.2171360
		2	0.500	0.0506222
		3	1.000	0.9565940
		4	2.000	1.7298860
		5	5.000	4.5899330
		6	10.000	9.5954070
		7	25.000	21.7876640
		8	50.000	48.7801400
		9	75.000	69.3161600
		10	100.000	89.8638830

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.91588519	0.920346
Correlation Coefficient	0.999562	0.99867
Coefficient of Determination (r <sup>2</sup> )	0.999124	

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/16/2018	PFOA	1	0.250	0.2255790
		2	0.500	0.5356500
		3	1.000	1.0843630
		4	2.000	1.9421290
		5	5.000	5.2501000
		6	10.000	10.1869490
		7	25.000	26.3859800
		8	50.000	53.8977810
		9	75.000	74.5942910
		10	100.000	103.2234300

**Linear through the origin**

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	1.02778311	1.031910
Correlation Coefficient	0.999669	0.99911
Coefficient of Determination (r <sup>2</sup> )	0.999338	

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference =  $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$   
 $\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 $A_x$  = Area of compound,  $A_{is}$  = Area of associated internal standard  
 $C_x$  = Concentration of compound,  $C_{is}$  = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF	RRF	%D	%D
1	<del>182142-66</del>	12/15/18	PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)	10.0	9.63	9.63	3.7	3.7
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)	9.24	7.75	7.75	16.1	16.1
2	<del>182142-2</del>	12/17/18	PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)	2.00	2.18	2.18	9.1	9.1
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					
3			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					
4			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SSC - SC)/SA

Where: SSC = Spiked sample concentration  
 SA = Spike added

SC = Sample concentration

RPD = |MSC - MSC| \* 2 / (MSC + MSDC)

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 7/8

Compound	Spike Added (uS/L)		Sample Concentration (uS/L)	Spiked Sample Concentration (uS/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD (use %R)	
						Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	20.0	20.2	246	515	331	1350	1332	<del>120</del> 125	121	105	106
PFOS	18.4	18.7	315	397	445	123	120	378	374	102	103

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SC/SA)

Where: SSC = Spike concentration  
SA = Spike added

RPD = | LCSC - LCSDC | \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B860076-B81

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	20.0	NA	21.2	NA	106	106				
PFOS	18.5	↓	21.6	↓	117	117				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Former Chase Field  
**LDC Report Date:** May 23, 2019  
**Parameters:** Perfluorinated Alkyl Acids  
**Validation Level:** Stage 4  
**Laboratory:** Vista Analytical Laboratory  
**Sample Delivery Group (SDG):** 1804167

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PW2-122018-DW	1804167-01	Water	12/20/18

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Initial Assessment of Perfluorinated Compounds (PFCS) or Per- and Polyfluoroalkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537, Revision 1.1

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.



The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. LC/MS Instrument Performance Check**

Instrument performance was checked as applicable.

All ion abundance requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For each calibration standard, except the lowest point, all compounds were within 70-130% of their true value. For the lowest calibration point, all compounds were within 50-150% of their true value.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration and Instrument Sensitivity Check**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

No field blanks were identified in this SDG.

## **VII. Surrogates**

Surrogates were added to all drinking water samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VIII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Labeled Compounds**

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XII. Compound Quantitation**

All compound quantitations met validation criteria.

The laboratory indicated that PFAs are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## **XIII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIV. System Performance**

The system performance was acceptable.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Former Chase Field  
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1804167**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 1804167**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG 1804167**

No Sample Data Qualified in this SDG

LDC #: 45129B96  
 SDG #: 1804167  
 Laboratory: Vista Analytical Laboratory

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 4

Date: 4/23/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluorinated Alkyl Acids (EPA Method 537M, Rev. 1.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD ≤ 20%. T <sub>IN</sub> ≤ 34/50 (10W), 1.0V ≤ 398
IV.	Continuing calibration /1BC	A	CCV ≤ 30/3070
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LES/10
X.	Field duplicates	N	
XI.	Labeled Compounds	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PW2-122018-DW	1804167-01	Water	12/20/18
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

BB10193-PA				

**Method:** LCMS (EPA Method 537 Modified )

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIa. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq$ 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of $> 0.990$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) $\leq$ 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>&lt; 5% few labst std</i>
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>for drinking w</i>
<b>IIIb. Initial Calibration Verification</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>VIII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>IX. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



## TARGET COMPOUND WORKSHEET

### METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/30/2018	PFOA	1	0.250	0.2325030
		2	0.500	0.4798370
		3	1.000	0.9733980
		4	2.000	1.9247560
		5	5.000	5.2004250
		6	10.000	9.1517780
		7	25.000	24.118581
		8	50.000	53.590312
		9	75.000	81.475686
		10	100.000	109.05315

**Linear through the origin**

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	1.08160882	1.064930
Correlation Coefficient	0.999715	0.99788
Coefficient of Determination (r <sup>2</sup> )	0.999431	

LDC: 15129196

VALIDATION FINDINGS WORKSHEET  
Initial Calibration Calculation Verification

Page: 1 of 1  
Reviewwe: [Signature]  
2nd Reviewer: JV

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/30/2018	PFOS	1	0.232	0.0784112
		2	0.464	0.2796298
		3	0.928	0.9002042
		4	1.860	1.3489832
		5	4.640	3.3358268
		6	9.240	6.8112131
		7	23.10	18.209455
		8	46.20	40.303338
		9	69.40	56.077719
		10	92.50	78.913789

Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.83926116	0.830260
Correlation Coefficient	0.999501	0.99746
Coefficient of Determination (r <sup>2</sup> )	0.999003	

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 \* (ave. RRF - RRF)/ave. RRF  
 $RRF = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 A<sub>x</sub> = Area of compound,                      A<sub>is</sub> = Area of associated internal standard  
 C<sub>x</sub> = Concentration of compound,              C<sub>is</sub> = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF	RRF	%D	%D
1	181341-33	12/30/18	PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)	10.0	8.64	8.64	13.9136	13.6
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)	9.74	7.88	7.88	14.7	14.7
2			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					
3			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					
4			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SC/SA)

Where: SSC = Spike concentration  
 SA = Spike added

RPD = | LCSC - LCSDC | \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration    LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B810193-BS1-BS1

Compound	Spike Added ( <u>PL</u> )		Spike Concentration ( <u>PL</u> )		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	0.0400	0.0403	0.0412	101	101	103	103	2.15	2.22
PFOS	0.0370	0.0370	0.0335	0.0403	90.6	90.5	109	109	18.2	18.4

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**VALIDATION FINDINGS WORKSHEET**  
**Sample Calculation Verification**

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

- N N/A Were all reported results recalculated and verified for all level IV samples?
- N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_s)(RRF)(V_o)(V_i)(\%S)}$$

- $A_x$  = Area of the characteristic ion (EICP) for the compound to be measured
- $A_s$  = Area of the characteristic ion (EICP) for the specific internal standard
- $I_s$  = Amount of internal standard added in nanograms (ng)
- $V_o$  = Volume or weight of sample extract in milliliters (ml) or grams (g).
- $V_i$  = Volume of extract injected in microliters (ul)
- $V_1$  = Volume of the concentrated extract in microliters (ul)
- Df = Dilution Factor.
- %S = Percent solids, applicable to soil and solid matrices only.
- 2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. NO PFOA  
B8L0193-BS1

$$\text{Conc.} = \frac{693.21}{644915} \times 10.0 \times ( ) \times ( ) \times ( )$$

$$= 0.0403 \mu\text{g/L}$$

#	Sample ID	Compound	Reported Concentration ( <u>μg/L</u> )	Calculated Concentration ( )	Qualification
	<u>B8L0193-BS1</u>	<u>PFOA</u>	<u>0.0403</u>		

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Former Chase Field  
**LDC Report Date:** May 23, 2019  
**Parameters:** Perfluorinated Alkyl Acids  
**Validation Level:** Stage 4  
**Laboratory:** Vista Analytical Laboratory  
**Sample Delivery Group (SDG):** 1900154

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PW4-011719-DW	1900154-01	Water	01/17/19

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Initial Assessment of Perfluorinated Compounds (PFCS) or Per- and Polyfluoroalkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537, Revision 1.1

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.



The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. LC/MS Instrument Performance Check**

Instrument performance was checked as applicable.

All ion abundance requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For each calibration standard, except the lowest point, all compounds were within 70-130% of their true value. For the lowest calibration point, all compounds were within 50-150% of their true value.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration and Instrument Sensitivity Check**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

No field blanks were identified in this SDG.

## **VII. Surrogates**

Surrogates were added to all drinking water samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VIII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Labeled Compounds**

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XII. Compound Quantitation**

All compound quantitations met validation criteria.

The laboratory indicated that PFAs are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## **XIII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIV. System Performance**

The system performance was acceptable.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Former Chase Field  
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1900154**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG  
1900154**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG  
1900154**

No Sample Data Qualified in this SDG

LDC #: 45129C96  
 SDG #: 1900154  
 Laboratory: Vista Analytical Laboratory

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 4

Date: 3/3/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluorinated Alkyl Acids (EPA Method 537M, Rev. 1.1.)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	BSO ≤ 20%. TML ≤ 30/50%. 1CV ≤ 30%
IV.	Continuing calibration / 1SC	A	CCV/SC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	CS
X.	Field duplicates	N	
XI.	Labeled Compounds	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PW4-011719-DW	1900154-01	Water	01/17/19
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

BA0154-BK				

**Method:** LCMS (EPA Method 537 Modified )

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIa. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) ≤ 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) ≤ 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	≤ 50% for lowest std (drinking W)
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIb. Initial Calibration Verification</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration ≤ 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>VIII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>IX. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# TARGET COMPOUND WORKSHEET

## METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
1/25/2019	PFOA	1	0.250	0.2101130
		2	0.500	0.4714000
		3	1.000	0.8984130
		4	2.000	1.8618960
		5	5.000	4.4924390
		6	10.000	9.3954590
		7	25.000	24.368296
		8	50.000	47.758120
		9	75.000	73.077953
		10	100.000	94.537468

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.95618300	0.956545
Correlation Coefficient	0.999903	0.99969
Coefficient of Determination (r <sup>2</sup> )	0.999805	

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
1/25/2019	PFOS	1	0.232	0.1832208
		2	0.464	0.4657522
		3	0.928	0.8556761
		4	1.860	1.6506001
		5	4.640	4.6646023
		6	9.240	9.4894971
		7	23.10	23.772614
		8	46.20	48.721777
		9	69.40	72.647365
		10	92.50	100.994340

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	1.07089390	1.059870
Correlation Coefficient	0.999772	0.99909
Coefficient of Determination (r <sup>2</sup> )	0.999544	

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference =  $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$   
 $\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 $A_x$  = Area of compound,  $A_{is}$  = Area of associated internal standard  
 $C_x$  = Concentration of compound,  $C_{is}$  = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF	RRF	%D	%D
1	<del>1901312-33</del>	<u>1/25/19</u>	PFOA ( $^{13}\text{C}_2$ -PFOA)	<u>10.0</u>	<u>10.2</u>	<u>10.2</u>	<u>1.8</u>	<u>1.8</u>
			PFOS ( $^{13}\text{C}_8$ -PFOS)	<u>9.24</u>	<u>9.14</u>	<u>9.14</u>	<u>1.1</u>	<u>1.1</u>
2			PFOA ( $^{13}\text{C}_2$ -PFOA)					
			PFOS ( $^{13}\text{C}_8$ -PFOS)					
3			PFOA ( $^{13}\text{C}_2$ -PFOA)					
			PFOS ( $^{13}\text{C}_8$ -PFOS)					
4			PFOA ( $^{13}\text{C}_2$ -PFOA)					
			PFOS ( $^{13}\text{C}_8$ -PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SC/SA)

Where: SSC = Spike concentration  
 SA = Spike added

RPD = | LCSC - LCSDC | \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: PFA0154-PS1

Compound	Spike Added (µ/L)		Spike Concentration (µ/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0800	NA	0.0761	NA	95.8	95.9				
PFOS	0.0740	V	0.0666	V	90.0	90.0				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Former Chase Field  
**LDC Report Date:** May 23, 2019  
**Parameters:** Perfluorinated Alkyl Acids  
**Validation Level:** Stage 4  
**Laboratory:** Vista Analytical Laboratory  
**Sample Delivery Group (SDG):** 1900478

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
Charlie's Pasture-EW 031319	1900478-01	Water	03/13/19

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Initial Assessment of Perfluorinated Compounds (PFCS) or Per- and Polyfluoroalkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537, Revision 1.1

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.



The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. LC/MS Instrument Performance Check**

Instrument performance was checked as applicable.

All ion abundance requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For each calibration standard, except the lowest point, all compounds were within 70-130% of their true value. For the lowest calibration point, all compounds were within 50-150% of their true value.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration and Instrument Sensitivity Check**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample Field Blank was identified as a field blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all drinking water samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

Samples Charlie's Pasture-EW 031319 and Dup-1 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	Charlie's Pasture-EW 031319	Dup-1				
PFBS	0.0424	0.0444	-	0.002 ( $\leq 0.0101$ )	-	-
PFHxA	0.368	0.401	9 ( $\leq 30$ )	-	-	-
PHHpA	0.183	0.192	5 ( $\leq 30$ )	-	-	-
PFHxS	1.04	0.886	16 ( $\leq 30$ )	-	-	-
PFOA	0.807	0.827	2 ( $\leq 30$ )	-	-	-
PFNA	0.0280	0.0316	-	0.0036 ( $\leq 0.0101$ )	-	-
PFOS	1.52	1.38	10 ( $\leq 30$ )	-	-	-

## XI. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XII. Compound Quantitation**

All compound quantitations met validation criteria.

The laboratory indicated that PFAs are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## **XIII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIV. System Performance**

The system performance was acceptable.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Former Chase Field  
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1900478**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG  
1900478**

No Sample Data Qualified in this SDG

**Former Chase Field  
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG  
1900478**

No Sample Data Qualified in this SDG

LDC #: 45129D96  
 SDG #: 1900478  
 Laboratory: Vista Analytical Laboratory

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 4

Date: 5/2/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: JV

**METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537M)**

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A	RSD ≤ 20%. Y <sup>2</sup> TML = 39/50%. ICV = 38%
IV.	Continuing calibration / 1/30	A	CCV/15C ≤ 39%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB = 3
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCSD
X.	Field duplicates	W	B = 1 + 2
XI.	Labeled Compounds	A	LCSD
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB = Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	Charlie's Pasture-EW 031319	1900478-01	Water	03/13/19
2	Dup-1	1900478-02	Water	03/13/19
3	Field Blank	1900478-03	Water	03/13/19
4				
5				
6				
7				
8				
9				

Notes:

BR-0124-34				

**Method:** LCMS (EPA Method 537 Modified )

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIa. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq$ 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of $> 0.990$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) $\leq$ 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	$\leq 50\%$ for lowest std
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	for drinking W
<b>IIIb. Initial Calibration Verification</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VIII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>IX. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



## TARGET COMPOUND WORKSHEET

### METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC# 45129096

**VALIDATION FINDINGS WORKSHEET**  
Field Duplicates

Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: N6

**METHOD:** PFCs (EPA Method 537, Rev.1.1))

Compound	Concentration (ng/L)		(<30) RPD	Difference	Limits	Qual
	1	2				
PFBS	0.0424	0.0444		0.002	≤0.0101	
PFHxA	0.368	0.401	9			
PHHpA	0.183	0.192	5			
PFHxS	1.04	0.886	16			
PFOA	0.807	0.827	2			
PFNA	0.0280	0.0316		0.0036	≤0.0101	
PFOS	1.52	1.38	10			

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
3/28/2019	PFOA	1	0.250	0.3114790
		2	0.500	0.4559950
		3	1.000	0.9430580
		4	2.000	1.8980310
		5	5.000	4.8326870
		6	10.000	9.8324550
		7	25.000	23.5652720
		8	50.000	48.8485250
		9	75.000	72.3284030
		10	100.000	97.7633500

**Linear through the origin**

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.97244451	0.970341
Correlation Coefficient	0.999965	0.99978
Coefficient of Determination (r <sup>2</sup> )	0.999929	

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
3/28/2019	PFOS	1	0.232	0.2365741
		2	0.464	0.3770290
		3	0.928	0.6450009
		4	1.860	1.3866577
		5	4.640	3.7668348
		6	9.240	7.9072546
		7	23.10	18.761660
		8	46.20	40.878403
		9	69.40	62.960426
		10	92.50	80.724788

**Linear through the origin**

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.88238504	0.875608
Correlation Coefficient	0.999735	0.99859
Coefficient of Determination (r <sup>2</sup> )	0.999469	

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 \* (ave. RRF - RRF)/ave. RRF  
 RRF = (A<sub>x</sub>)(C<sub>is</sub>)/(A<sub>is</sub>)(C<sub>x</sub>)

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 A<sub>x</sub> = Area of compound,                      A<sub>is</sub> = Area of associated internal standard  
 C<sub>x</sub> = Concentration of compound,        C<sub>is</sub> = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF	RRF	%D	%D
1	<u>19032871-38</u>	<u>3/28/19</u>	PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)	<u>10.0</u>	<u>10.1</u>	<u>10.1</u>	<u>0.6</u>	<u>0.8</u>
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)	<u>9.24</u>	<u>8.71</u>	<u>8.69</u>	<u>5.8</u>	<u>5.9</u>
2	<u>19033071-2</u>	<u>3/30/19</u>	PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)	<u>2.00</u>	<u>2.16</u>	<u>2.16</u>	<u>8.0</u>	<u>7.8</u>
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)	<u>1.86</u>	<u>1.40</u>	<u>1.40</u>	<u>24.6</u>	<u>24.6</u>
3			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					
4			PFOA ( <sup>13</sup> C <sub>2</sub> -PFOA)					
			PFOS ( <sup>13</sup> C <sub>8</sub> -PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification**

**METHOD:** LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SC/SA)

Where: SSC = Spike concentration  
 SA = Spike added

RPD = | LCSC - LCSDC | \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration    LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B90/24-BS1/BSD1

Compound	Spike Added (NS/L)		Spike Concentration (NS/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0800	0.0800	0.0832	0.0766	104	104	95.8	95.8	818	826
PFOS	0.0740	0.0740	0.0701	0.0715	94.8	94.7	96.6	96.6	1.89	1.98

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET  
Sample Calculation Verification

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A  
Y N N/A

Were all reported results recalculated and verified for all level IV samples?  
Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

- A<sub>x</sub> = Area of the characteristic ion (EICP) for the compound to be measured
- A<sub>is</sub> = Area of the characteristic ion (EICP) for the specific internal standard
- I<sub>s</sub> = Amount of internal standard added in nanograms (ng)
- V<sub>o</sub> = Volume or weight of sample extract in milliliters (ml) or grams (g).
- V<sub>i</sub> = Volume of extract injected in microliters (ul)
- V<sub>t</sub> = Volume of the concentrated extract in microliters (ul)
- Df = Dilution Factor.
- %S = Percent solids, applicable to soil and solid matrices only.
- 2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFOS

$$\text{Conc.} = \frac{(5.78 \times 10^3)(28.7)}{(4.97)(2)(0.875608)} \times (0.250) \times (1000)$$

$$= 1.52 \mu\text{g/L}$$

#	Sample ID	Compound	Reported Concentration	Calculated Concentration	Qualification
	1	PFOS	1.52		

INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE	LOCATION_TYPE_DESC	COORD_X*	COORD_Y*	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
CHASE_FIELD_NAS	TBC	BEHIND_THE_BASE	DW	Domestic Well	-97.642501	28.342413	BEHIND THE BASE-DW-120618	WP	Drinking Water	6-Dec-18	Perfluoroalkyl Compounds	1803982
CHASE_FIELD_NAS	TBC	BIG_FIELD	DW	Domestic Well	-97.661031	28.344334	BIG FIELD-DW-120618	WP	Drinking Water	6-Dec-18	Perfluoroalkyl Compounds	1803982
CHASE_FIELD_NAS	TBC	SHOOTING_RANGE_1	DW	Domestic Well	-97.666696	28.357790	DUP-1	WG	Ground water	6-Dec-18	Perfluoroalkyl Compounds	1803982
CHASE_FIELD_NAS	TBC	SHOOTING_RANGE_1	DW	Domestic Well	-97.666696	28.357790	SHOOTING RANGE1-DW-120618	WP	Drinking Water	6-Dec-18	Perfluoroalkyl Compounds	1803982