



**Off-base Drinking Water Sample Results,  
Level 2 Laboratory Report, Level 4 Laboratory Report,  
Electronic Data Deliverable, Data Validation Report,  
and the Sample Location Figure, SDG 1701794**

*Marine Corps Outlying Landing Field Atlantic  
MCAS Cherry Point NC*

February 2019

December 06, 2017

**Vista Work Order No. 1701794**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

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. 1701794**

### **Case Narrative**

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

Eighteen 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 "CH-AT-1RW80-1117" and "CH-AT-2FB80-1117" were listed on the CoC, but not received. As requested, the analyses were cancelled.

#### **Analytical Notes:**

##### **EPA Method 537**

Sample "CH-AT-2RW03-1117" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

##### **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.

Two Laboratory Fortified Blanks (LFB) and Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 the LOQ. The LFB recoveries were within the method 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
1701794-01	CH-AT-2RW01-1117	27-Nov-17 11:20	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-02	CH-AT-2RW02-1117	27-Nov-17 11:47	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-03	CH-AT-2RW03-1117	27-Nov-17 12:13	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-04	CH-AT-2RW04-1117	27-Nov-17 13:13	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-05	CH-AT-2RW05-1117	27-Nov-17 13:39	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-06	CH-AT-2RW06-1117	27-Nov-17 14:34	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-07	CH-AT-2RW07-1117	27-Nov-17 14:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-08	CH-AT-2RW08-1117	27-Nov-17 15:31	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-09	CH-AT-2RW09-1117	27-Nov-17 16:00	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-10	CH-AT-1RW80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-11	CH-AT-2FB01-1117	27-Nov-17 11:20	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-12	CH-AT-2FB02-1117	27-Nov-17 11:47	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-13	CH-AT-2FB03-1117	27-Nov-17 12:13	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-14	CH-AT-2FB04-1117	27-Nov-17 13:13	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-15	CH-AT-2FB05-1117	27-Nov-17 13:39	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-16	CH-AT-2FB06-1117	27-Nov-17 14:34	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-17	CH-AT-2FB07-1117	27-Nov-17 14:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-18	CH-AT-2FB08-1117	27-Nov-17 15:31	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-19	CH-AT-2FB09-1117	27-Nov-17 16:00	29-Nov-17 09:37	HDPE Bottle, 250 mL
1701794-20	CH-AT-2FB80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL

Vista Project: 1701794

Client Project: CTO-08, MCOLF Atlantic PFAS DW Investigation

# Sample Inventory Report

<b>Vista Sample ID</b>	<b>Client Sample ID</b>	<b>Sampled</b>	<b>Received</b>	<b>Components/Containers</b>
1701794-20	CH-AT-2FB80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

<b>Sample ID: LRB</b>	<b>EPA Method 537</b>
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<b>Client Data</b>	<b>Laboratory Data</b>
Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation	Matrix: Drinking Water Lab Sample: B7L0006-BLK1 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
PFOA	ND	1.08	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
PFOS	ND	1.04	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

Sample ID: LFBD											EPA Method 537				
Name:	CH2M Hill				Lab Sample:	B7L0006-BS1/B7L0006-BSD1					Date Extracted:	02-Dec-17			
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation				QC Batch:	B7L0006					Column:	BEH C18			
Matrix:	Drinking Water				Samp Size:	0.250/0.250 L									
Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	18.8	17.7	106		19.8	17.7	112	5.30		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
PFOA	24.1	20.0	120		22.3	20.0	112	7.50		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
PFOS	18.6	18.5	100		19.6	18.5	106	5.47		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR		98.0				98.6			70-130		05-Dec-17 01:51	1	05-Dec-17 02:03	1

**Sample ID: CH-AT-2RW01-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-01	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:20	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOA	ND	1.08	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOS	ND	1.04	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	127	70 - 130			B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2RW02-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 HM 2 ill	Matrix:	Drinking Water	Lab Sample:	1701794-0H	Column:	BE2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	H7-Nov-17 11:47	Date Received:	H9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.477	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
PFOA	ND	1.16	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
PFOS	ND	1.1H	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SURR	97.3	70 - 130			B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2RW01-777L** **PMA h etdr5 31L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1u:1H	Date 3 eceived:	u9-Nov-17 09:H7		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.4H	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
PFOA	ND	1.07	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
PFOS	ND	1.0H	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
1HCu-PF2 xA	SU3 3	101	70 - 1H		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1	

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL- Lower control limit - Upper control limit      When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
 LOQ - Limit of Quantitation      3 esBts reported to the DL.      Only the linear isomer is reported for all other analytes.



**Sample ID: CH-AT-2RW04-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-04		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 13:13		Date Received:	29-Nov-17 09:37				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOA	1.25	1.13	5.22	10.4	J	B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOS	ND	1.09	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130			B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2RW01-777L** **PM h etdr5 13L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 13:39	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05438	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
PFOA	ND	157	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
PFOS	ND	153	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
13Cu-PF2 xA	SU. .	110	70 - 130		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1	

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL- Lower control limit - Upper control limit      When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers5  
 LOQ - Limit of qBantitation      . esBts reported to the DL5      Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW06-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 14:34	Date received:	u9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	0537	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
PFOA	ND	15H	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
PFOS	ND	153	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU . .	110	70 - 130			E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of Quantitation

LCL-UCL- Lower control limit - Upper control limit  
. esBts reported to the DL5

When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW01-7771** **EPA Method 531**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-07	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:RR	Date received:	29-Nov-17 09:.. 7		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.0	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
PFOA	ND	1.0R	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
PFOS	ND	1.01	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	114	70 - 1.0			B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
3 results reported to the DL5

When reported, PFHxA, PFOA and PFOS include both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW08-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-08		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R31		Date received:	29-Nov-17 09:37				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.54R2	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
PFOA	ND	1.510	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
PFOS	ND	1.506	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU. .	107	70 - 130			B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers5
	LOQ - Limit of quantitation	Results reported to the DL5	Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW09-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-09	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R:00		Date received:	29-Nov-17 09:.. 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	05440	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1
PFOA	ND	157	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1
PFOS	ND	157	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	99%	70 - 1.0		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
3 results reported to the DL5

When reported, PFHxA, PFOA and PFOS include both linear and branched isomers  
Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2FB01-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-11	Column:	BEH C18			
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:20	Date Received:	29-Nov-17 09:37					

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
PFOA	ND	1.04	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
PFOS	ND	1.00	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2FB02-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 HM 2 ill	Matrix:	Drinking Water	Lab Sample:	1701794-1H	Column:	BE2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	H7-Nov-17 11:47	Date Received:	H9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.4HH	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
PFOA	ND	1.03	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
PFOS	ND	0.991	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CHPF2 xA	SURR	94.7	70 - 130			B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.



**Sample ID: CH-AT-2FB01-777L** **PM h etdr5 31L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1u:1H	Date 3 eceived:	u9-Nov-17 09:H7		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.4H5	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
PFOA	ND	1.06	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
PFOS	ND	1.0u	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
1HCu-PF2 xA	SU3 3	108	70 - 1HD		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1	

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL- Lower control limit - Upper control limit      When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
 LOQ - Limit of Quantitation      3 esBts reported to the DL.      Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2FB04-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-14		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R:1R		Date 3 received:	29-Nov-17 09:R7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.415	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
PFOA	ND	1.01	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
PFOS	ND	0.97R	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1RC2-PFHxA	SU3 3	104	70 - 1R0			B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
3 results reported to the DL.

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

**Sample ID: CH-AT-2FB01-777L** **PM h etdr5 13L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 13:39	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	054u0	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
PFOA	ND	150u	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
PFOS	ND	05987	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
13Cu-PF2 xA	SU. .	106	70 - 130		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of qBantitation

LCL-UCL- Lower control limit - Bpper control limit  
. esBts reported to the DL5

When reported, PF2 xS, PFOA and PFOS inclBle both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2FB06-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 14:34	Date received:	u9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	05u7	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
PFOA	ND	1504	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
PFOS	ND	1500	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU . .	985	70 - 130			E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - Upper control limit	When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of Quantitation	esBs reported to the DL5	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2FB01-7771** **EPA Method 531**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-17		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:RR		Date received:	29-Nov-17 09: 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	054. R	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
PFOA	ND	136	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
PFOS	ND	132	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	986	70 - 1.0			B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of quantitation	3 results reported to the DL5	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2FB08-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-18	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R31		Date received:	29-Nov-17 09:37				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.526	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
PFOA	ND	1.04	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
PFOS	ND	1.50	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU. .	93.4	70 - 130			B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
. results reported to the DL5

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2FB09-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-19		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R:00		Date 3 received:	29-Nov-17 09:.. 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.522	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
PFOA	ND	1.0	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
PFOS	ND	0.991	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	98%	70 - 1.0			B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers <sup>5</sup>
	LOQ - Limit of quantitation	3 results reported to the DL <sup>5</sup>	Only the linear isomer is reported for all other analytes <sup>5</sup>

## **DATA QUALIFIERS & ABBREVIATIONS**

<b>B</b>	<b>This compound was also detected in the method blank.</b>
<b>D</b>	<b>Dilution</b>
<b>E</b>	<b>The associated compound concentration exceeded the calibration range of the instrument.</b>
<b>H</b>	<b>Recovery and/or RPD was outside laboratory acceptance limits.</b>
<b>I</b>	<b>Chemical Interference</b>
<b>J</b>	<b>The amount detected is below the Reporting Limit/LOQ.</b>
<b>M</b>	<b>Estimated Maximum Possible Concentration. (CA Region 2 projects only)</b>
<b>*</b>	<b>See Cover Letter</b>
<b>Conc.</b>	<b>Concentration</b>
<b>NA</b>	<b>Not applicable</b>
<b>ND</b>	<b>Not Detected</b>
<b>TEQ</b>	<b>Toxic Equivalency</b>
<b>U</b>	<b>Not Detected (specific projects only)</b>

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



## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
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

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
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

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	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
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 #: 1701794 Temp: 1.4 °C  
 Storage ID: WR-2 Storage Secured: Yes  No

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation PO#: 10006-7-106051 Sampler: C.Conover/M. Clay (name)

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

Invoice to: Name Tiffany Hill Company CH2M Address 1100 NE Circle Blvd Suite #300 City Corvallis State OR Ph# 541-768-3109 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) [Signature] Date 11/28/17 Time 1400 Received by (printed name and signature) B. Benedict Date 11/29/17 Time 1003

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: FEDEX  
 Tracking No: 8166 0254 8629  
 ATTN: Martha Maier

Add Analysis(es) Requested		Mod. EPA Method 537	EPA Method 537 (DW only)
Container(s)			
Quantity	Type	Matrix	Comments

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOS/PFOA	UCMR3 PFAS List 14	Full List of 26	Other: Please List Below	PFOS/PFOA/PFAS	UCMR3 PFAS List 14	PFAS List: 14	Comments
CH-AT-2RW01-1117	11/27/17	1120		2	P	DW					X			Trizma Preservative
CH-AT-2RW02-1117	11/27/17	1147		2	P	DW					X			Trizma Preservative
CH-AT-2RW03-1117	11/27/17	1213		2	P	DW					X			Trizma Preservative
CH-AT-2RW04-1117	11/27/17	1313		2	P	DW					X			Trizma Preservative
CH-AT-2RW05-1117	11/27/17	1339		2	P	DW					X			Trizma Preservative
CH-AT-2RW06-1117	11/27/17	1434		2	P	DW					X			Trizma Preservative
CH-AT-2RW07-1117	11/27/17	1455		2	P	DW					X			Trizma Preservative
CH-AT-2RW08-1117	11/27/17	1531		2	P	DW					X			Trizma Preservative
CH-AT-2RW09-1117	11/27/17	1600		2	P	DW					X			Trizma Preservative
CH-AT-2RW00-1117	11/27/17	1135		2	P	DW					X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT  
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill  
 Company: CH2M HILL Inc.  
 Address: 1100 NE Circle Blvd Suite 300  
 City: Corvallis State: OR Zip: 97330  
 Phone: 541-768-3109 Fax: \_\_\_\_\_  
 Email: Tiffany.Hill@ch2m.com

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:





CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 1701794 Temp 1.4 °C  
 Storage ID WR-2 Storage Secured Yes  No

Project ID CTO-08, MCOLF Atlantic PFAS DW Investigation PO# 10006-7-106051 Sampler C.Conover/M. Clay  
 (name)

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

Invoice to: Name Tiffany Hill Company CH2M Address 1100 NE Circle Blvd Suite #300 City Corvallis State OR Ph# 541-768-3109 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) David Hill Date 11/28/17 Time 1400 Received by (printed name and signature) Benedict Botsch Date 11/29/17 Time 1803  
 Relinquished by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 ATTN: Martha Maier  
 Method of Shipment: FEDEX  
 Tracking No.: 8106 0254 8629

Add Analysis(es) Requested		Mod EPA Method 537	EPA Method 537 (DW only)
Container(s)			
Quantity	Type	Matrix	Comments

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 28	Other: Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-2FB01-1117	11/27/17	1120		2	P	DW						X			Trizma Preservative
CH-AT-2FB02-1117	11/27/17	1147		2	P	DW						X			Trizma Preservative
CH-AT-2FB03-1117	11/27/17	1213		2	P	DW						X			Trizma Preservative
CH-AT-2FB04-1117	11/27/17	1313		2	P	DW						X			Trizma Preservative
CH-AT-2FB05-1117	11/27/17	1339		2	P	DW						X			Trizma Preservative
CH-AT-2FB06-1117	11/27/17	1434		2	P	DW						X			Trizma Preservative
CH-AT-2FB07-1117	11/27/17	1455		2	P	DW						X			Trizma Preservative
CH-AT-2FB08-1117	11/27/17	1531		2	P	DW						X			Trizma Preservative
CH-AT-2FB09-1117	11/27/17	1600		2	P	DW						X			Trizma Preservative
CH-AT-2FBSD-1117	11/27/17	1135		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT  
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill  
 Company: CH2M HILL Inc.  
 Address: 1100 NE Circle Blvd Suite 300  
 City: Corvallis State: OR Zip: 97330  
 Phone: 541-768-3109 Fax: \_\_\_\_\_  
 Email: Tiffany.Hill@ch2m.com

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

Vista Work Order #: 1701794 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 11/29/17 0937	<b>Initials:</b> BAB	<b>Location:</b> WR-2 <b>Shelf/Rack:</b> NA				
<b>Logged In:</b>	<b>Date/Time:</b> 11/29/17 1110	<b>Initials:</b> BAB IA	<b>Location:</b> WR-2 <b>Shelf/Rack:</b> 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> 1.3 (uncorrected)	<b>Time:</b> 0958		<b>Thermometer ID:</b> IR-1				
<b>Temp °C:</b> 1.4 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						

		YES	NO	NA		
Adequate Sample Volume Received?	A/B	✓				
Holding Time Acceptable?		✓				
Shipping Container(s) Intact?		✓				
Shipping Custody Seals Intact?		✓				
Shipping Documentation Present?		✓				
Airbill <u>3 of 3</u>	Trk # <u>8538 7408 0441</u>	✓				
Sample Container Intact?		✓				
Sample Custody Seals Intact?				✓		
Chain of Custody / Sample Documentation Present?		✓				
COC Anomaly/Sample Acceptance Form completed?		✓				
If Chlorinated or Drinking Water Samples, Acceptable Preservation?		✓				
Preservation Documented:	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="checkbox"/> Trizma	<input type="checkbox"/> None	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	

Comments: Sample Label ID  
CH-AT-1RW80-1117 MS A/B received not listed on  
 ↓ SD ↓ COC



# Chain of Custody Anomaly/Sample Acceptance Form



Client: CH2M Hill  
 Contact: Tiffany Hill  
 Email: tiffany.hill@ch2m.com  
 Phone: (541) 768-3109

Workorder Number: 11/27/171701794  
 Date Received: 29-Nov-17 09:37  
 Documented by/date: B.Benedict 11/29/2017

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier  
 mmaier@vista-analytical.com  
 916-673-1520

**The following information or item is needed to proceed with analysis:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Complete Chain-of-Custody | <input type="checkbox"/> Preservative                       | <input type="checkbox"/> Collector's Name |
| <input type="checkbox"/> Test Method Requested     | <input type="checkbox"/> Sample Identification              | <input type="checkbox"/> Sample Type      |
| <input type="checkbox"/> Analyte List Requested    | <input type="checkbox"/> Sample Collection Date and/or Time | <input type="checkbox"/> Sample Location  |
| <input type="checkbox"/> Other:                    |   |   |

**The following anomalies were noted. Authorization is needed to proceed with analysis.**

- |  |   |     |    |
|--|---|-----|----|
| <input type="checkbox"/> Temperature outside < 6°C Range | Samples Affected: _____                             |     |    |
| Temperature _____°C                                      | Ice Present?  | Yes | No |
| <input type="checkbox"/> Sample ID Discrepancy           | <input type="checkbox"/> Insufficient Sample Size   |     |    |
| <input type="checkbox"/> Sample Holding Time Missed      | <input type="checkbox"/> Sample Container(s) Broken |     |    |
| <input type="checkbox"/> Custody Seals Broken            | <input type="checkbox"/> Incorrect Container Type   |     |    |

**Comments:** COC ID: CH-AT-1RW80-1117 Date/Time: 11/27/17 1135 Sample Label: CH-AT-1RW80-1117 MS (MS/MSD not listed on the COC)  
 CH-AT-1RW80-1117 SD  
 CH-AT-1FB80-1117 11/27/17 1135 (Sample not received)

These two samples are listed on WO# 1701793. The COC for WO# 1701794 these sample's ID's are handwritten.

**Client Authorization**

Proceed with Analysis:  YES  NO Signature and Date: Benedict 11/30/17

Client Comments/Instructions: Per client phone call on 11/29/17, "CH-AT-2RW80-1117" (-10) will be reported under WO# 1701793 (-03). "CH-AT-2FB-80-1117" does not exist. Sample has been cancelled.

December 06, 2017

**Vista Work Order No. 1701794**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

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. 1701794**

### **Case Narrative**

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

Eighteen 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 "CH-AT-1RW80-1117" and "CH-AT-2FB80-1117" were listed on the CoC, but not received. As requested, the analyses were cancelled.

#### **Analytical Notes:**

##### **EPA Method 537**

Sample "CH-AT-2RW03-1117" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

##### **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.

Two Laboratory Fortified Blanks (LFB) and Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 the LOQ. The LFB recoveries were within the method 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
1701794-01	CH-AT-2RW01-1117	27-Nov-17 11:20	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-02	CH-AT-2RW02-1117	27-Nov-17 11:47	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-03	CH-AT-2RW03-1117	27-Nov-17 12:13	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-04	CH-AT-2RW04-1117	27-Nov-17 13:13	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-05	CH-AT-2RW05-1117	27-Nov-17 13:39	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-06	CH-AT-2RW06-1117	27-Nov-17 14:34	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-07	CH-AT-2RW07-1117	27-Nov-17 14:55	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-08	CH-AT-2RW08-1117	27-Nov-17 15:31	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-09	CH-AT-2RW09-1117	27-Nov-17 16:00	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-10	CH-AT-1RW80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-11	CH-AT-2FB01-1117	27-Nov-17 11:20	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-12	CH-AT-2FB02-1117	27-Nov-17 11:47	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-13	CH-AT-2FB03-1117	27-Nov-17 12:13	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-14	CH-AT-2FB04-1117	27-Nov-17 13:13	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-15	CH-AT-2FB05-1117	27-Nov-17 13:39	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-16	CH-AT-2FB06-1117	27-Nov-17 14:34	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-17	CH-AT-2FB07-1117	27-Nov-17 14:55	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-18	CH-AT-2FB08-1117	27-Nov-17 15:31	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-19	CH-AT-2FB09-1117	27-Nov-17 16:00	29-Nov-17 09:37	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701794-20	CH-AT-2FB80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL

Vista Project: 1701794

Client Project: CTO-08, MCOLF Atlantic PFAS DW Investigation

# Sample Inventory Report

<b>Vista Sample ID</b>	<b>Client Sample ID</b>	<b>Sampled</b>	<b>Received</b>	<b>Components/Containers</b>
1701794-20	CH-AT-2FB80-1117	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

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

<b>Client Data</b>					<b>Laboratory Data</b>						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	B7L0006-BLK1	Column:	BEH C18			
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation										

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
PFOA	ND	1.08	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
PFOS	ND	1.04	5.00	10.0		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:28	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: LFBD**

**EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0006-BS1/B7L0006-BSD1	Date Extracted:	02-Dec-17
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	QC Batch:	B7L0006	Column:	BEH C18
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L		

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	18.8	17.7	106		19.8	17.7	112	5.30		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
PFOA	24.1	20.0	120		22.3	20.0	112	7.50		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
PFOS	18.6	18.5	100		19.6	18.5	106	5.47		70-130	30	05-Dec-17 01:51	1	05-Dec-17 02:03	1
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR		98.0				98.6			70-130		05-Dec-17 01:51	1	05-Dec-17 02:03	1

**Sample ID: CH-AT-2RW01-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-01	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:20	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOA	ND	1.08	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOS	ND	1.04	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	127	70 - 130		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.



**Sample ID: CH-AT-2RW02-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 HM 2 ill	Matrix:	Drinking Water	Lab Sample:	1701794-0H	Column:	BE2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	H7-Nov-17 11:47	Date Received:	H9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.477	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
PFOA	ND	1.16	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
PFOS	ND	1.1H	5.38	10.8		B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SURR	97.3	70 - 130			B7L0006	0HDec-17	0.HBHL	05-Dec-17 0H53	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2RW01-777L** **PMA h etdr5 31L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1u:1H	Date 3 eceived:	u9-Nov-17 09:H7		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.4H	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
PFOA	ND	1.07	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
PFOS	ND	1.0H	4.95	9.91		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
1HCu-PF2 xA	SU3 3	101	70 - 1H		E7L0006	0u-Dec-17	0.u5u L	05-Dec-17 0H06	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of qBantitation

LCL-UCL- Lower control limit - Bpper control limit  
3 esBts reported to the DL.

When reported, PF2 xS, PFOA and PFOS inclBle both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2RW04-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-04	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 13:13	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOA	1.25	1.13	5.22	10.4	J	B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOS	ND	1.09	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130			B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

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

**Sample ID: CH-AT-2RW01-777L** **PM h etdr5 13L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 13:39	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05438	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
PFOA	ND	157	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
PFOS	ND	153	49H	989		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
13Cu-PF2 xA	SU. .	110	70 - 130		E7L0006	0u-Dec-17	05uFB L	0HDec-17 03:30	1	

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL- Lower control limit - Upper control limit      When reported, PF2 xS, PFOA and PFOS inclBle both linear and branched isomers5  
 LOQ - Limit of qBantitation      . esBts reported to the DL5      Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW06-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-0H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 14:34	Date received:	u9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	0537	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
PFOA	ND	150H	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
PFOS	ND	1503	493	98H		E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU . .	110	70 - 130			E7L000H	0u-Dec-17	05u64 L	06-Dec-17 03:43	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - Upper control limit	When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of Quantitation	Results reported to the DL5	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2RW01-7771** **EPA Method 531**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-07	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:RR	Date received:	29-Nov-17 09:.. 7		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.0	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
PFOA	ND	1.0R	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
PFOS	ND	1.01	486	951		B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	114	70 - 1.0			B7L0006	02-Dec-17	0.2R7 L	0R-Dec-17 0:..RR	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of quantitation	3 results reported to the DL	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2RW08-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-08	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:	27-Nov-17 1R31	Date received:	29-Nov-17 09:37				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.54R2	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
PFOA	ND	1.510	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
PFOS	ND	1.506	RS10	10.52		B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU. .	107	70 - 130			B7L0006	02-Dec-17	0.524RL	0R-Dec-17 04:08	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
. results reported to the DL5

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2RW09-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-09		Column: BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R:00		Date received:	29-Nov-17 09:.. 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	05440	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1
PFOA	ND	157	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1
PFOS	ND	157	497	994		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	99%	70 - 1.0		B7L000R	02-Dec-17	0261 L	06-Dec-17 04:20	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of quantitation	3 results reported to the DL5	Only the linear isomer is reported for all other analytes



**Sample ID: CH-AT-2FB01-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-11	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:20	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
PFOA	ND	1.04	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
PFOS	ND	1.00	4.82	9.54		B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0005	02-Dec-17	0.269 L	06-Dec-17 04:33	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
	LOQ - Limit of quantitation	Results reported to the DL.	Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2FB02-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 HM 2 ill	Matrix:	Drinking Water	Lab Sample:	1701794-1H	Column:	BE2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	H7-Nov-17 11:47	Date Received:	H9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.4HH	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
PFOA	ND	1.03	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
PFOS	ND	0.991	4.75	9.63		B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CHPF2 xA	SURR	94.7	70 - 130			B7L0005	0HDec-17	0.H5HL	06-Dec-17 04:46	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2FB01-777L** **PM h etdr5 31L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1u:1H	Date 3 eceived:	u9-Nov-17 09:H7		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.4H5	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
PFOA	ND	1.06	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
PFOS	ND	1.0u	4.91	9.8H		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
1HCu-PF2 xA	SU3 3	108	70 - 1HD		E7L0006	0u-Dec-17	0.u54 L	05-Dec-17 04:57	1	

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL- Lower control limit - Upper control limit      When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers.  
 LOQ - Limit of Quantitation      3 esBts reported to the DL.      Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-2FB04-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-14	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:	27-Nov-17 1R:1R	Date 3 received:	29-Nov-17 09:R7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.415	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
PFOA	ND	1.01	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
PFOS	ND	0.97R	4.68	9.R6		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1RC2-PFHxA	SU3 3	104	70 - 1R0			B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
3 results reported to the DL.

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

**Sample ID: CH-AT-2FB01-777L** **PM h etdr5 13L**

<b>Client Data</b>				<b>baoryatryEData</b>			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 13:39	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	054u0	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
PFOA	ND	150u	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
PFOS	ND	05987	4574	9549		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1
b aoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxyacte5	Samp Size	AnalEze5	Dilutirn	
13Cu-PF2 xA	SU. .	106	70 - 130		E7L0006	0u-Dec-17	05u63 L	0HDec-17 11:u3	1	

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of qBantitation

LCL-UCL- Lower control limit - Bpper control limit  
. esBts reported to the DL5

When reported, PF2 xS, PFOA and PFOS inclBle both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5

**Sample ID: CH-AT-2FB06-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	C2 uM 2 ill	Matrix:	DrinRing Water	Lab Sample:	1701794-1H	ColBnn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 14:34	Date . eceived:	u9-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	05u7	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
PFOA	ND	1504	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
PFOS	ND	1500	48u	95B		E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU. .	985	70 - 130			E7L000H	0u-Dec-17	05uHD L	06-Dec-17 11:3H	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - Upper control limit	When reported, PF2 xS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of Quantitation	esBts reported to the DL5	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2FB01-7771** **EPA Method 531**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-17		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:RR		Date received:	29-Nov-17 09: 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	054. R	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
PFOA	ND	136	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
PFOS	ND	152	491	981		B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	986	70 - 1.0			B7L0006	02-Dec-17	02RR L	0R-Dec-17 11:48	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
	LOQ - Limit of quantitation	3 results reported to the DL5	Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-2FB08-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-18	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 1R31	Date received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.526	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
PFOA	ND	1.04	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
PFOS	ND	1.50	481	951		B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU. .	93.4	70 - 130			B7L0006	02-Dec-17	0.260 L	0R-Dec-17 12:00	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
. results reported to the DL5

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers5  
Only the linear isomer is reported for all other analytes5



**Sample ID: CH-AT-2FB09-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701794-19	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:	27-Nov-17 1R:00	Date 3 received:	29-Nov-17 09:.. 7				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.522	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
PFOA	ND	1.0	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
PFOS	ND	0.991	457R	95.		B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1. C2-PFHxA	SU33	98%	70 - 1.0			B7L000R	02-Dec-17	0.2R2 L	06-Dec-17 12:1.	1

DL - Detection Limit	LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers <sup>5</sup>
	LOQ - Limit of quantitation	3 results reported to the DL <sup>5</sup>	Only the linear isomer is reported for all other analytes <sup>5</sup>

## DATA QUALIFIERS & ABBREVIATIONS

<b>B</b>	<b>This compound was also detected in the method blank.</b>
<b>D</b>	<b>Dilution</b>
<b>E</b>	<b>The associated compound concentration exceeded the calibration range of the instrument.</b>
<b>H</b>	<b>Recovery and/or RPD was outside laboratory acceptance limits.</b>
<b>I</b>	<b>Chemical Interference</b>
<b>J</b>	<b>The amount detected is below the Reporting Limit/LOQ.</b>
<b>M</b>	<b>Estimated Maximum Possible Concentration. (CA Region 2 projects only)</b>
<b>*</b>	<b>See Cover Letter</b>
<b>Conc.</b>	<b>Concentration</b>
<b>NA</b>	<b>Not applicable</b>
<b>ND</b>	<b>Not Detected</b>
<b>TEQ</b>	<b>Toxic Equivalency</b>
<b>U</b>	<b>Not Detected (specific projects only)</b>

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

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
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

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
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

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	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
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 #: 1701794 Temp: 1.4 °C  
 Storage ID: WR-2 Storage Secured: Yes  No

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation PO#: 10006-7-106051 Sampler: C.Conover/M. Clay (name)

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

Invoice to: Name Tiffany Hill Company CH2M Address 1100 NE Circle Blvd Suite #300 City Corvallis State OR Ph# 541-768-3109 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) [Signature] Date 11/28/17 Time 1400 Received by (printed name and signature) B. Benedict Date 11/29/17 Time 1003

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: FEDEX  
 Tracking No: 8166 0254 8629  
 ATTN: Martha Maier

Quantity	Type	Matrix	PFOS/PFOA	UCMR3 PFAS List 18	337 List: 14	Full List of 26	Other: Please List Below	PFOS/PFOA/PFAS	UCMR3 PFAS List 18	PFAS List: 14	EPA Method 537 (DW only)	Mod. EPA Method 537	Comments
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Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOS/PFOA	UCMR3 PFAS List 18	337 List: 14	Full List of 26	Other: Please List Below	PFOS/PFOA/PFAS	UCMR3 PFAS List 18	PFAS List: 14	EPA Method 537 (DW only)	Mod. EPA Method 537	Comments
CH-AT-2RW01-1117	11/27/17	1120		2	P	DW						X					Trizma Preservative
CH-AT-2RW02-1117	11/27/17	1147		2	P	DW						X					Trizma Preservative
CH-AT-2RW03-1117	11/27/17	1213		2	P	DW						X					Trizma Preservative
CH-AT-2RW04-1117	11/27/17	1313		2	P	DW						X					Trizma Preservative
CH-AT-2RW05-1117	11/27/17	1339		2	P	DW						X					Trizma Preservative
CH-AT-2RW06-1117	11/27/17	1434		2	P	DW						X					Trizma Preservative
CH-AT-2RW07-1117	11/27/17	1455		2	P	DW						X					Trizma Preservative
CH-AT-2RW08-1117	11/27/17	1531		2	P	DW						X					Trizma Preservative
CH-AT-2RW09-1117	11/27/17	1600		2	P	DW						X					Trizma Preservative
CH-AT-2RW00-1117	11/27/17	1135		2	P	DW						X					Trizma Preservative

Special Instructions/Comments: 7 DAY TAT  
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill  
 Company: CH2M HILL Inc.  
 Address: 1100 NE Circle Blvd Suite 300  
 City: Corvallis State: OR Zip: 97330  
 Phone: 541-768-3109 Fax: \_\_\_\_\_  
 Email: Tiffany.Hill@ch2m.com

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: \_\_\_\_\_





CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 1701794 Temp 1.4 °C  
 Storage ID WR-2 Storage Secured Yes  No

Project ID CTO-08, MCOLF Atlantic PFAS DW Investigation PO# 10006-7-106051 Sampler C.Conover/M. Clay  
 (name)

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

Invoice to: Name Tiffany Hill Company CH2M Address 1100 NE Circle Blvd Suite #300 City Corvallis State OR Ph# 541-768-3109 Fax# \_\_\_\_\_

Relinquished by (printed name and signature) David Hill Date 11/28/17 Time 1400 Received by (printed name and signature) Benedict Botsch Date 11/29/17 Time 1803  
 Relinquished by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 ATTN: Martha Maier  
 Method of Shipment: FEDEX  
 Tracking No.: 8106 0254 8629

Add Analysis(es) Requested		Mod EPA Method 537	EPA Method 537 (DW only)
Container(s)			
Quantity	Type	Matrix	Comments

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 28	Other: Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-2FB01-1117	11/27/17	1120		2	P	DW						X			Trizma Preservative
CH-AT-2FB02-1117	11/27/17	1147		2	P	DW						X			Trizma Preservative
CH-AT-2FB03-1117	11/27/17	1213		2	P	DW						X			Trizma Preservative
CH-AT-2FB04-1117	11/27/17	1313		2	P	DW						X			Trizma Preservative
CH-AT-2FB05-1117	11/27/17	1339		2	P	DW						X			Trizma Preservative
CH-AT-2FB06-1117	11/27/17	1434		2	P	DW						X			Trizma Preservative
CH-AT-2FB07-1117	11/27/17	1455		2	P	DW						X			Trizma Preservative
CH-AT-2FB08-1117	11/27/17	1531		2	P	DW						X			Trizma Preservative
CH-AT-2FB09-1117	11/27/17	1600		2	P	DW						X			Trizma Preservative
CH-AT-2FB10-1117	11/27/17	1135		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT  
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill  
 Company: CH2M HILL Inc.  
 Address: 1100 NE Circle Blvd Suite 300  
 City: Corvallis State: OR Zip: 97330  
 Phone: 541-768-3109 Fax: \_\_\_\_\_  
 Email: Tiffany.Hill@ch2m.com

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**

Vista Work Order #: 1701794 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 11/29/17 0937	<b>Initials:</b> BAB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> NA
<b>Logged In:</b>	<b>Date/Time:</b> 11/29/17 1110	<b>Initials:</b> BAB IA	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> 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> 1.3 (uncorrected)	<b>Time:</b> 0958		<b>Thermometer ID:</b> IR-1
<b>Temp °C:</b> 1.4 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill 3 of 3 Trk # 8538 7408 0441	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?	✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	<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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain
	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	

Comments: Sample Label ID  
CH-AT-1RW80-1117 MS A/B received not listed on  
 ↓ SD ↓ COC



# Chain of Custody Anomaly/Sample Acceptance Form



Client: CH2M Hill  
 Contact: Tiffany Hill  
 Email: tiffany.hill@ch2m.com  
 Phone: (541) 768-3109

Workorder Number: 11/27/171701794  
 Date Received: 29-Nov-17 09:37  
 Documented by/date: B.Benedict 11/29/2017

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier  
 mmaier@vista-analytical.com  
 916-673-1520

**The following information or item is needed to proceed with analysis:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Complete Chain-of-Custody | <input type="checkbox"/> Preservative                       | <input type="checkbox"/> Collector's Name |
| <input type="checkbox"/> Test Method Requested     | <input type="checkbox"/> Sample Identification              | <input type="checkbox"/> Sample Type      |
| <input type="checkbox"/> Analyte List Requested    | <input type="checkbox"/> Sample Collection Date and/or Time | <input type="checkbox"/> Sample Location  |
| <input type="checkbox"/> Other:                    |   |   |

**The following anomalies were noted. Authorization is needed to proceed with analysis.**

- |  |   |     |           |
|--|---|-----|-----------|
| <input type="checkbox"/> Temperature outside < 6°C Range | Samples Affected: _____                             |     |           |
| Temperature _____°C                                      | Ice Present?  | Yes | No Melted |
| <input type="checkbox"/> Sample ID Discrepancy           | <input type="checkbox"/> Insufficient Sample Size   |     |           |
| <input type="checkbox"/> Sample Holding Time Missed      | <input type="checkbox"/> Sample Container(s) Broken |     |           |
| <input type="checkbox"/> Custody Seals Broken            | <input type="checkbox"/> Incorrect Container Type   |     |           |

**Comments:** COC ID: CH-AT-1RW80-1117 Date/Time: 11/27/17 1135 Sample Label: CH-AT-1RW80-1117 MS (MS/MSD not listed on the COC)  
 CH-AT-1RW80-1117 SD  
 CH-AT-1FB80-1117 11/27/17 1135 (Sample not received)

These two samples are listed on WO# 1701793. The COC for WO# 1701794 these sample's ID's are handwritten.

**Client Authorization**

Proceed with Analysis:  YES  NO Signature and Date: *Benedict* 11/30/17

Client Comments/Instructions: Per client phone call on 11/29/17, "CH-AT-2RW80-1117" (-10) will be reported under WO# 1701793 (-03). "CH-AT-2FB-80-1117" does not exist.

Sample has been cancelled.

## **EXTRACTION INFORMATION**

Process Sheet  
 Workorder: 1701794



Prep Expiration: 2017-Dec-11  
 Client: CH2M Hill

Workorder Due: 06-Dec-17 00:00  
 TAT: 7

Method: 537 PFAS DW DoD Unmodified  
 Matrix: Drinking Water

Prep Batch: B7L0006

Version: PFOA, PFOS, & PFBS  
 DoD: DoD QSM 5.1

Prep Data Entered: 12/4/17 DM  
 Date and Initials

Initial Sequence: \_\_\_\_\_

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701794-01	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW01-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW02-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW03-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW04-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-05		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW05-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-06		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW06-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-07		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW07-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-08		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW08-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-09		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2RW09-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB01-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-12		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB02-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-13		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB03-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-14		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB04-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-15		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB05-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-16		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB06-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-17		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB07-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-18		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB08-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701794-19		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-2FB09-1117		WR-2 E-4	HDPE Bottle, 250 mL

LCS/LCSD

Pre-Prep Check Out: HB 12/1/17

Prep Check Out: KC 12/2/17

Prep Reconciled Initials/Date: HB 12/1/17

Pre-Prep Check In: HB 12/1/17

Prep Check In: NA

Spike Reconciled Initials/Date: KC 12/2/17

VialBoxID: \_\_\_\_\_

Batch: B7L0006

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701794-01	0.2502 ✓	NA	NA	1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-02	0.23231 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-03	0.25228 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-04	0.23949 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-05	0.25274 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-06	0.25357 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-07	0.25736 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-08	0.24522 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-09	0.25148 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-11	0.25942 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-12	0.26238 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-13	0.25437 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-14	0.26715 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-15	0.26347 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-16	0.25956 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-17	0.2548 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-18	0.26007 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
1701794-19	0.26233 ✓			1000	01-Dec-17 14:32	GM			Drinking Water	537 PFAS DW DoD Unmoc
B7L0006-BLK1	0.25			1000	01-Dec-17 14:32	GM				QC
B7L0006-BS1	0.25			1000	01-Dec-17 14:32	GM	17I2602	10		QC
B7L0006-BSD1	0.25			1000	01-Dec-17 14:32	GM	17I2602	10		QC

*am 12/4/17*



PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0006

Chemist: KBF  
 Prep Date/Time: ~~01-Dec-17~~ 14:52  
 2 15:15

Prepared using: LCMS - SPE Extraction-LCMS

		BalanceID: <u>HRMS-8</u>								
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"/>	B7L0006-BLK1	NA	NA	(0.250) ✓	<u>KBF</u> <u>KL</u> 12/2/17	<u>KL</u> 12/2/17	<u>HL</u> <u>GER</u> 12-4-17			
<input type="checkbox"/>	B7L0006-BS1	↓	↓	(0.250) ✓	↓	↓	↓			
<input type="checkbox"/>	B7L0006-BSD1	↓	↓	(0.250) ✓						
<input type="checkbox"/>	1701794-01	278.02	27.82	0.25020 ✓						
<input type="checkbox"/>	1701794-02	260.53	28.22	0.23231 ✓						
<input checked="" type="checkbox"/>	1701794-03	280.43	28.15	0.25228 ✓						
<input type="checkbox"/>	1701794-04	267.70	28.21	0.23949 ✓						
<input type="checkbox"/>	1701794-05	280.98	28.24	0.25274 ✓						
<input type="checkbox"/>	1701794-06	281.39	27.82	0.25357 ✓						
<input type="checkbox"/>	1701794-07	285.55	28.19	0.25736 ✓						
<input type="checkbox"/>	1701794-08	273.38	28.16	0.24522 ✓						
<input type="checkbox"/>	1701794-09	279.78	28.30	0.25148 ✓						
<input type="checkbox"/>	1701794-11	286.37	26.95	0.25942 ✓						
<input type="checkbox"/>	1701794-12	290.00	27.62	0.26238 ✓						
<input type="checkbox"/>	1701794-13	282.08	27.71	0.25437 ✓						
<input type="checkbox"/>	1701794-14	294.81	27.66	0.26715 ✓						

SS/IS: <u>17K3043, 10µL (V4)</u> NS: <u>17I2602, 20µL (V2)</u> IS/RS: <u>17K3042, 10µL (V4)</u>	SPE Chem: <u>Strata-X 33µm 500mg to ml</u> Lot#: <u>517-001946/517-001561</u> Ele SOLV: <u>MCOH</u> Lot#: <u>JB054409</u> Final Volume(s) <u>1ml</u>	Notes:
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Comments: Assume 1 g = 1 mL

Cen = Centrifuged  
 Work Order 1701794

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0006

Chemist: KBF  
 Prep Date/Time: 12-Dec-17 14:32  
15:15

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HZMS-8

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"/>	1701794-15	291.27	27.80	0.26347 ✓	KBF KC 12/2/17	KC 12/2/17	KC GRB 12-4-17
<input type="checkbox"/>	1701794-16	289.05	28.49	0.25956 ✓	↓	↓	↓
<input type="checkbox"/>	1701794-17	282.67	27.87	0.25480 ✓			
<input type="checkbox"/>	1701794-18	287.08	27.61	0.26007 ✓			
<input type="checkbox"/>	1701794-19	289.44	27.11	0.26233 ✓			

SS/IS: <u>17K3043, 10µL (V4)</u> NS: <u>17I2602, 20µLV2</u> IS/RS: <u>17K3042, 10µL (V4)</u>	SPE Chem: <u>Strata-X 33µm 500mg/6mL</u> Lot#: <u>S17-001946</u> Ele SOLV: <u>MeOH</u> Lot#: <u>JB054409</u> Final Volume(s) <u>1ml</u>	Notes:
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Comments: Assume 1 g = 1 mL  
 Cen = Centrifuged  
 Work Order 1701794

**SAMPLE DATA –EPA METHOD 537**

Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-7.qld

Last Altered: Tuesday, December 05, 2017 10:06:28 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:06:55 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_7, Date: 05-Dec-2017, Time: 02:28:44, ID: B7L0006-BLK1 LRB 0.25, Description: LRB

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.86e3		0.2500	3.05				
2	2 PFOA	413 > 368.7	7.95e1	9.20e3		0.2500	4.35	4.34	0.0865	0.432	
3	3 PFOS	499 > 79.9	7.83e0	9.86e3		0.2500	4.75	4.75	0.0228	0.0758	
4	4 13C2-PFHxA	315 > 269.8	4.15e3	9.20e3	0.439	0.2500	3.41	3.40	4.51	41.1	102.7
5	5 13C2-PFDA	515.1 > 469.9	3.99e3	9.20e3	0.542	0.2500	4.98	4.99	4.33	32.0	79.9
6	6 13C2-PFOA	414.9 > 369.7	9.20e3	9.20e3	1.000	0.2500	4.41	4.35	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.86e3	9.86e3	1.000	0.2500	4.81	4.75	28.7	115	100.0



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-7.qld

Last Altered: Tuesday, December 05, 2017 10:06:28 Pacific Standard Time

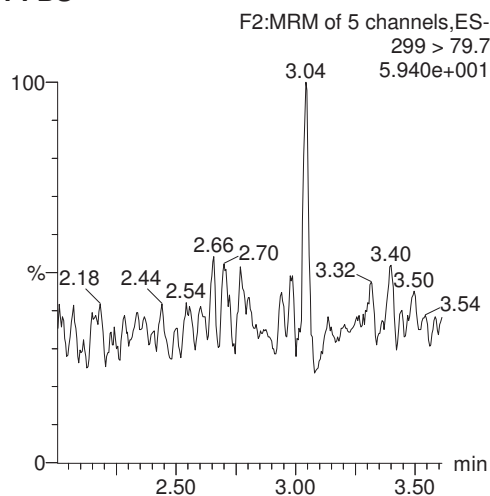
Printed: Tuesday, December 05, 2017 10:06:55 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

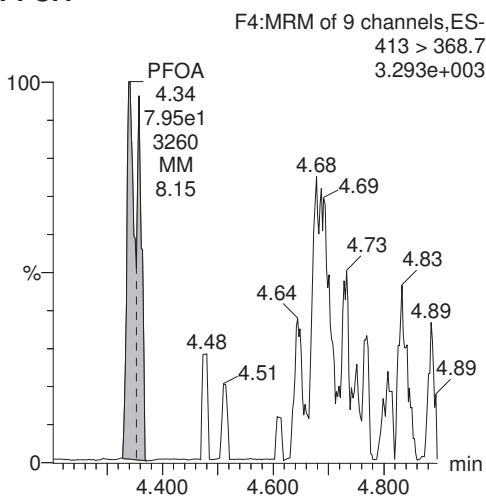
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Name: 171204G2\_7, Date: 05-Dec-2017, Time: 02:28:44, ID: B7L0006-BLK1 LRB 0.25, Description: LRB

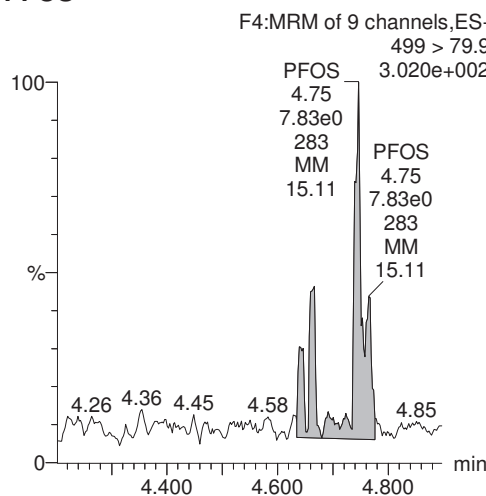
**PFBS**



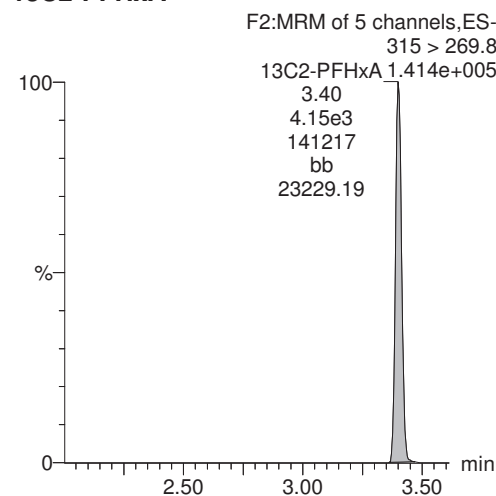
**PFOA**



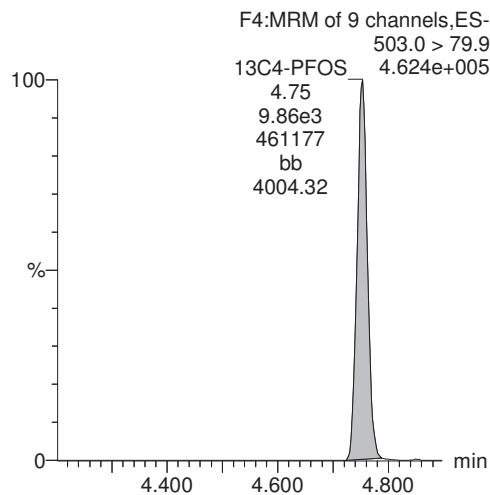
**PFOS**



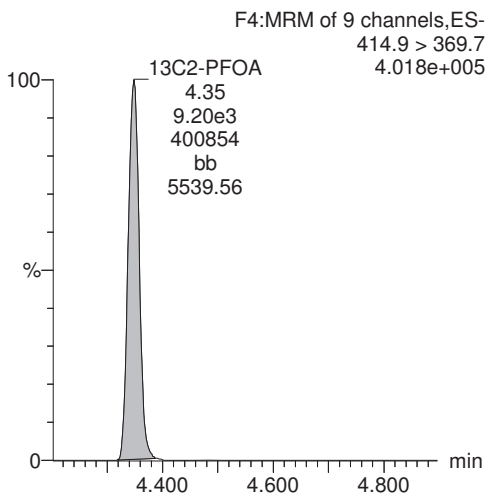
**13C2-PFHxA**



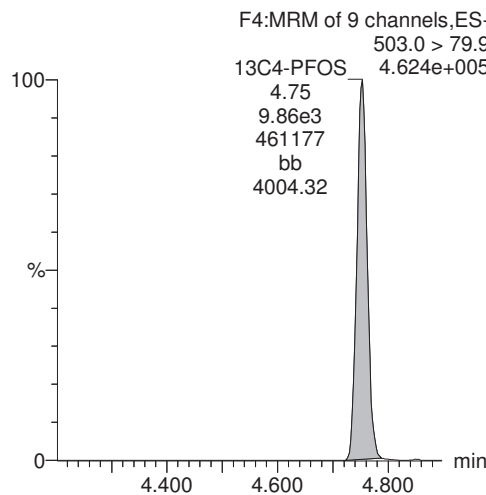
**13C4-PFOS**



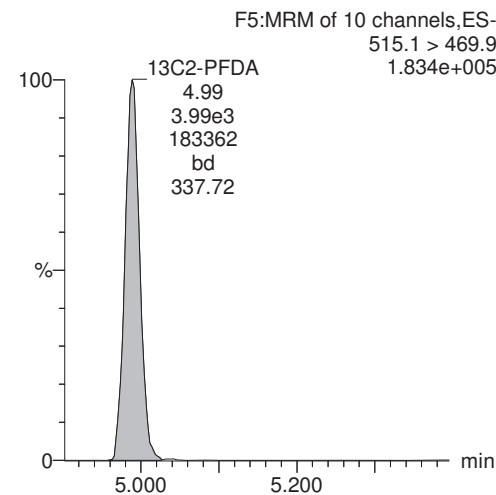
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-4.qld

Last Altered: Tuesday, December 05, 2017 09:44:12 Pacific Standard Time

Printed: Tuesday, December 05, 2017 09:59:08 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_4, Date: 05-Dec-2017, Time: 01:51:24, ID: B7L0006-BS1 LFB 0.25, Description: LFB

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.19e3	9.00e3		0.2500	3.05	3.03	3.81	18.8	106.5
2	2 PFOA	413 > 368.7	4.25e3	8.83e3		0.2500	4.35	4.35	4.82	24.1	120.3
3	3 PFOS	499 > 79.9	1.75e3	9.00e3		0.2500	4.75	4.75	5.59	18.6	100.4
4	4 13C2-PFHxA	315 > 269.8	3.80e3	8.83e3	0.439	0.2500	3.41	3.40	4.31	39.2	98.0
5	5 13C2-PFDA	515.1 > 469.9	4.07e3	8.83e3	0.542	0.2500	4.98	4.99	4.61	34.0	85.0
6	6 13C2-PFOA	414.9 > 369.7	8.83e3	8.83e3	1.000	0.2500	4.41	4.35	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.00e3	9.00e3	1.000	0.2500	4.81	4.75	28.7	115	100.0

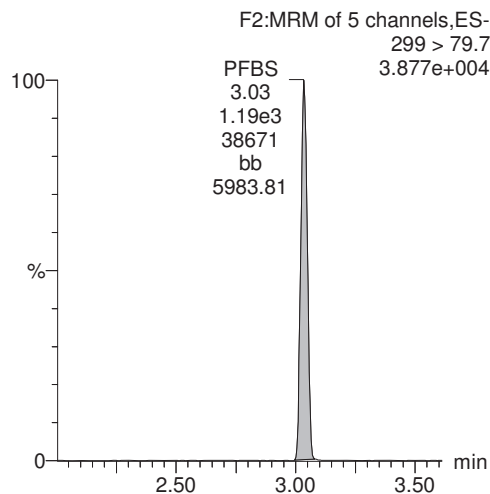
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Printed: Tuesday, December 05, 2017 09:59:08 Pacific Standard Time

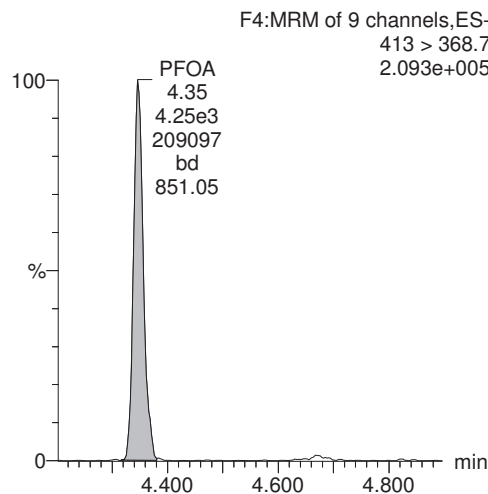
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_4, Date: 05-Dec-2017, Time: 01:51:24, ID: B7L0006-BS1 LFB 0.25, Description: LFB

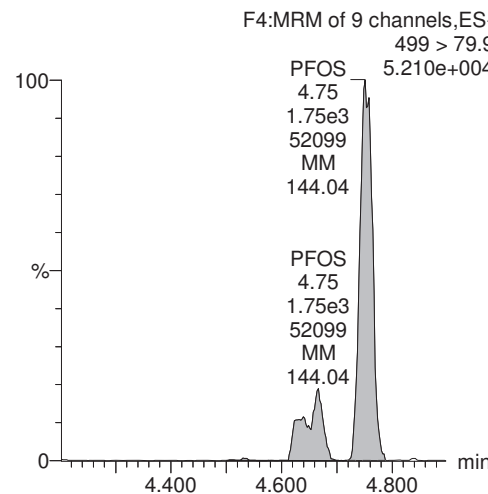
**PFBS**



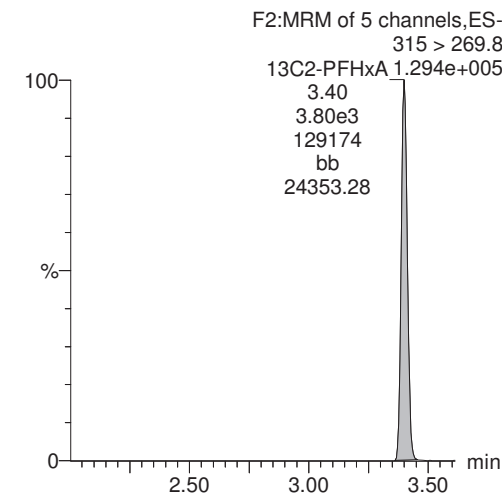
**PFOA**



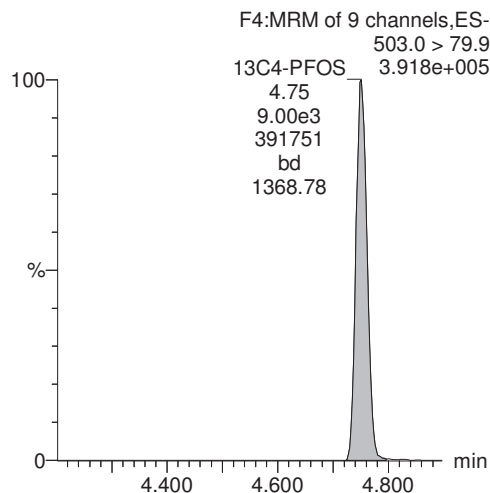
**PFOS**



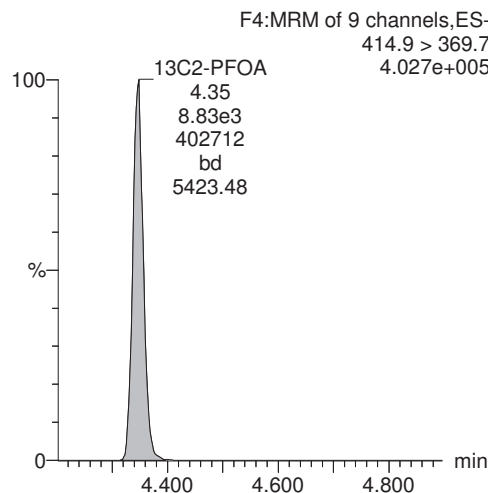
**13C2-PFHxA**



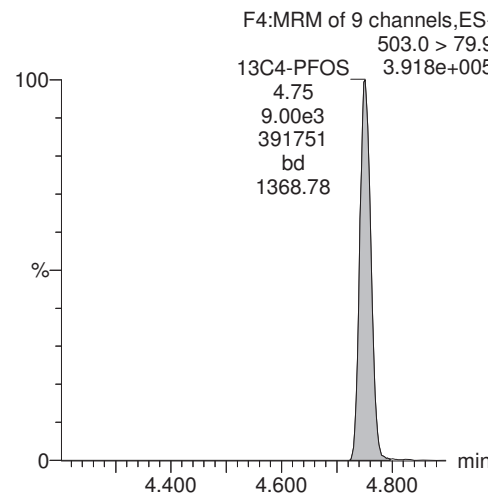
**13C4-PFOS**



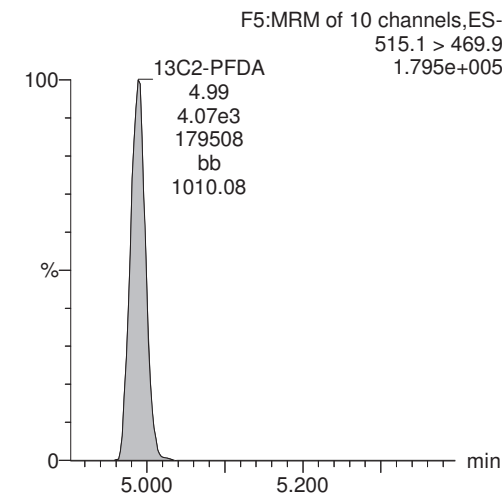
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-5.qld

Last Altered: Tuesday, December 05, 2017 10:00:56 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:02:59 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_5, Date: 05-Dec-2017, Time: 02:03:49, ID: B7L0006-BSD1 LFBD 0.25, Description: LFBD

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.36e3	9.70e3		0.2500	3.05	3.04	4.01	19.8	112.3
2	2 PFOA	413 > 368.7	4.10e3	9.18e3		0.2500	4.35	4.35	4.47	22.3	111.6
3	3 PFOS	499 > 79.9	1.99e3	9.70e3		0.2500	4.75	4.75	5.90	19.6	106.0
4	4 13C2-PFHxA	315 > 269.8	3.98e3	9.18e3	0.439	0.2500	3.41	3.40	4.33	39.4	98.6
5	5 13C2-PFDA	515.1 > 469.9	4.02e3	9.18e3	0.542	0.2500	4.98	4.99	4.38	32.3	80.7
6	6 13C2-PFOA	414.9 > 369.7	9.18e3	9.18e3	1.000	0.2500	4.41	4.35	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.70e3	9.70e3	1.000	0.2500	4.81	4.75	28.7	115	100.0

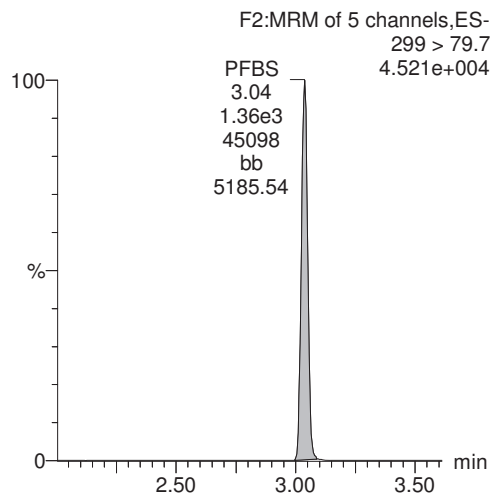
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Last Altered: Tuesday, December 05, 2017 10:00:56 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:02:59 Pacific Standard Time

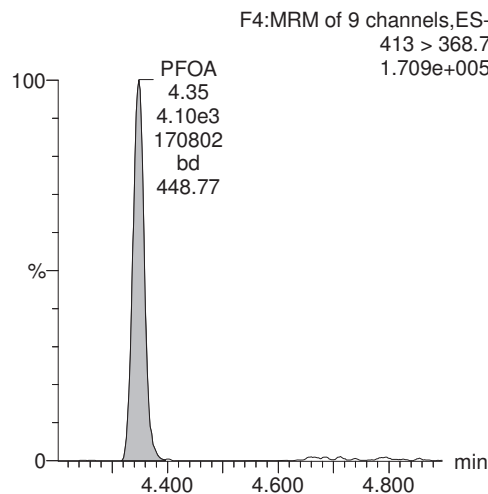
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_5, Date: 05-Dec-2017, Time: 02:03:49, ID: B7L0006-BSD1 LFBD 0.25, Description: LFBD

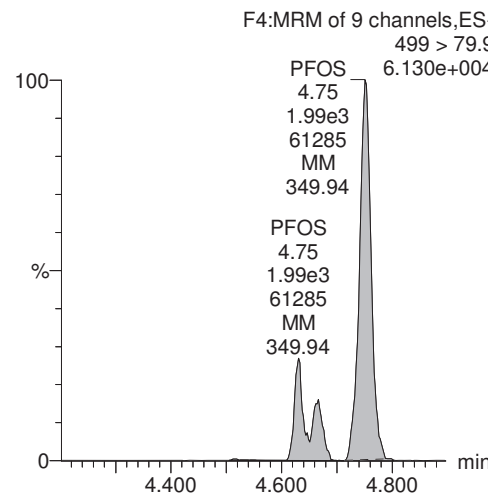
**PFBS**



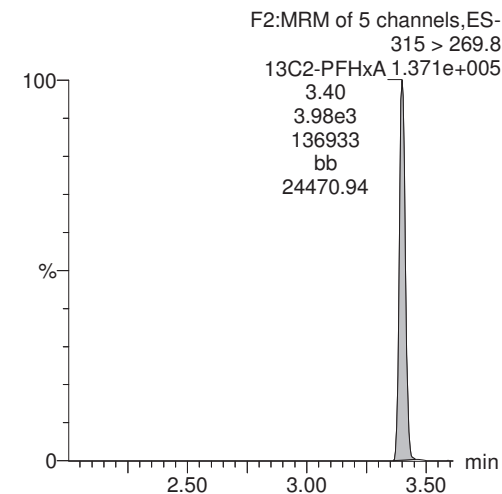
**PFOA**



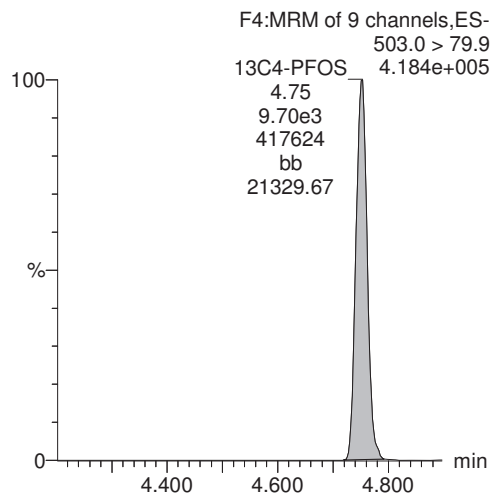
**PFOS**



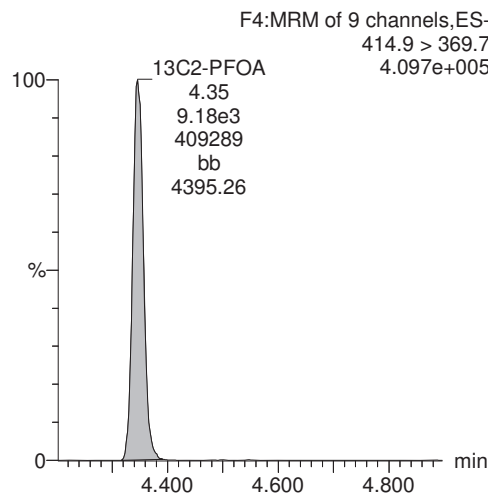
**13C2-PFHxA**



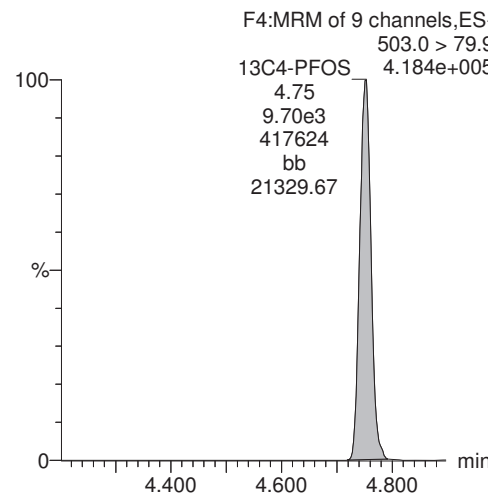
**13C4-PFOS**



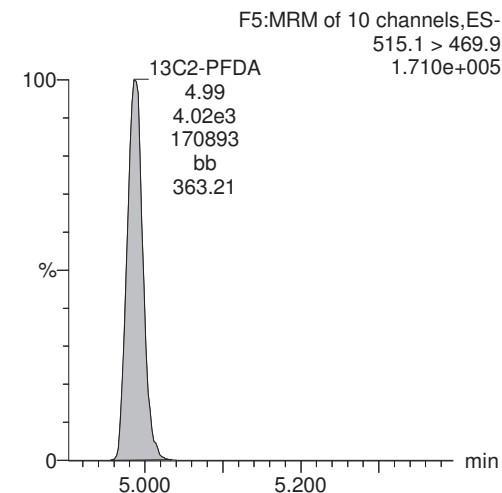
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-8.qld

Last Altered: Tuesday, December 05, 2017 10:08:10 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:08:52 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_8, Date: 05-Dec-2017, Time: 02:41:10, ID: 1701794-01 CH-AT-2RW01-1117 0.2502, Description: CH-AT-2RW01-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.59e3		0.2502	3.05				
2	2 PFOA	413 > 368.7	5.87e1	7.87e3		0.2502	4.34	4.35	0.0745	0.372	
3	3 PFOS	499 > 79.9	3.43e0	8.59e3		0.2502	4.75	4.75	0.0115	0.0380	
4	4 13C2-PFHxA	315 > 269.8	4.39e3	7.87e3	0.439	0.2502	3.40	3.40	5.57	50.7	126.9
5	5 13C2-PFDA	515.1 > 469.9	4.06e3	7.87e3	0.542	0.2502	4.97	4.99	5.16	38.0	95.2
6	6 13C2-PFOA	414.9 > 369.7	7.87e3	7.87e3	1.000	0.2502	4.41	4.34	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.59e3	8.59e3	1.000	0.2502	4.81	4.75	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-8.qld

Last Altered: Tuesday, December 05, 2017 10:08:10 Pacific Standard Time

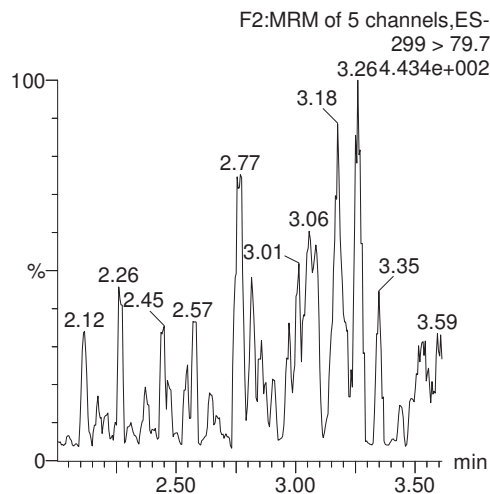
Printed: Tuesday, December 05, 2017 10:08:52 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

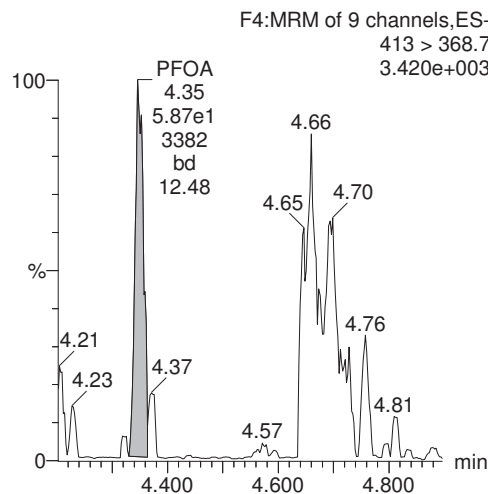
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_8, Date: 05-Dec-2017, Time: 02:41:10, ID: 1701794-01 CH-AT-2RW01-1117 0.2502, Description: CH-AT-2RW01-1117

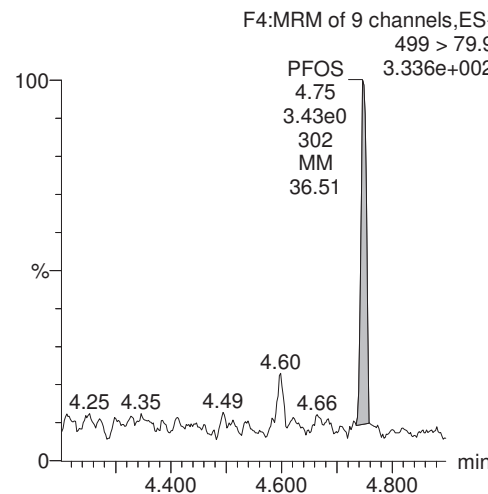
PFBS



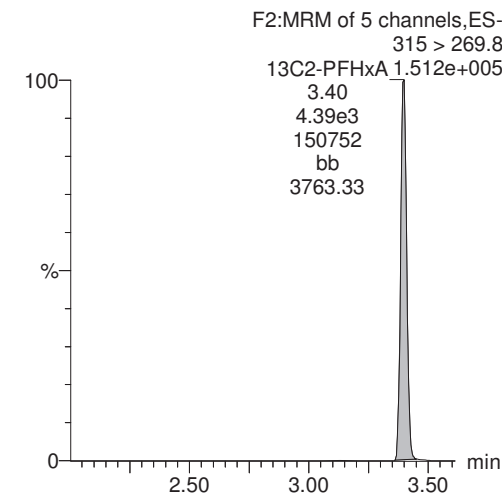
PFOA



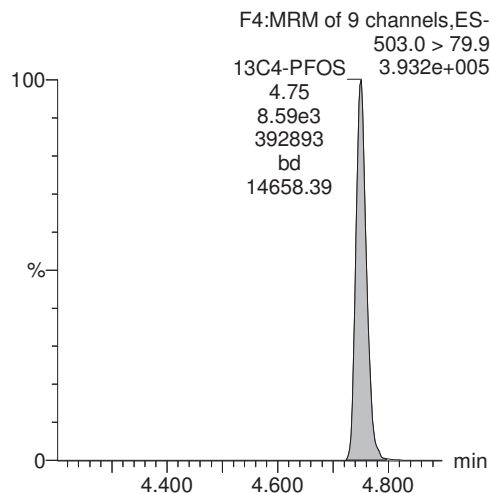
PFOS



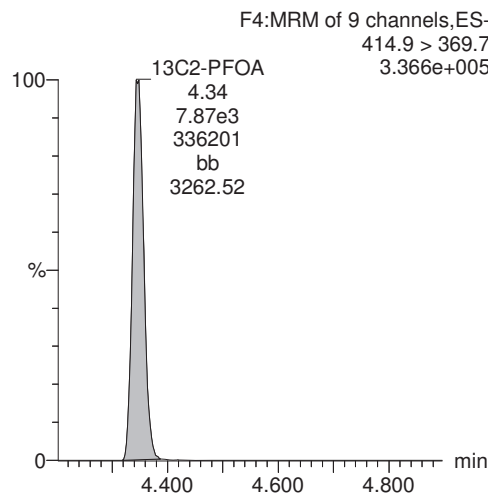
13C2-PFHxA



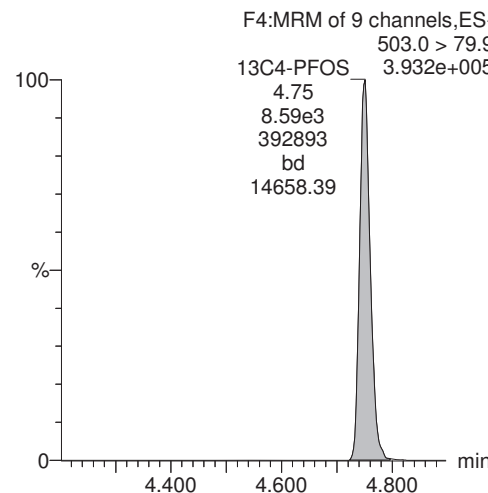
13C4-PFOS



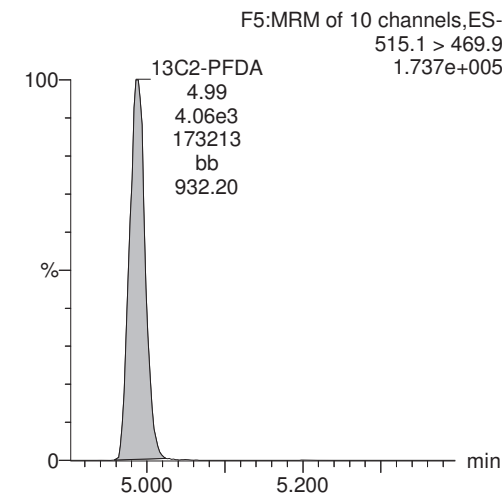
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-9.qld

Last Altered: Tuesday, December 05, 2017 10:12:59 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:13:17 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_9, Date: 05-Dec-2017, Time: 02:53:39, ID: 1701794-02 CH-AT-2RW02-1117 0.23231, Description: CH-AT-2RW02-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.00e4		0.2323	3.05				
2	2 PFOA	413 > 368.7	5.99e1	9.83e3		0.2323	4.35	4.34	0.0609	0.328	
3	3 PFOS	499 > 79.9	3.35e0	1.00e4		0.2323	4.75	4.76	0.00958	0.0343	
4	4 13C2-PFHxA	315 > 269.8	4.20e3	9.83e3	0.439	0.2323	3.41	3.40	4.27	41.9	97.3
5	5 13C2-PFDA	515.1 > 469.9	3.73e3	9.83e3	0.542	0.2323	4.98	4.99	3.80	30.1	70.0
6	6 13C2-PFOA	414.9 > 369.7	9.83e3	9.83e3	1.000	0.2323	4.41	4.35	10.0	43.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.00e4	1.00e4	1.000	0.2323	4.81	4.75	28.7	124	100.0



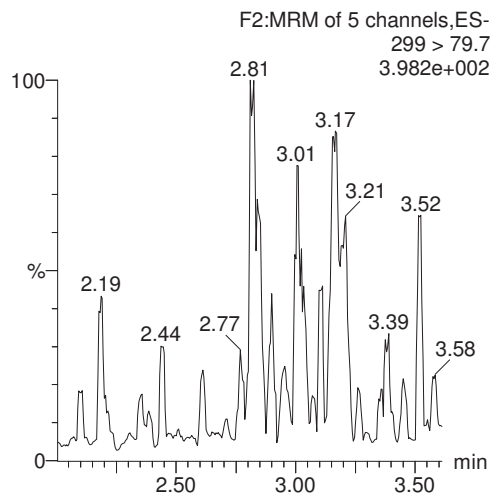
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Last Altered: Tuesday, December 05, 2017 10:12:59 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:13:17 Pacific Standard Time

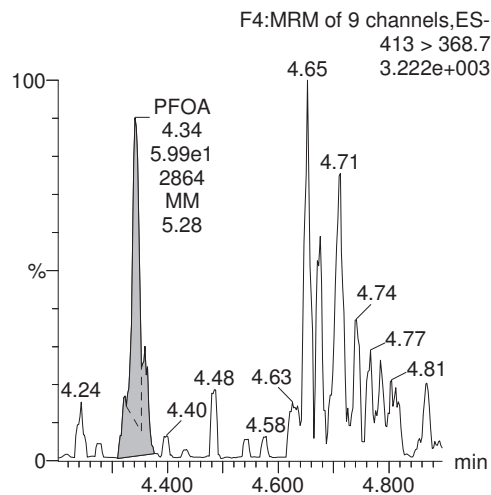
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_9, Date: 05-Dec-2017, Time: 02:53:39, ID: 1701794-02 CH-AT-2RW02-1117 0.23231, Description: CH-AT-2RW02-1117

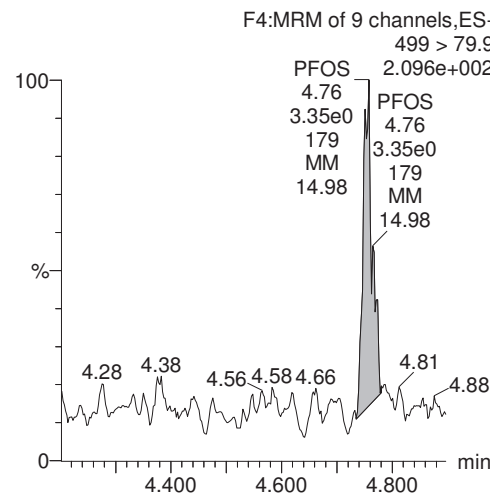
**PFBS**



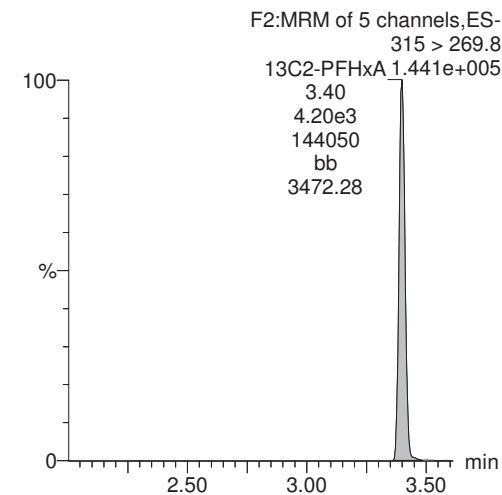
**PFOA**



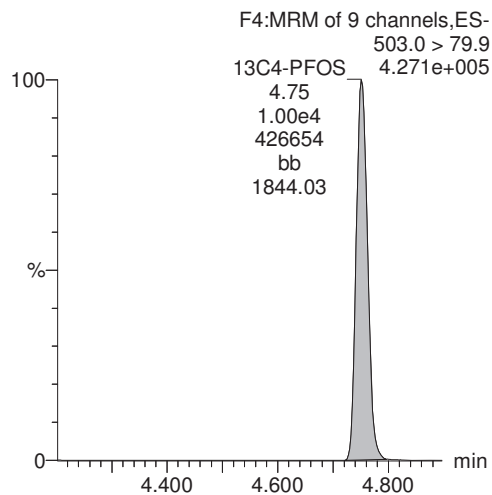
**PFOS**



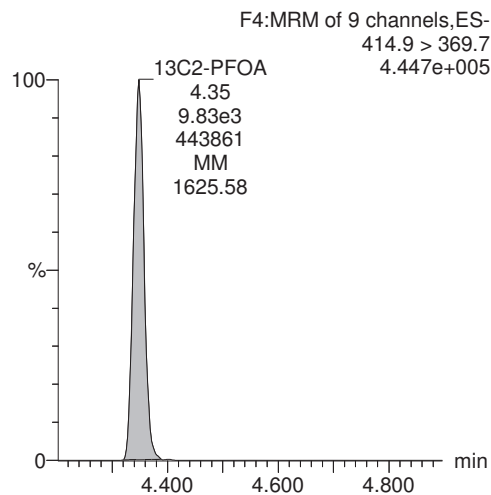
**13C2-PFHxA**



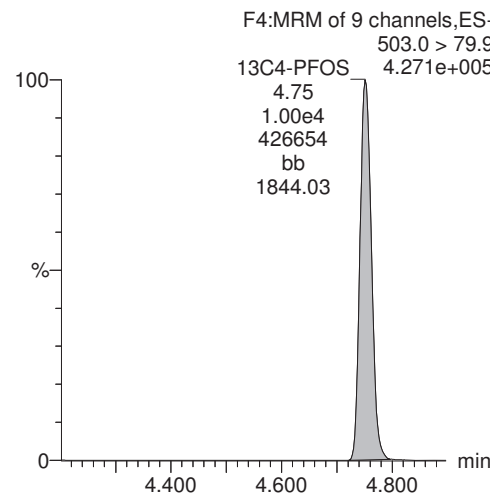
**13C4-PFOS**



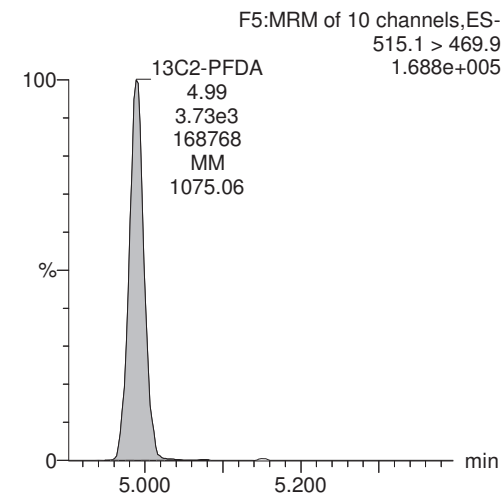
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-10.qld

Last Altered: Tuesday, December 05, 2017 10:14:13 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:14:33 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_10, Date: 05-Dec-2017, Time: 03:06:07, ID: 1701794-03 CH-AT-2RW03-1117 0.25228, Description: CH-AT-2RW03-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.89e3		0.2523	3.05				
2	2 PFOA	413 > 368.7	7.43e1	9.44e3		0.2523	4.35	4.35	0.0788	0.390	
3	3 PFOS	499 > 79.9	9.36e0	9.89e3		0.2523	4.75	4.74	0.0271	0.0894	
4	4 13C2-PFHxA	315 > 269.8	4.20e3	9.44e3	0.439	0.2523	3.41	3.40	4.45	40.2	101.4
5	5 13C2-PFDA	515.1 > 469.9	4.41e3	9.44e3	0.542	0.2523	4.98	4.99	4.67	34.2	86.2
6	6 13C2-PFOA	414.9 > 369.7	9.44e3	9.44e3	1.000	0.2523	4.41	4.35	10.0	39.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.89e3	9.89e3	1.000	0.2523	4.81	4.75	28.7	114	100.0

Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-10.qld

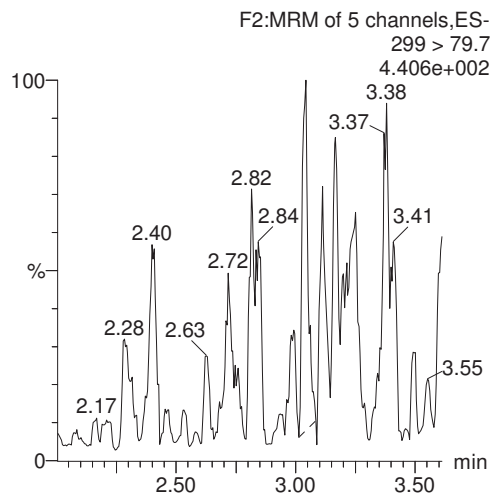
Last Altered: Tuesday, December 05, 2017 10:14:13 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:14:33 Pacific Standard Time

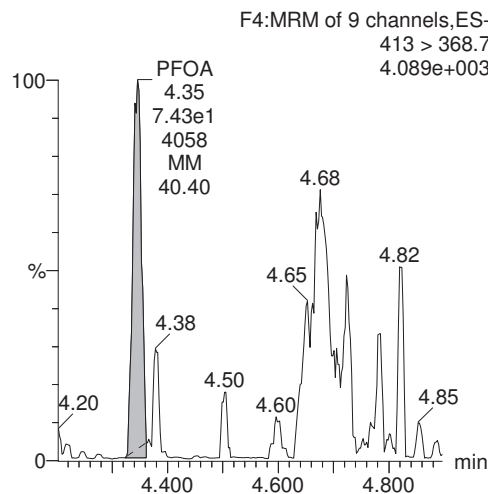
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_10, Date: 05-Dec-2017, Time: 03:06:07, ID: 1701794-03 CH-AT-2RW03-1117 0.25228, Description: CH-AT-2RW03-1117

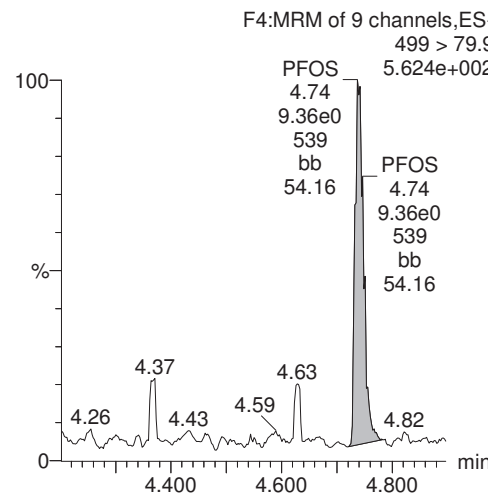
**PFBS**



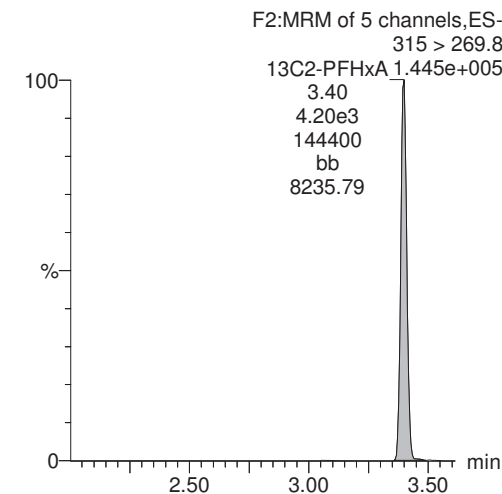
**PFOA**



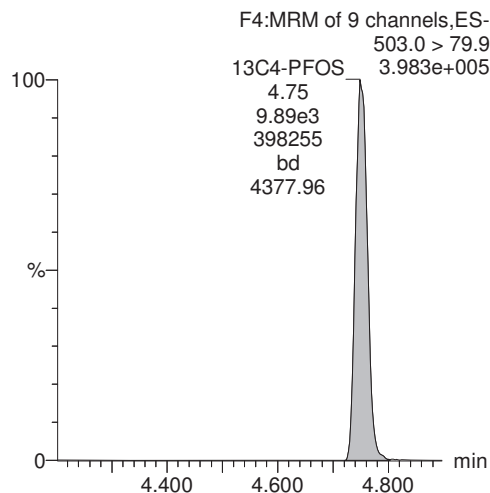
**PFOS**



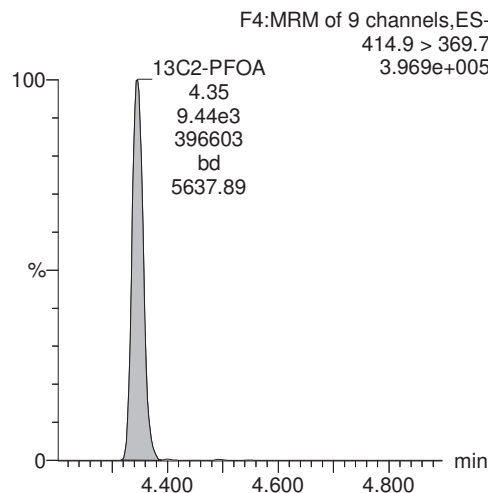
**13C2-PFHxA**



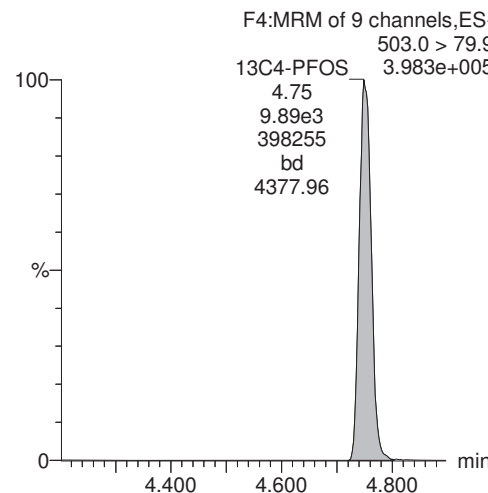
**13C4-PFOS**



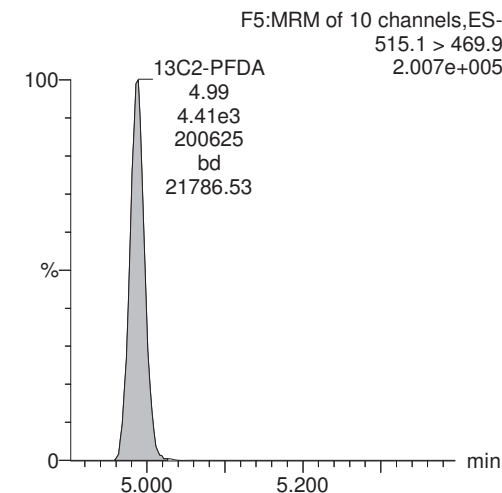
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-11.qld

Last Altered: Tuesday, December 05, 2017 10:16:07 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:16:27 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_11, Date: 05-Dec-2017, Time: 03:18:31, ID: 1701794-04 CH-AT-2RW04-1117 0.23949, Description: CH-AT-2RW04-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.30e1	9.94e3		0.2395	3.05	3.03	0.0375	0.193	
2	2 PFOA	413 > 368.7	2.16e2	9.01e3		0.2395	4.35	4.35	0.240	1.25	
3	3 PFOS	499 > 79.9	7.46e0	9.94e3		0.2395	4.75	4.64	0.0215	0.0748	
4	4 13C2-PFHxA	315 > 269.8	4.38e3	9.01e3	0.439	0.2395	3.41	3.40	4.86	46.2	110.7
5	5 13C2-PFDA	515.1 > 469.9	4.04e3	9.01e3	0.542	0.2395	4.98	4.99	4.48	34.5	82.6
6	6 13C2-PFOA	414.9 > 369.7	9.01e3	9.01e3	1.000	0.2395	4.41	4.35	10.0	41.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.94e3	9.94e3	1.000	0.2395	4.81	4.75	28.7	120	100.0

Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-11.qld

Last Altered: Tuesday, December 05, 2017 10:16:07 Pacific Standard Time

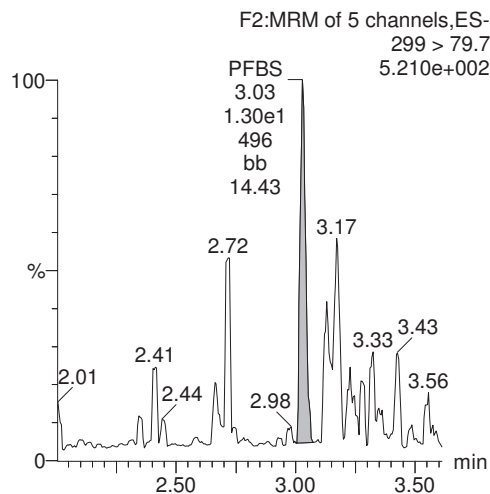
Printed: Tuesday, December 05, 2017 10:16:27 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

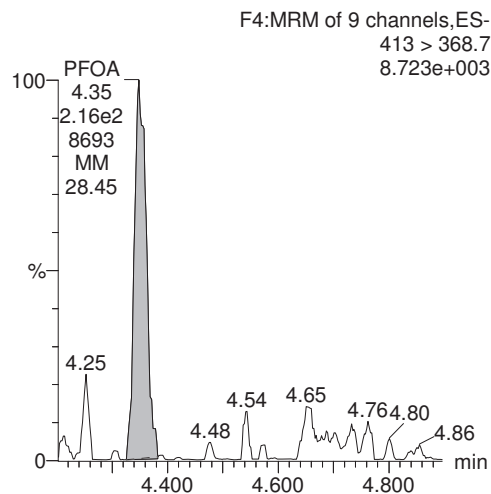
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_11, Date: 05-Dec-2017, Time: 03:18:31, ID: 1701794-04 CH-AT-2RW04-1117 0.23949, Description: CH-AT-2RW04-1117

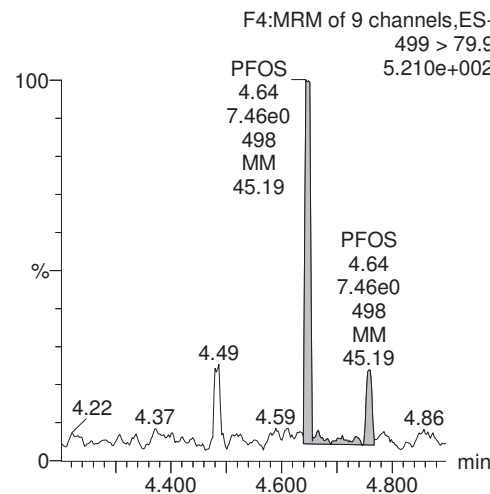
**PFBS**



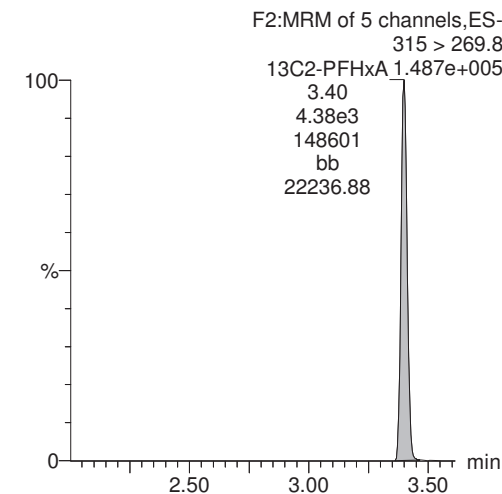
**PFOA**



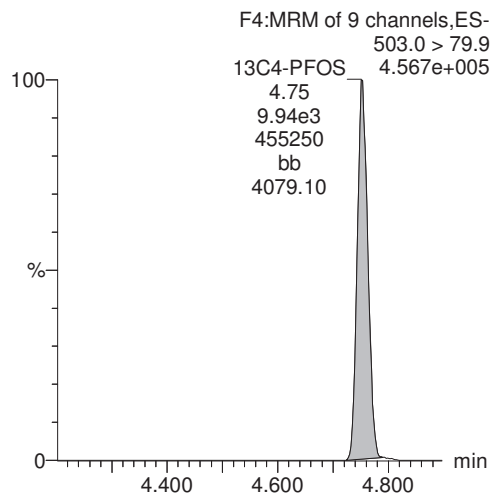
**PFOS**



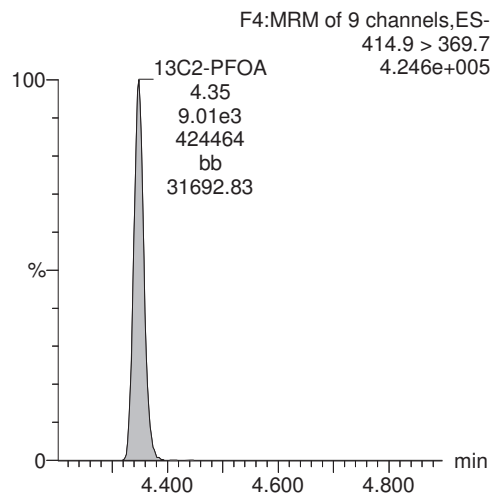
**13C2-PFHxA**



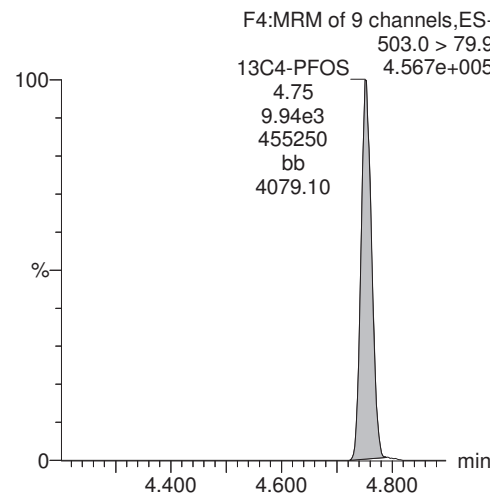
**13C4-PFOS**



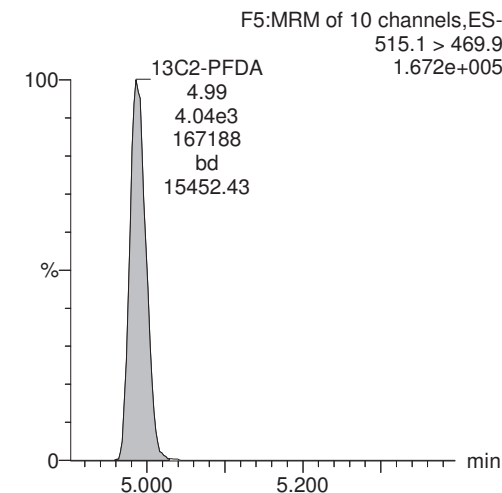
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-12.qld

Last Altered: Tuesday, December 05, 2017 10:18:26 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:18:41 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_12, Date: 05-Dec-2017, Time: 03:30:56, ID: 1701794-05 CH-AT-2RW05-1117 0.25274, Description: CH-AT-2RW05-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.45e3		0.2527	3.05				
2	2 PFOA	413 > 368.7	8.65e1	8.48e3		0.2527	4.35	4.34	0.102	0.505	
3	3 PFOS	499 > 79.9	2.23e1	9.45e3		0.2527	4.75	4.75	0.0678	0.223	
4	4 13C2-PFHxA	315 > 269.8	4.10e3	8.48e3	0.439	0.2527	3.41	3.40	4.84	43.6	110.1
5	5 13C2-PFDA	515.1 > 469.9	4.29e3	8.48e3	0.542	0.2527	4.98	4.99	5.06	36.9	93.3
6	6 13C2-PFOA	414.9 > 369.7	8.48e3	8.48e3	1.000	0.2527	4.41	4.35	10.0	39.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.45e3	9.45e3	1.000	0.2527	4.81	4.75	28.7	114	100.0

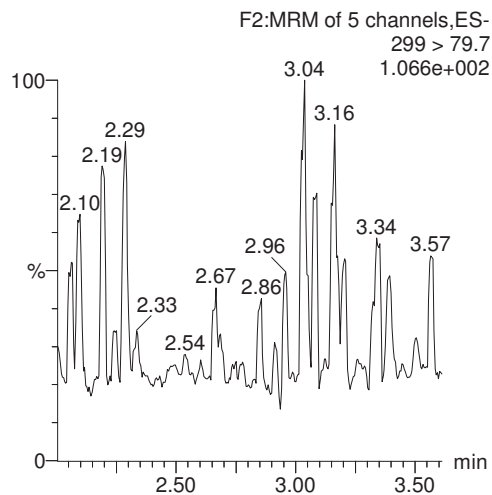
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Last Altered: Tuesday, December 05, 2017 10:18:26 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:18:41 Pacific Standard Time

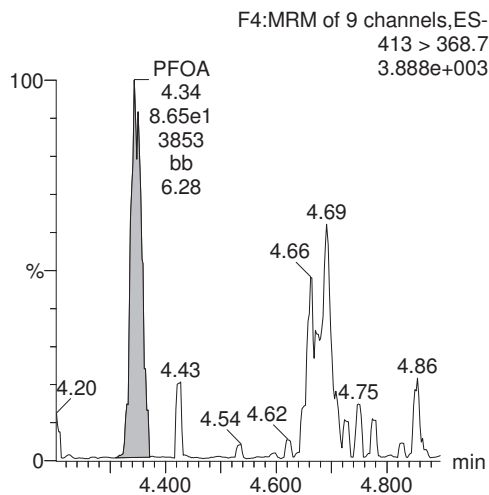
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_12, Date: 05-Dec-2017, Time: 03:30:56, ID: 1701794-05 CH-AT-2RW05-1117 0.25274, Description: CH-AT-2RW05-1117

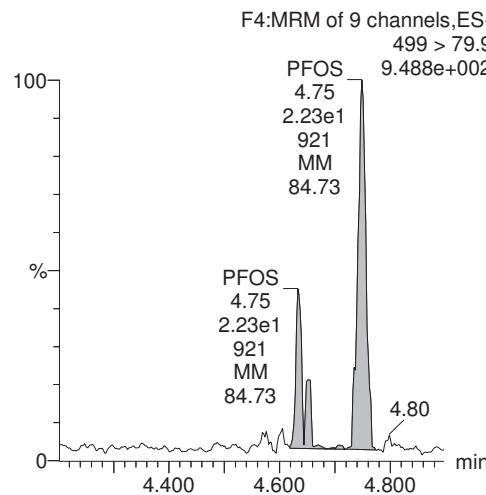
**PFBS**



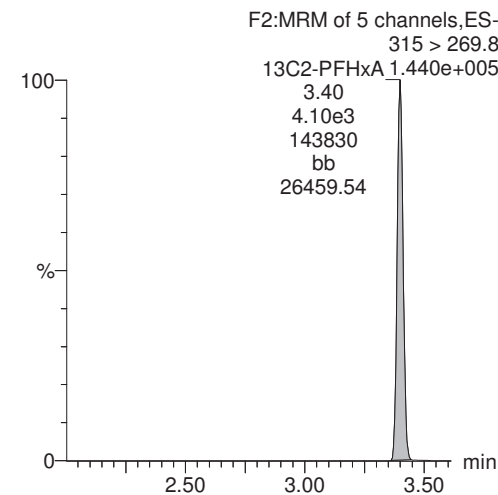
**PFOA**



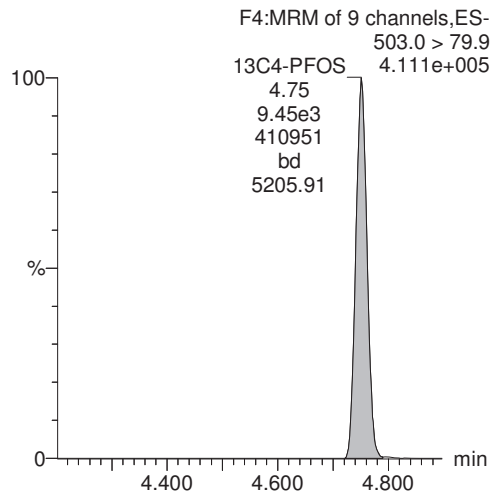
**PFOS**



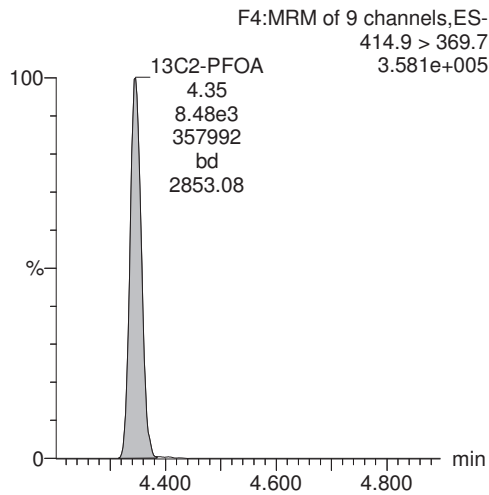
**13C2-PFHxA**



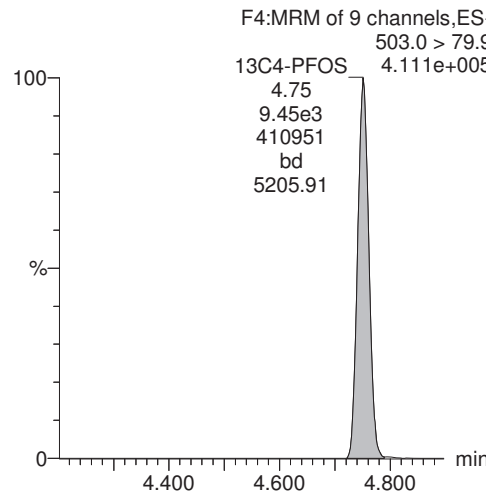
**13C4-PFOS**



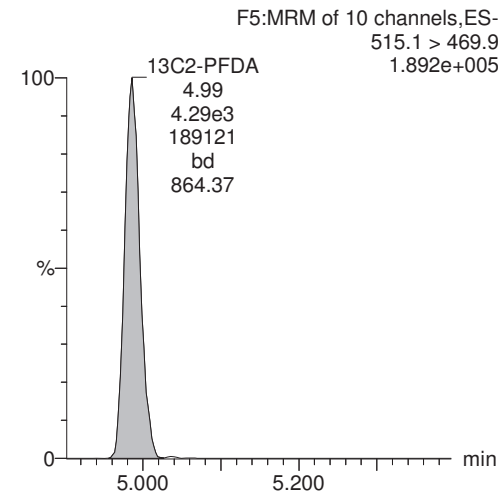
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-13.qld

Last Altered: Tuesday, December 05, 2017 10:19:13 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:19:30 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_13, Date: 05-Dec-2017, Time: 03:43:20, ID: 1701794-06 CH-AT-2RW06-1117 0.25357, Description: CH-AT-2RW06-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.33e3		0.2536	3.05				
2	2 PFOA	413 > 368.7	4.65e1	8.84e3		0.2536	4.35	4.35	0.0526	0.259	
3	3 PFOS	499 > 79.9	8.83e0	9.33e3		0.2536	4.75	4.66	0.0272	0.0891	
4	4 13C2-PFHxA	315 > 269.8	4.27e3	8.84e3	0.439	0.2536	3.41	3.40	4.83	43.4	110.0
5	5 13C2-PFDA	515.1 > 469.9	4.39e3	8.84e3	0.542	0.2536	4.98	4.99	4.97	36.1	91.6
6	6 13C2-PFOA	414.9 > 369.7	8.84e3	8.84e3	1.000	0.2536	4.41	4.35	10.0	39.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.33e3	9.33e3	1.000	0.2536	4.81	4.75	28.7	113	100.0



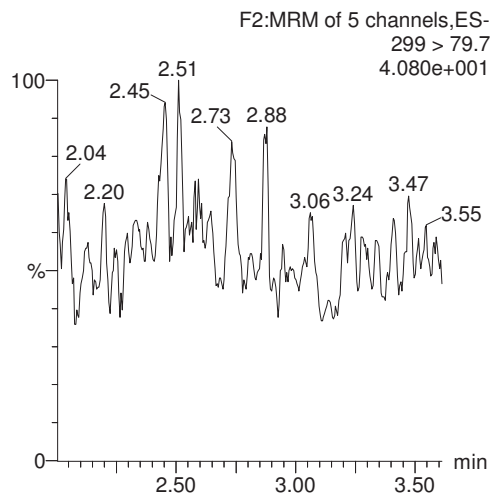
Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-13.qld

Last Altered: Tuesday, December 05, 2017 10:19:13 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:19:30 Pacific Standard Time

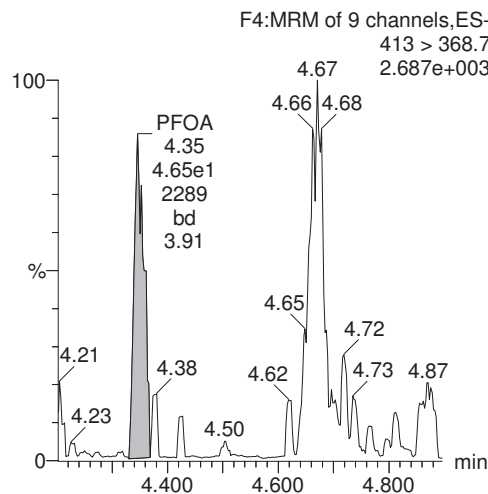
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_13, Date: 05-Dec-2017, Time: 03:43:20, ID: 1701794-06 CH-AT-2RW06-1117 0.25357, Description: CH-AT-2RW06-1117

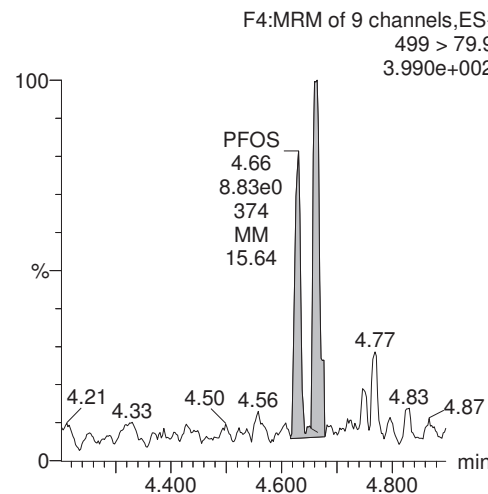
**PFBS**



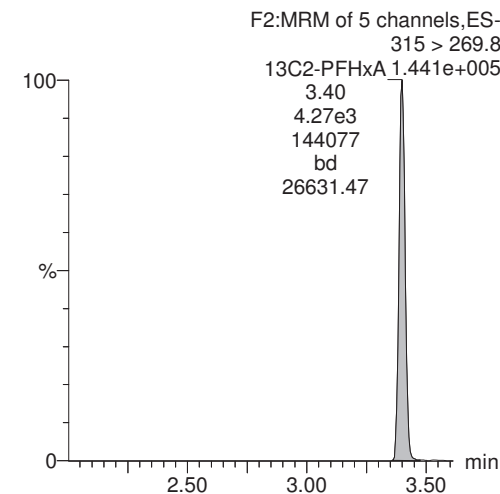
**PFOA**



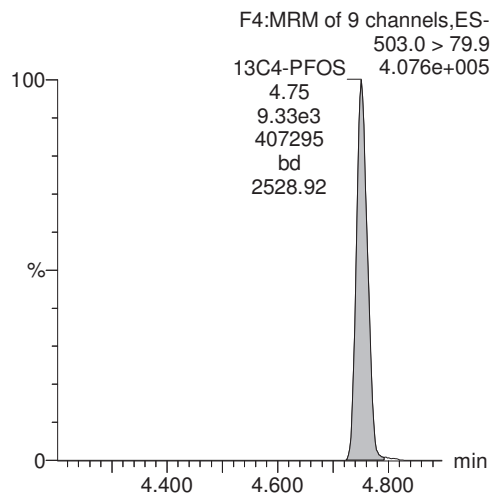
**PFOS**



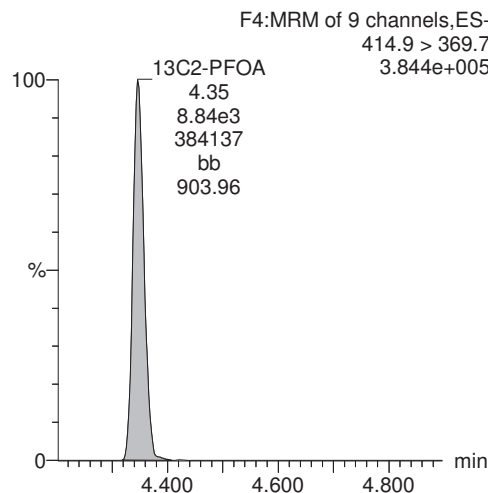
**13C2-PFHxA**



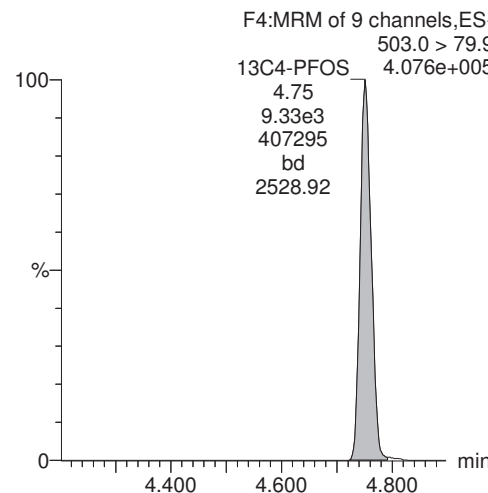
**13C4-PFOS**



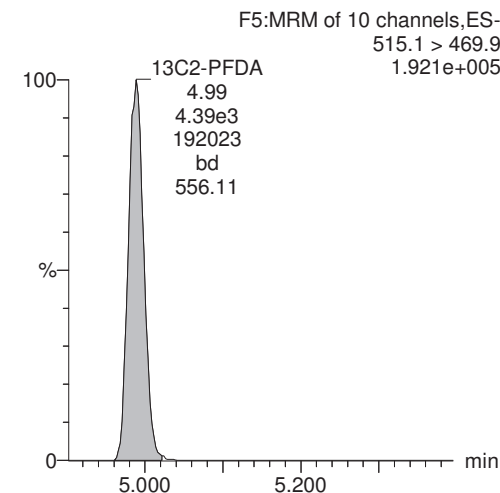
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-14.qld

Last Altered: Tuesday, December 05, 2017 10:20:04 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:20:24 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_14, Date: 05-Dec-2017, Time: 03:55:46, ID: 1701794-07 CH-AT-2RW07-1117 0.25736, Description: CH-AT-2RW07-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.03e3		0.2574	3.05				
2	2 PFOA	413 > 368.7	8.50e1	9.05e3		0.2574	4.35	4.35	0.0940	0.456	
3	3 PFOS	499 > 79.9		9.03e3		0.2574	4.75				
4	4 13C2-PFHxA	315 > 269.8	4.52e3	9.05e3	0.439	0.2574	3.41	3.40	4.99	44.2	113.7
5	5 13C2-PFDA	515.1 > 469.9	4.06e3	9.05e3	0.542	0.2574	4.98	4.99	4.49	32.2	82.8
6	6 13C2-PFOA	414.9 > 369.7	9.05e3	9.05e3	1.000	0.2574	4.41	4.35	10.0	38.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.03e3	9.03e3	1.000	0.2574	4.81	4.75	28.7	112	100.0

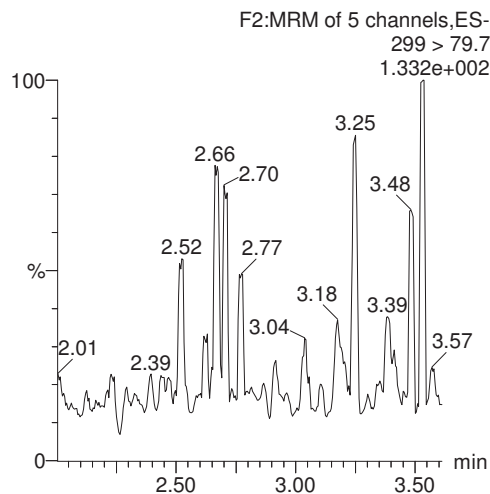
Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-14.qld

Last Altered: Tuesday, December 05, 2017 10:20:04 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:20:24 Pacific Standard Time

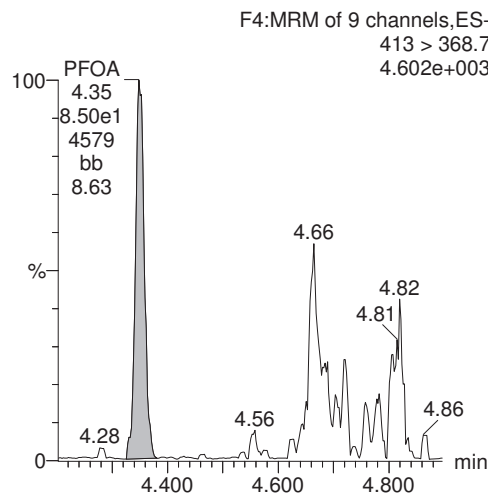
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_14, Date: 05-Dec-2017, Time: 03:55:46, ID: 1701794-07 CH-AT-2RW07-1117 0.25736, Description: CH-AT-2RW07-1117

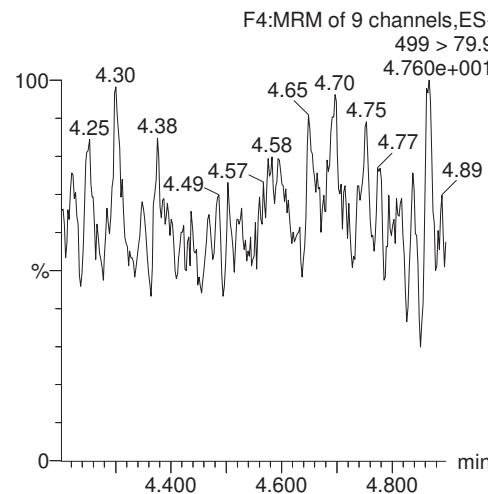
PFBS



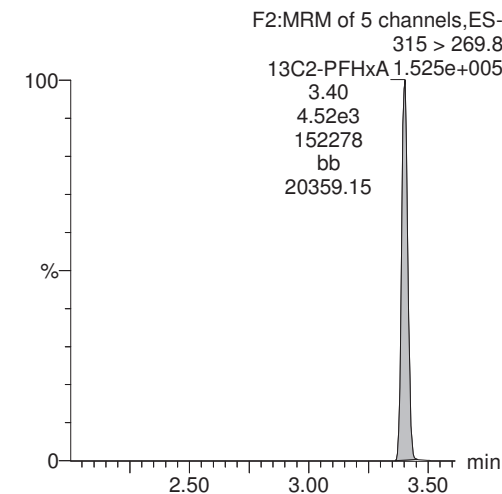
PFOA



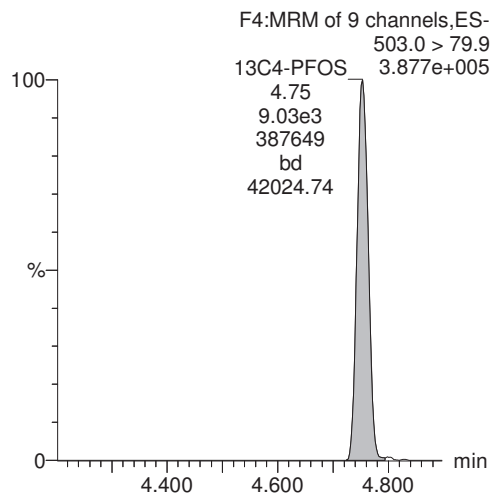
PFOS



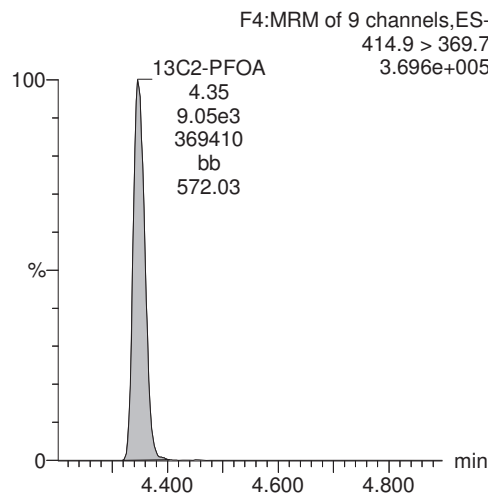
13C2-PFHxA



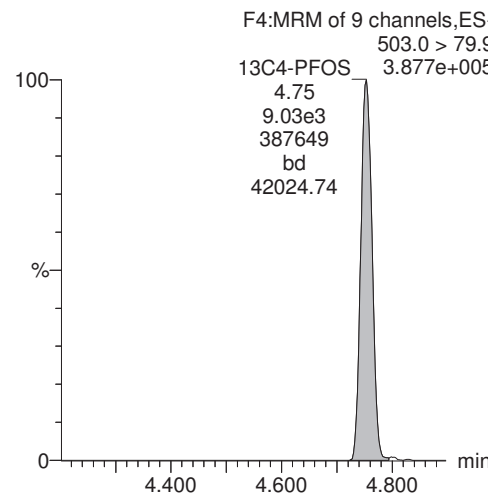
13C4-PFOS



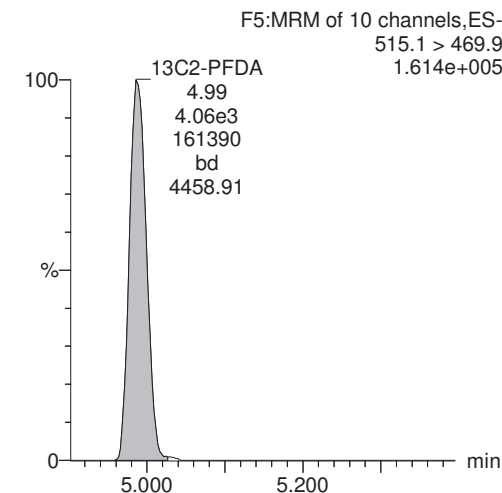
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-15.qld

Last Altered: Tuesday, December 05, 2017 10:21:09 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:21:28 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_15, Date: 05-Dec-2017, Time: 04:08:12, ID: 1701794-08 CH-AT-2RW08-1117 0.24522, Description: CH-AT-2RW08-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.56e1	9.65e3		0.2452	3.05	3.04	0.0465	0.234	
2	2 PFOA	413 > 368.7	3.93e1	7.59e3		0.2452	4.35	4.35	0.0518	0.264	
3	3 PFOS	499 >79.9	4.23e0	9.65e3		0.2452	4.75	4.75	0.0126	0.0427	
4	4 13C2-PFHxA	315 > 269.8	3.57e3	7.59e3	0.439	0.2452	3.41	3.40	4.70	43.7	107.1
5	5 13C2-PFDA	515.1 > 469.9	3.66e3	7.59e3	0.542	0.2452	4.98	4.99	4.82	36.2	88.9
6	6 13C2-PFOA	414.9 > 369.7	7.59e3	7.59e3	1.000	0.2452	4.41	4.35	10.0	40.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.65e3	9.65e3	1.000	0.2452	4.81	4.75	28.7	117	100.0

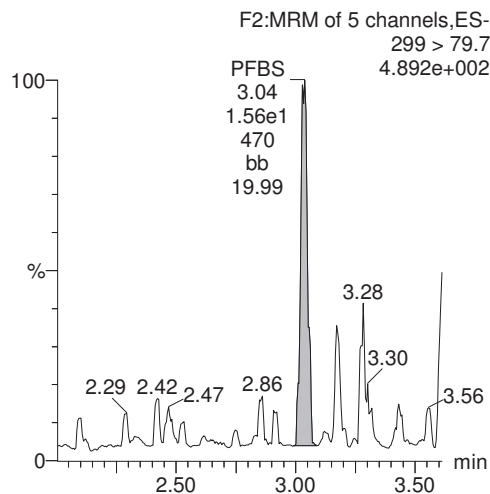
Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-15.qld

Last Altered: Tuesday, December 05, 2017 10:21:09 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:21:28 Pacific Standard Time

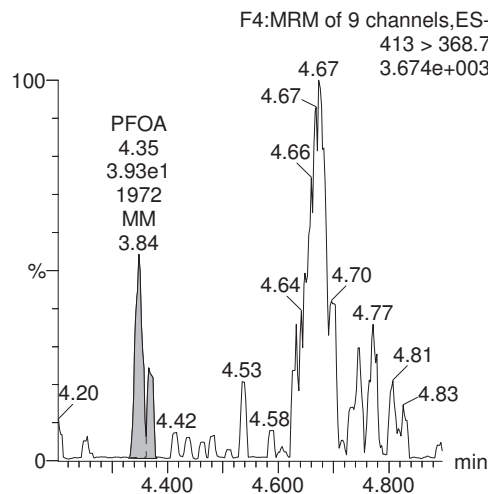
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_15, Date: 05-Dec-2017, Time: 04:08:12, ID: 1701794-08 CH-AT-2RW08-1117 0.24522, Description: CH-AT-2RW08-1117

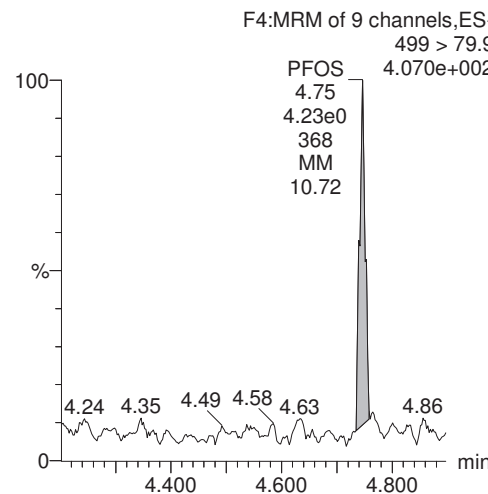
**PFBS**



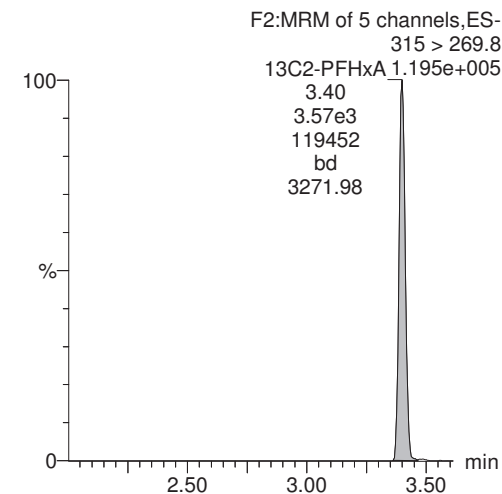
**PFOA**



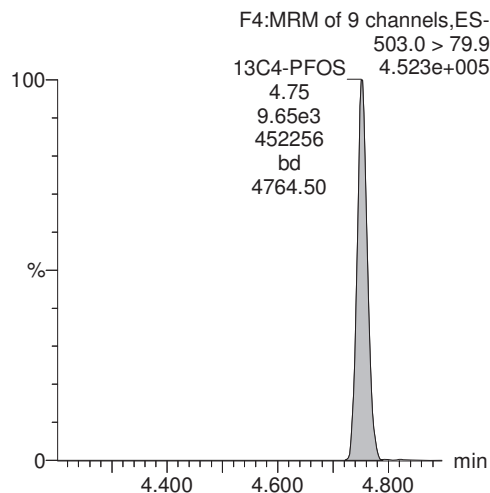
**PFOS**



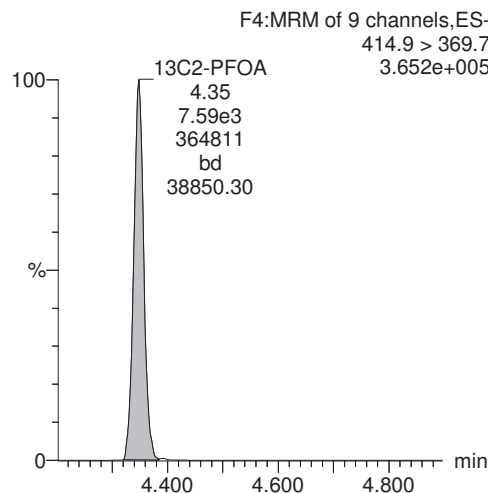
**13C2-PFHxA**



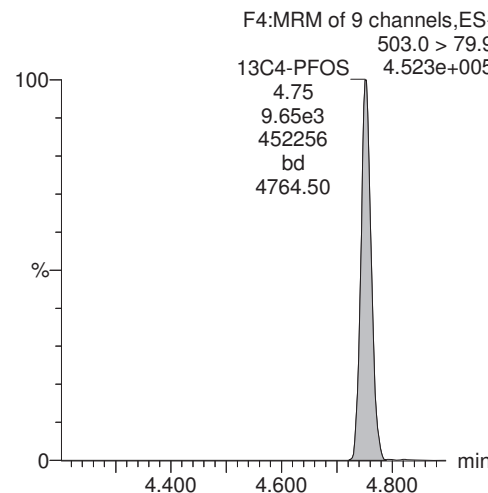
**13C4-PFOS**



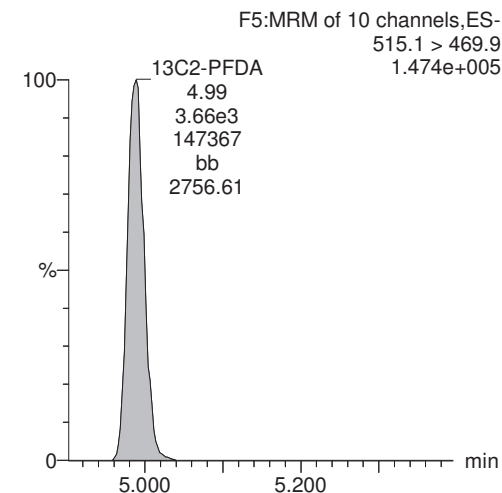
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-16.qld

Last Altered: Tuesday, December 05, 2017 10:22:20 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:23:16 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_16, Date: 05-Dec-2017, Time: 04:20:40, ID: 1701794-09 CH-AT-2RW09-1117 0.25148, Description: CH-AT-2RW09-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.04e4		0.2515	3.05				
2	2 PFOA	413 > 368.7	4.69e1	9.01e3		0.2515	4.35	4.34	0.0521	0.259	
3	3 PFOS	499 > 79.9	1.65e1	1.04e4		0.2515	4.75	4.75	0.0456	0.151	
4	4 13C2-PFHxA	315 > 269.8	3.94e3	9.01e3	0.439	0.2515	3.41	3.40	4.37	39.6	99.5
5	5 13C2-PFDA	515.1 > 469.9	3.80e3	9.01e3	0.542	0.2515	4.98	4.99	4.21	30.9	77.7
6	6 13C2-PFOA	414.9 > 369.7	9.01e3	9.01e3	1.000	0.2515	4.41	4.35	10.0	39.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2515	4.81	4.75	28.7	114	100.0

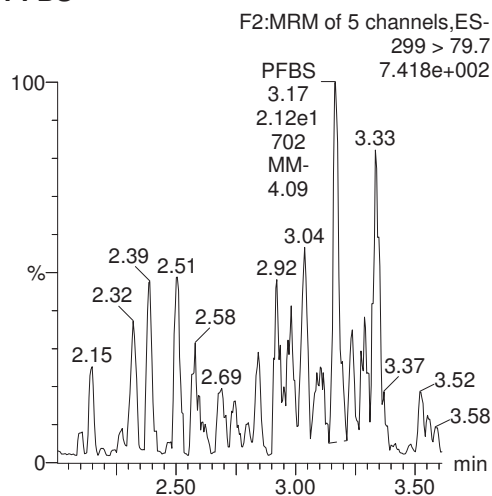
Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-16.qld

Last Altered: Tuesday, December 05, 2017 10:22:20 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:23:16 Pacific Standard Time

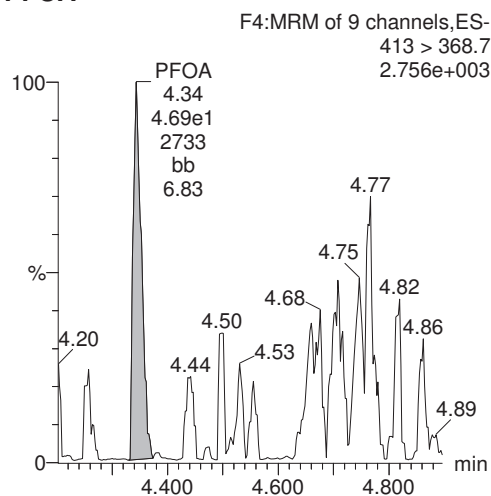
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_16, Date: 05-Dec-2017, Time: 04:20:40, ID: 1701794-09 CH-AT-2RW09-1117 0.25148, Description: CH-AT-2RW09-1117

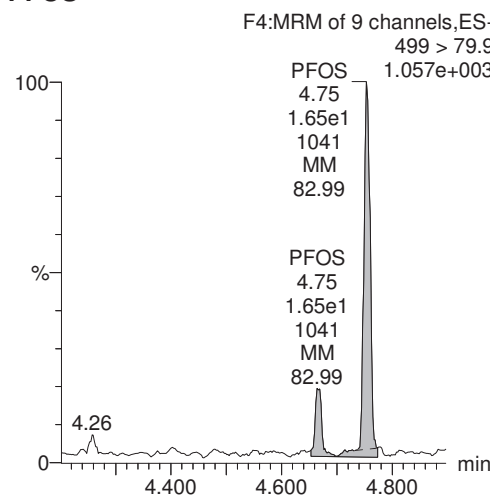
PFBS



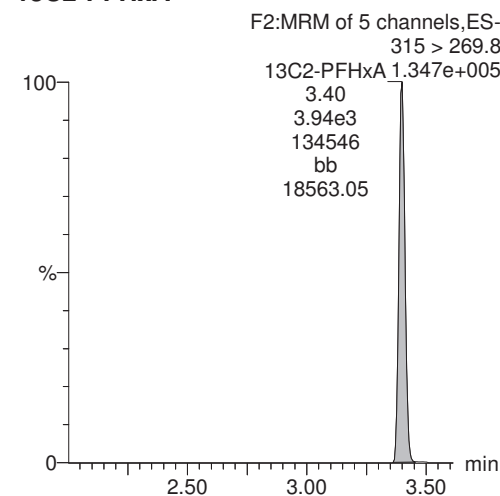
PFOA



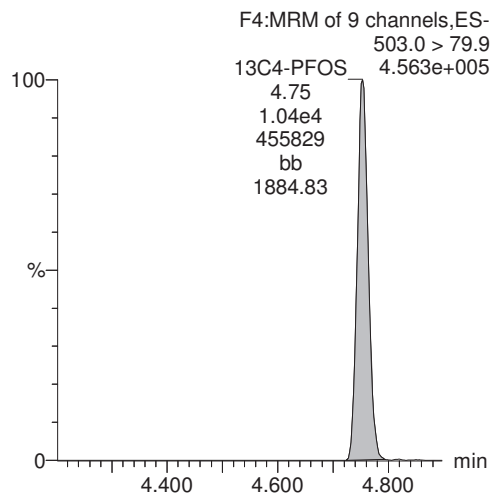
PFOS



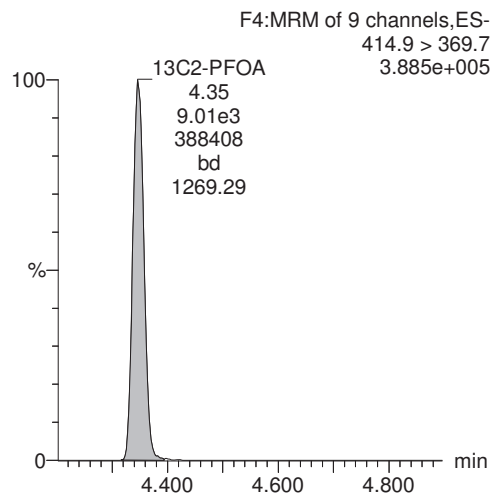
13C2-PFHxA



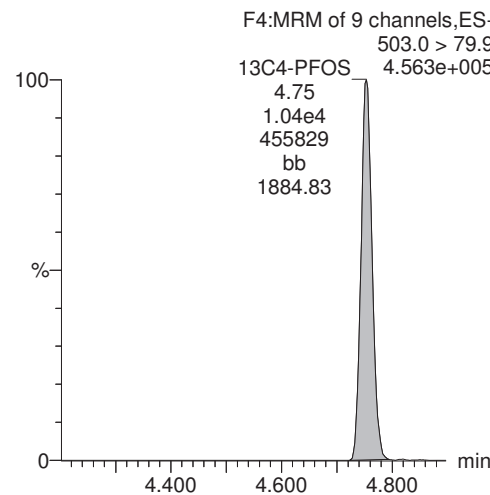
13C4-PFOS



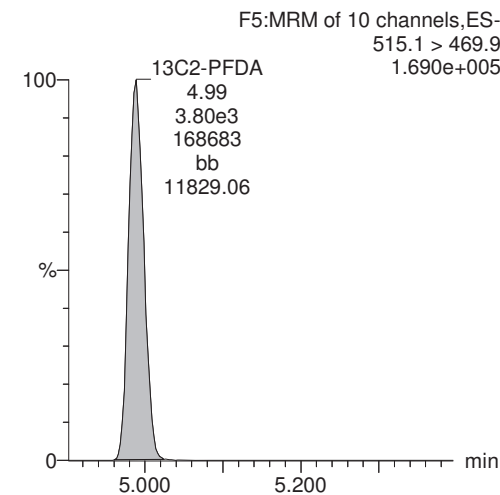
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-17.qld

Last Altered: Tuesday, December 05, 2017 10:24:20 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:24:37 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_17, Date: 05-Dec-2017, Time: 04:33:07, ID: 1701794-11 CH-AT-2FB01-1117 0.25942, Description: CH-AT-2FB01-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.43e3		0.2594	3.05				
2	2 PFOA	413 > 368.7	7.72e1	8.87e3		0.2594	4.35	4.35	0.0871	0.420	
3	3 PFOS	499 > 79.9	1.28e1	9.43e3		0.2594	4.75	4.76	0.0391	0.125	
4	4 13C2-PFHxA	315 > 269.8	3.92e3	8.87e3	0.439	0.2594	3.41	3.40	4.42	38.8	100.6
5	5 13C2-PFDA	515.1 > 469.9	3.85e3	8.87e3	0.542	0.2594	4.98	4.99	4.34	30.8	80.0
6	6 13C2-PFOA	414.9 > 369.7	8.87e3	8.87e3	1.000	0.2594	4.41	4.35	10.0	38.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.43e3	9.43e3	1.000	0.2594	4.81	4.75	28.7	111	100.0



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-17.qld

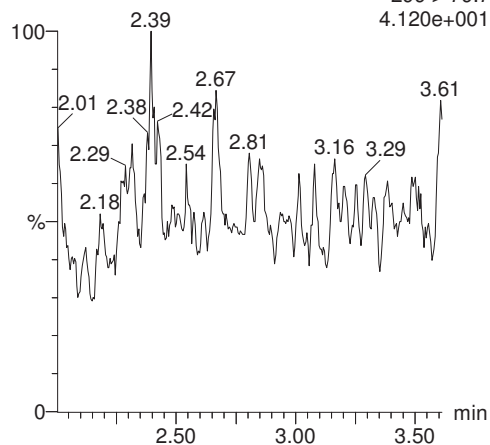
Last Altered: Tuesday, December 05, 2017 10:24:20 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:24:37 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_17, Date: 05-Dec-2017, Time: 04:33:07, ID: 1701794-11 CH-AT-2FB01-1117 0.25942, Description: CH-AT-2FB01-1117

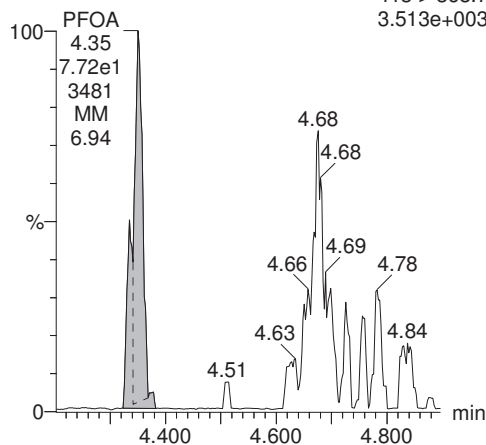
**PFBS**

F2:MRM of 5 channels,ES-  
299 > 79.7  
4.120e+001



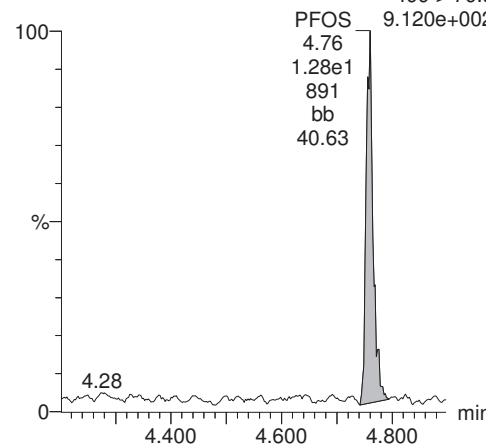
**PFOA**

F4:MRM of 9 channels,ES-  
413 > 368.7  
3.513e+003



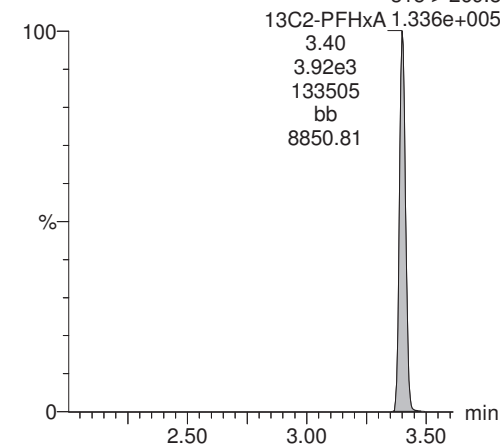
**PFOS**

F4:MRM of 9 channels,ES-  
499 > 79.9  
9.120e+002



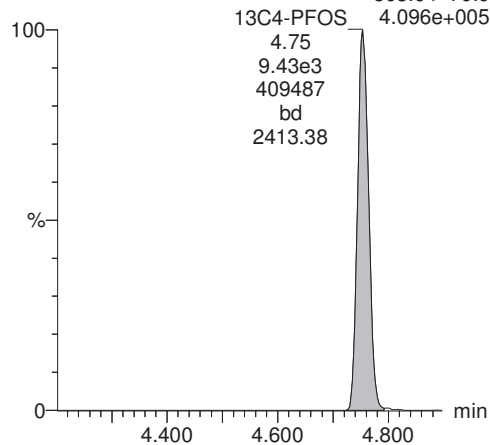
**13C2-PFHxA**

F2:MRM of 5 channels,ES-  
315 > 269.8  
1.336e+005



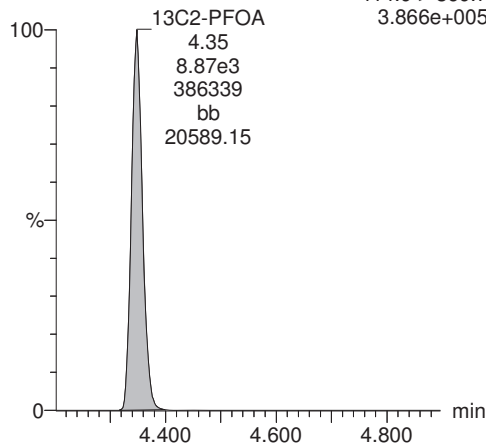
**13C4-PFOS**

F4:MRM of 9 channels,ES-  
503.0 > 79.9  
4.096e+005



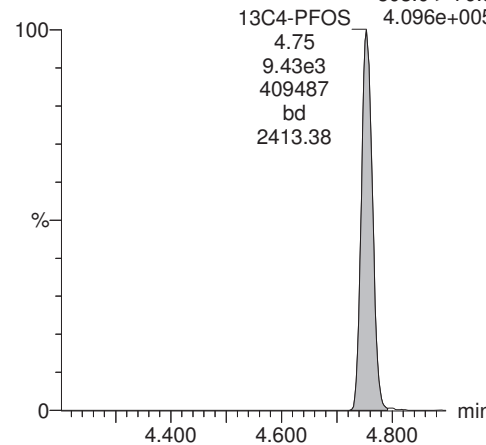
**13C2-PFOA**

F4:MRM of 9 channels,ES-  
414.9 > 369.7  
3.866e+005



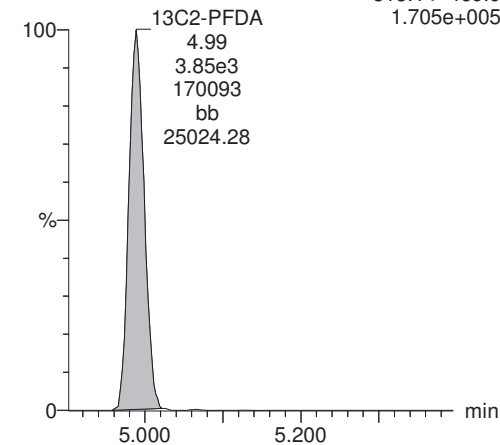
**13C4-PFOS**

F4:MRM of 9 channels,ES-  
503.0 > 79.9  
4.096e+005



**13C2-PFDA**

F5:MRM of 10 channels,ES-  
515.1 > 469.9  
1.705e+005



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-18.qld

Last Altered: Tuesday, December 05, 2017 10:25:08 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:25:18 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_18, Date: 05-Dec-2017, Time: 04:45:35, ID: 1701794-12 CH-AT-2FB02-1117 0.26238, Description: CH-AT-2FB02-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.61e3		0.2624	3.05				
2	2 PFOA	413 > 368.7	3.27e1	8.95e3		0.2624	4.35	4.35	0.0365	0.174	
3	3 PFOS	499 > 79.9	6.98e0	9.61e3		0.2624	4.75	4.75	0.0209	0.0661	
4	4 13C2-PFHxA	315 > 269.8	3.72e3	8.95e3	0.439	0.2624	3.41	3.40	4.16	36.1	94.7
5	5 13C2-PFDA	515.1 > 469.9	3.62e3	8.95e3	0.542	0.2624	4.98	4.99	4.05	28.5	74.7
6	6 13C2-PFOA	414.9 > 369.7	8.95e3	8.95e3	1.000	0.2624	4.41	4.35	10.0	38.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.61e3	9.61e3	1.000	0.2624	4.81	4.75	28.7	109	100.0

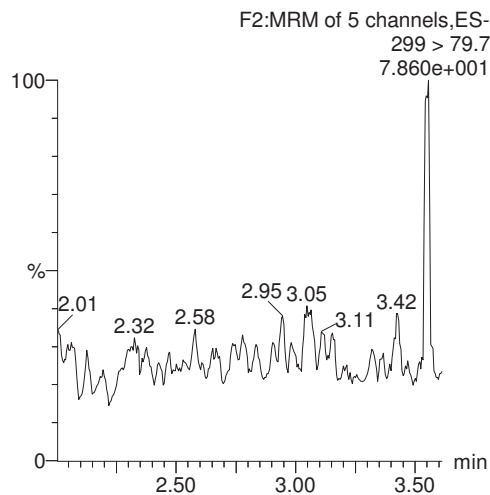
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Last Altered: Tuesday, December 05, 2017 10:25:08 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:25:18 Pacific Standard Time

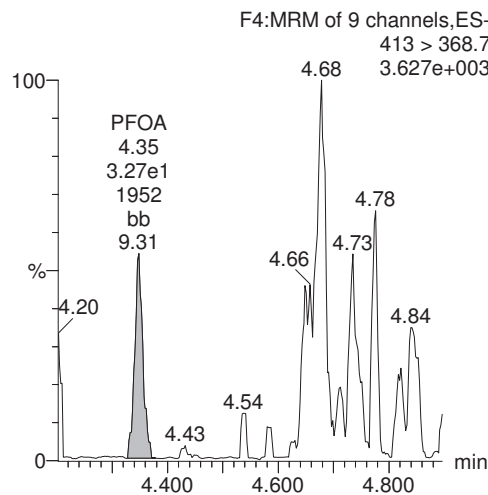
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_18, Date: 05-Dec-2017, Time: 04:45:35, ID: 1701794-12 CH-AT-2FB02-1117 0.26238, Description: CH-AT-2FB02-1117

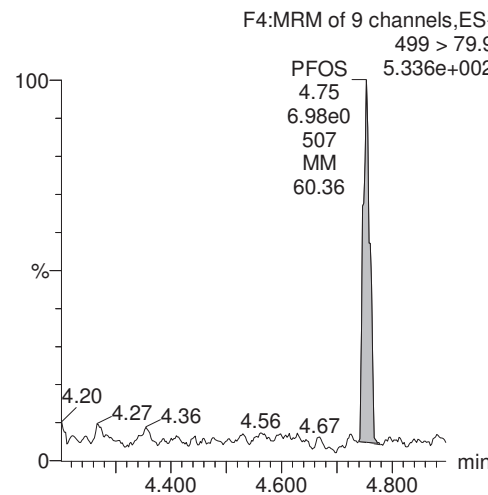
PFBS



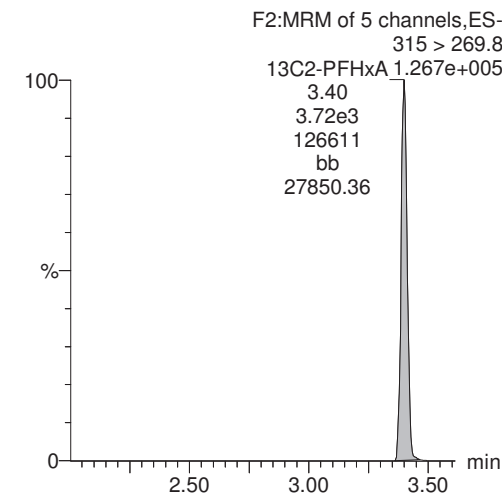
PFOA



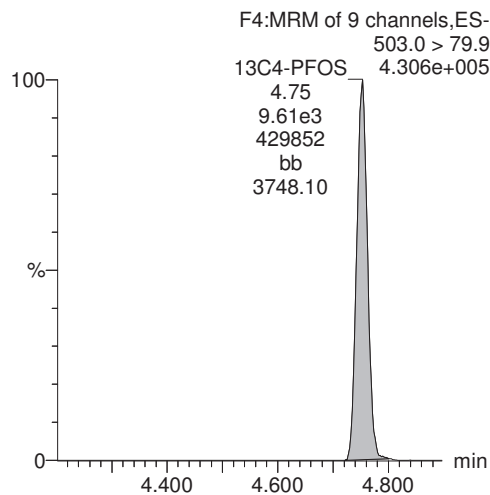
PFOS



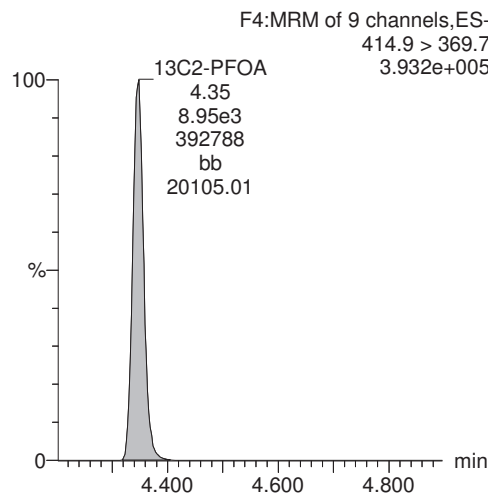
13C2-PFHxA



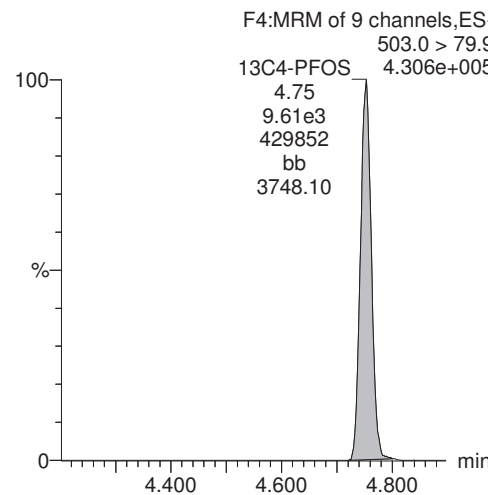
13C4-PFOS



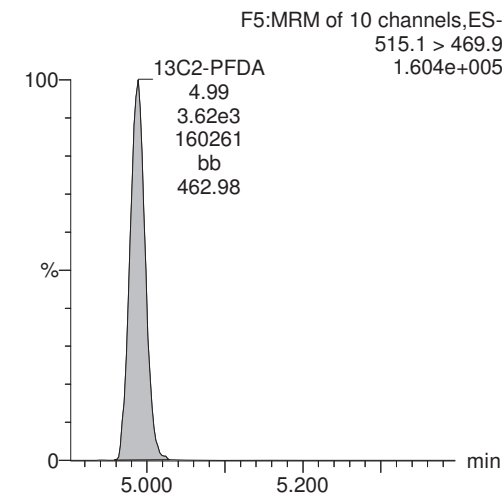
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-19.qld

Last Altered: Tuesday, December 05, 2017 10:26:47 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:27:14 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_19, Date: 05-Dec-2017, Time: 04:57:59, ID: 1701794-13 CH-AT-2FB03-1117 0.25437, Description: CH-AT-2FB03-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.35e0	9.04e3		0.2544	3.05	3.03	0.00747	0.0363	
2	2 PFOA	413 > 368.7	4.50e1	8.17e3		0.2544	4.34	4.34	0.0551	0.271	
3	3 PFOS	499 > 79.9		9.04e3		0.2544	4.75				
4	4 13C2-PFHxA	315 > 269.8	3.88e3	8.17e3	0.439	0.2544	3.40	3.40	4.76	42.6	108.3
5	5 13C2-PFDA	515.1 > 469.9	4.06e3	8.17e3	0.542	0.2544	4.97	4.99	4.97	36.0	91.6
6	6 13C2-PFOA	414.9 > 369.7	8.17e3	8.17e3	1.000	0.2544	4.41	4.34	10.0	39.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.04e3	9.04e3	1.000	0.2544	4.81	4.75	28.7	113	100.0

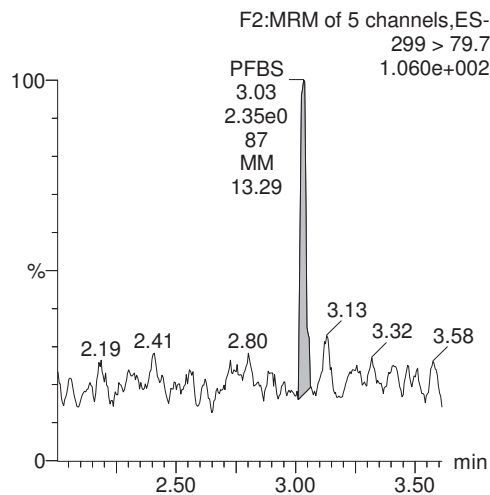
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Last Altered: Tuesday, December 05, 2017 10:26:47 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:27:14 Pacific Standard Time

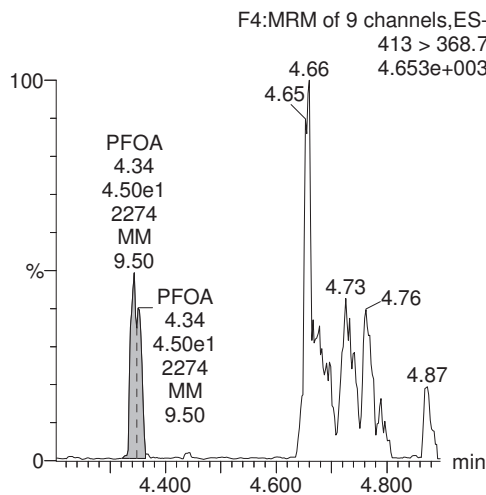
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_19, Date: 05-Dec-2017, Time: 04:57:59, ID: 1701794-13 CH-AT-2FB03-1117 0.25437, Description: CH-AT-2FB03-1117

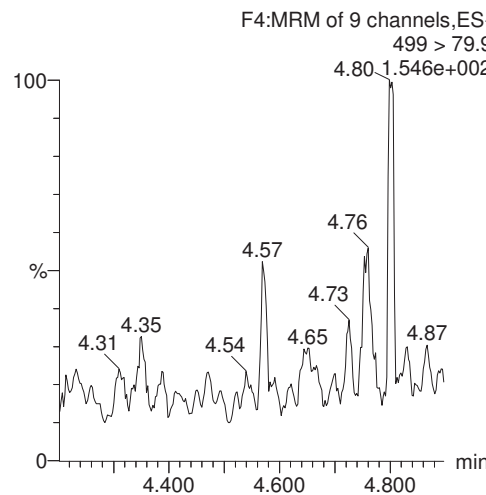
**PFBS**



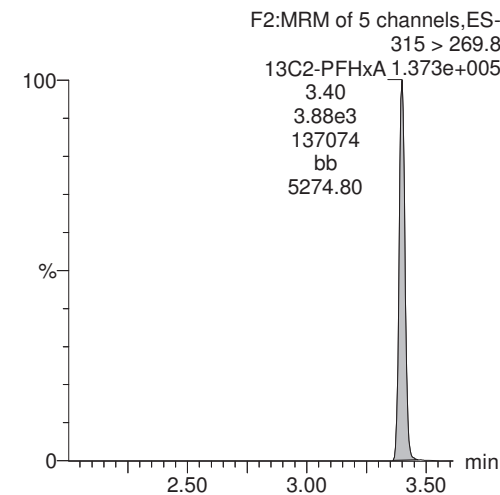
**PFOA**



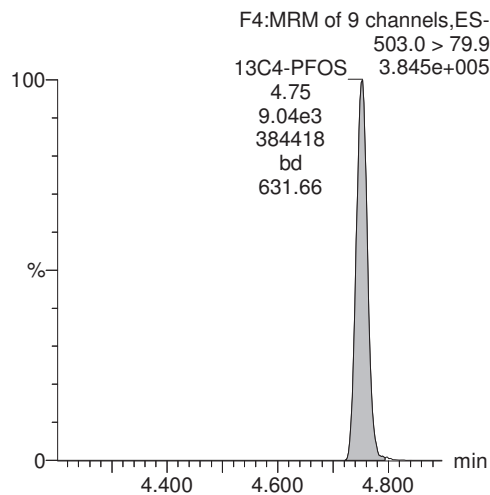
**PFOS**



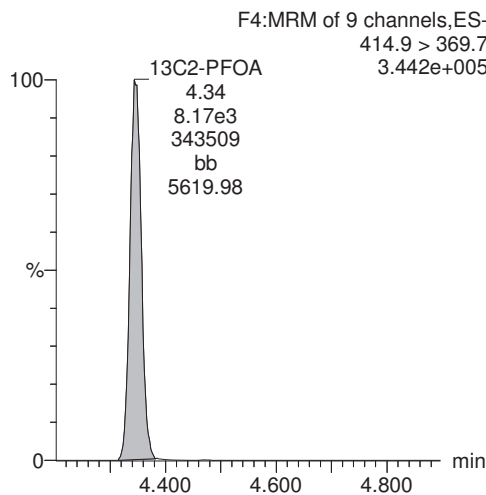
**13C2-PFHxA**



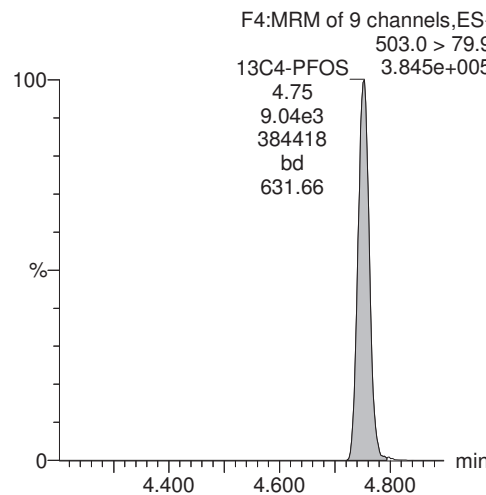
**13C4-PFOS**



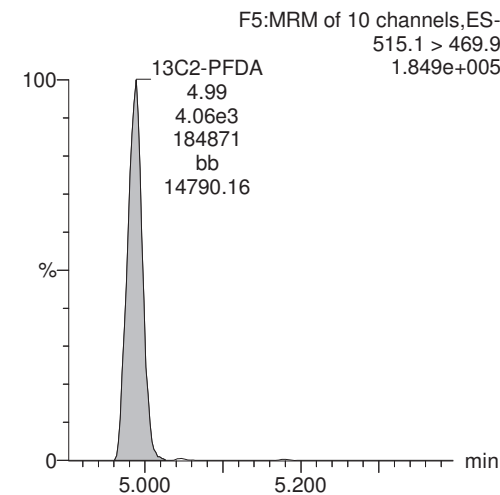
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-20.qld

Last Altered: Tuesday, December 05, 2017 10:28:04 Pacific Standard Time

Printed: Tuesday, December 05, 2017 10:28:20 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_20, Date: 05-Dec-2017, Time: 05:10:22, ID: 1701794-14 CH-AT-2FB04-1117 0.26715, Description: CH-AT-2FB04-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.20e3		0.2672	3.05				
2	2 PFOA	413 > 368.7	7.05e1	8.25e3		0.2672	4.35	4.35	0.0855	0.400	
3	3 PFOS	499 > 79.9	4.84e0	9.20e3		0.2672	4.75	4.76	0.0151	0.0470	
4	4 13C2-PFHxA	315 > 269.8	3.78e3	8.25e3	0.439	0.2672	3.41	3.40	4.59	39.1	104.4
5	5 13C2-PFDA	515.1 > 469.9	4.29e3	8.25e3	0.542	0.2672	4.98	4.99	5.20	35.9	95.9
6	6 13C2-PFOA	414.9 > 369.7	8.25e3	8.25e3	1.000	0.2672	4.41	4.35	10.0	37.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.20e3	9.20e3	1.000	0.2672	4.81	4.75	28.7	107	100.0

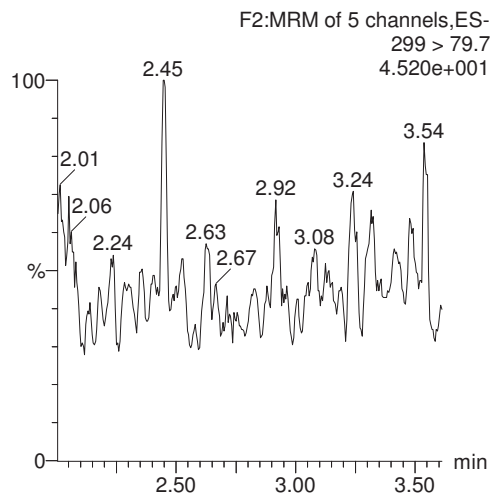
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Last Altered: Tuesday, December 05, 2017 10:28:04 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 10:28:20 Pacific Standard Time

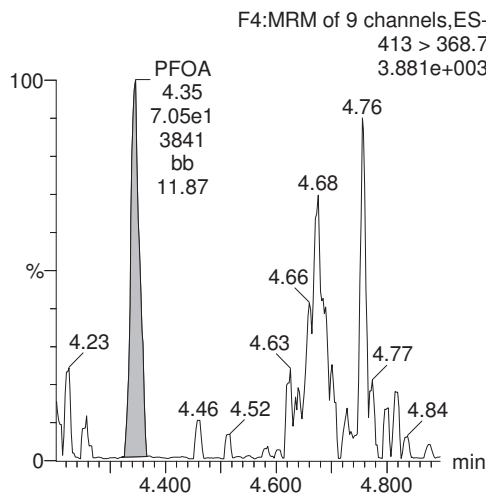
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_20, Date: 05-Dec-2017, Time: 05:10:22, ID: 1701794-14 CH-AT-2FB04-1117 0.26715, Description: CH-AT-2FB04-1117

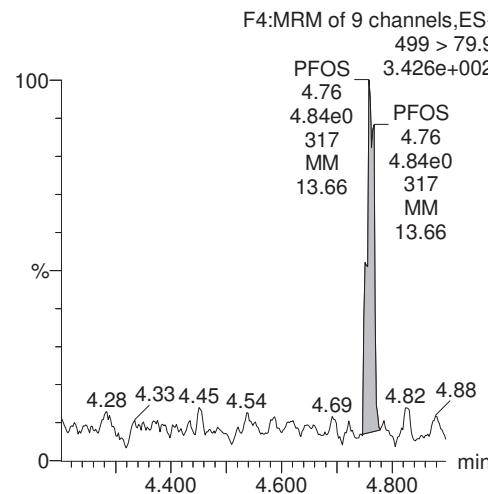
PFBS



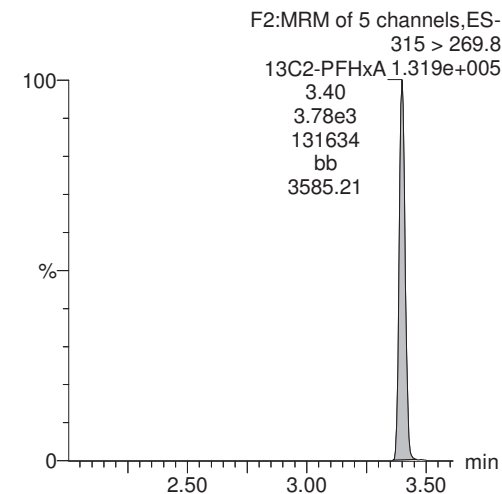
PFOA



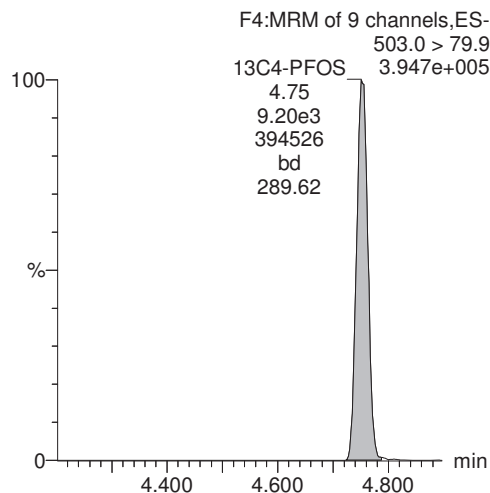
PFOS



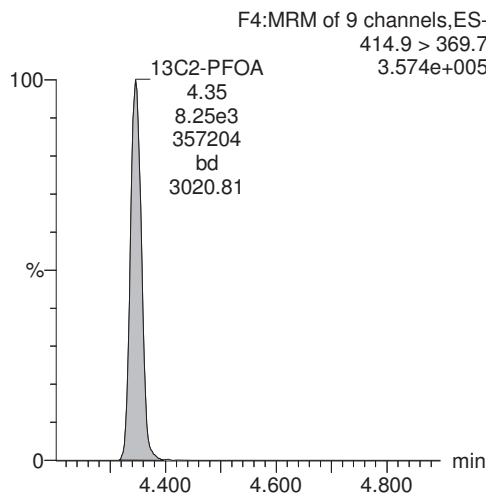
13C2-PFHxA



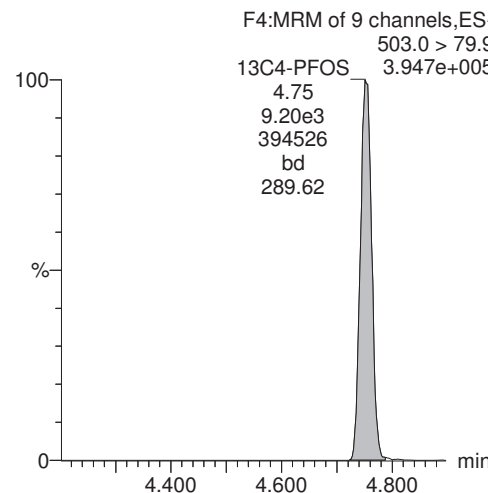
13C4-PFOS



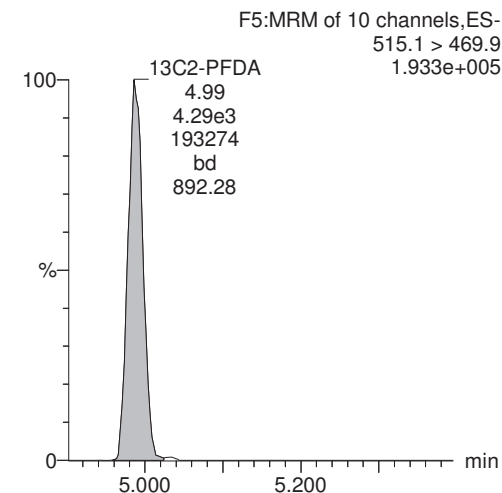
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-4.qld

Last Altered: Tuesday, December 05, 2017 13:24:29 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:25:06 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_4, Date: 05-Dec-2017, Time: 11:23:39, ID: 1701794-15 CH-AT-2FB05-1117 0.26347, Description: CH-AT-2FB05-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.15e3		0.2635	3.05				
2	2 PFOA	413 > 368.7	3.70e1	8.96e3		0.2635	4.35	4.35	0.0413	0.196	
3	3 PFOS	499 > 79.9	4.65e0	9.15e3		0.2635	4.75	4.74	0.0146	0.0461	
4	4 13C2-PFHxA	315 > 269.8	4.18e3	8.96e3	0.439	0.2635	3.41	3.40	4.67	40.3	106.2
5	5 13C2-PFDA	515.1 > 469.9	4.52e3	8.96e3	0.542	0.2635	4.98	4.98	5.04	35.3	93.0
6	6 13C2-PFOA	414.9 > 369.7	8.96e3	8.96e3	1.000	0.2635	4.41	4.35	10.0	38.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.15e3	9.15e3	1.000	0.2635	4.81	4.75	28.7	109	100.0



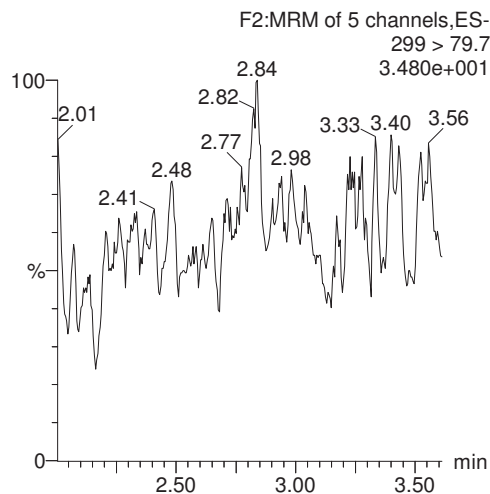
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Last Altered: Tuesday, December 05, 2017 13:24:29 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:25:06 Pacific Standard Time

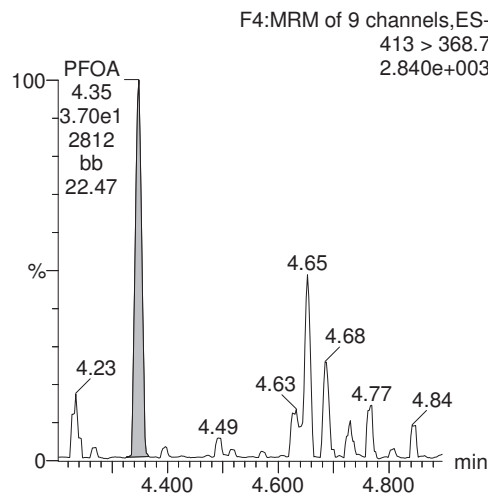
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_4, Date: 05-Dec-2017, Time: 11:23:39, ID: 1701794-15 CH-AT-2FB05-1117 0.26347, Description: CH-AT-2FB05-1117

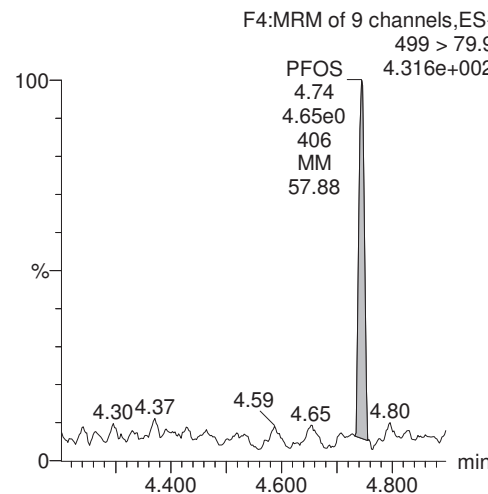
**PFBS**



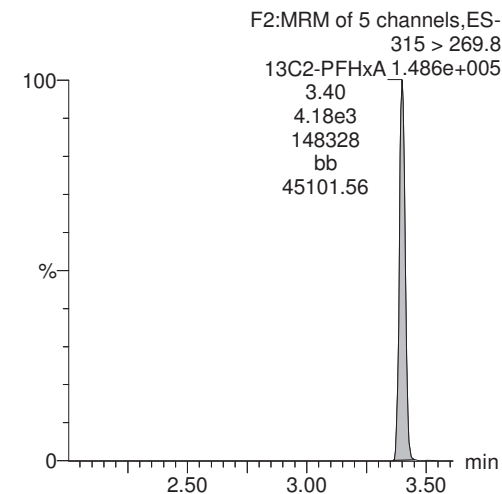
**PFOA**



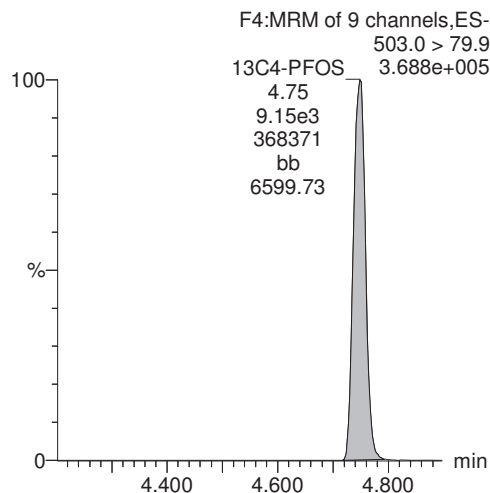
**PFOS**



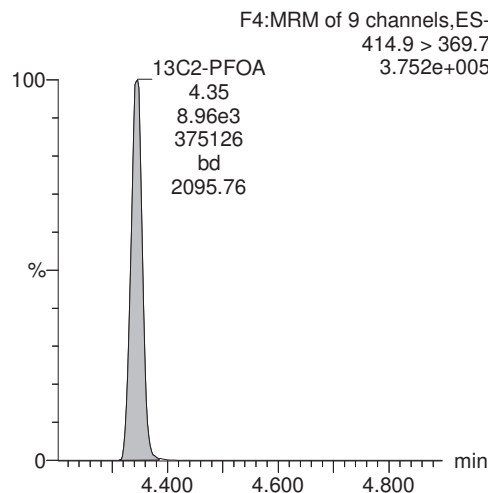
**13C2-PFHxA**



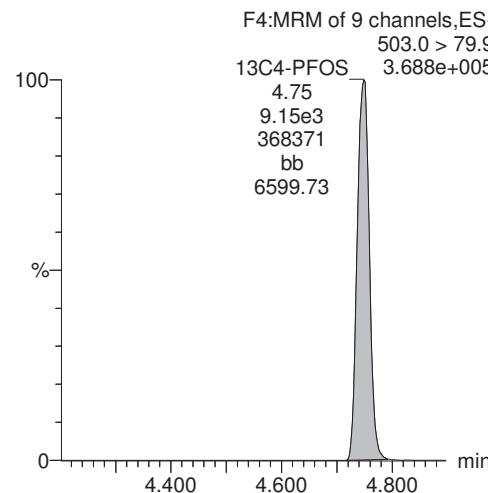
**13C4-PFOS**



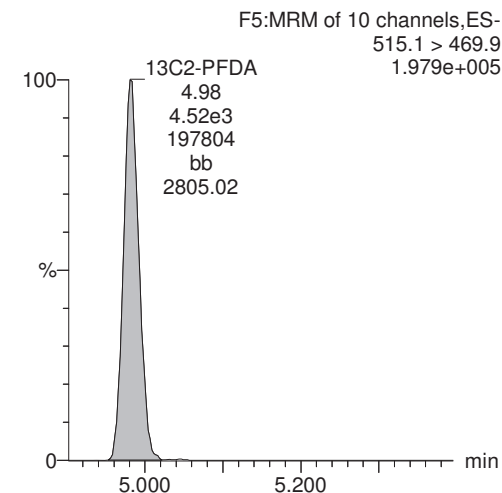
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-5.qld

Last Altered: Tuesday, December 05, 2017 13:25:51 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:26:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_5, Date: 05-Dec-2017, Time: 11:36:04, ID: 1701794-16 CH-AT-2FB06-1117 0.25956, Description: CH-AT-2FB06-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.04e4		0.2596	3.05				
2	2 PFOA	413 > 368.7	3.27e1	9.13e3		0.2596	4.34	4.34	0.0358	0.173	
3	3 PFOS	499 > 79.9		1.04e4		0.2596	4.75				
4	4 13C2-PFHxA	315 > 269.8	3.94e3	9.13e3	0.439	0.2596	3.40	3.39	4.31	37.8	98.1
5	5 13C2-PFDA	515.1 > 469.9	4.28e3	9.13e3	0.542	0.2596	4.97	4.98	4.69	33.3	86.5
6	6 13C2-PFOA	414.9 > 369.7	9.13e3	9.13e3	1.000	0.2596	4.41	4.34	10.0	38.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2596	4.81	4.75	28.7	111	100.0

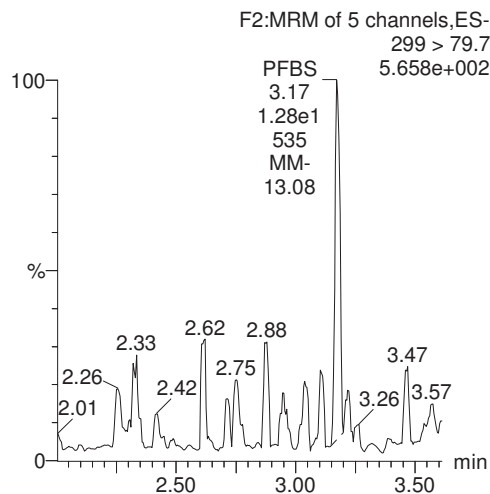
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Last Altered: Tuesday, December 05, 2017 13:25:51 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:26:11 Pacific Standard Time

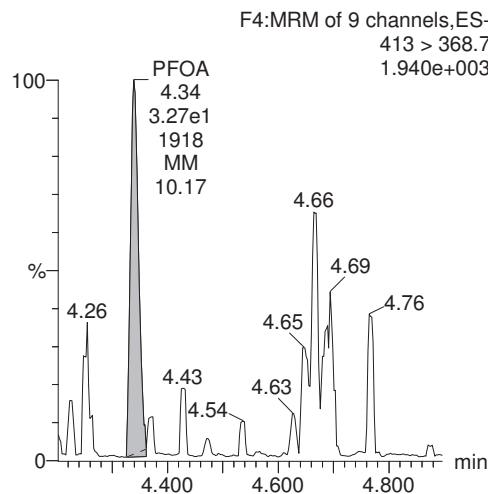
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_5, Date: 05-Dec-2017, Time: 11:36:04, ID: 1701794-16 CH-AT-2FB06-1117 0.25956, Description: CH-AT-2FB06-1117

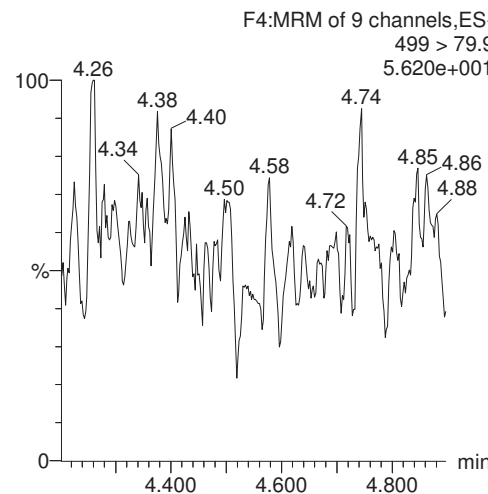
**PFBS**



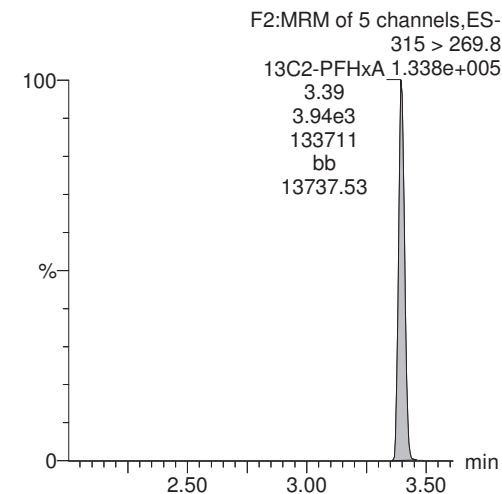
**PFOA**



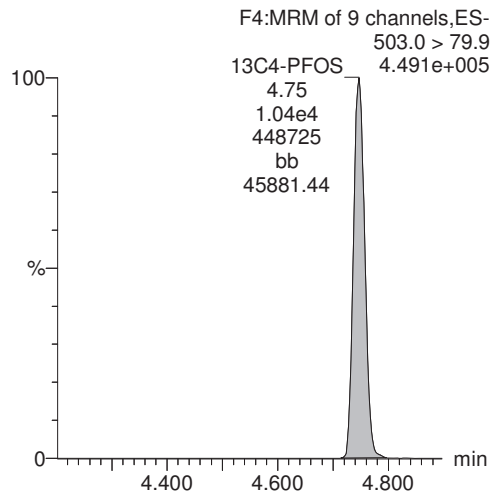
**PFOS**



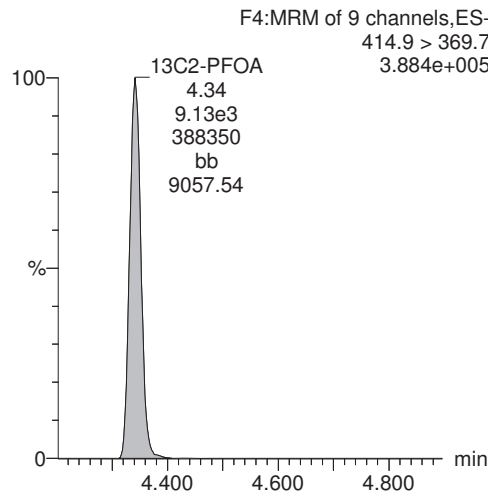
**13C2-PFHxA**



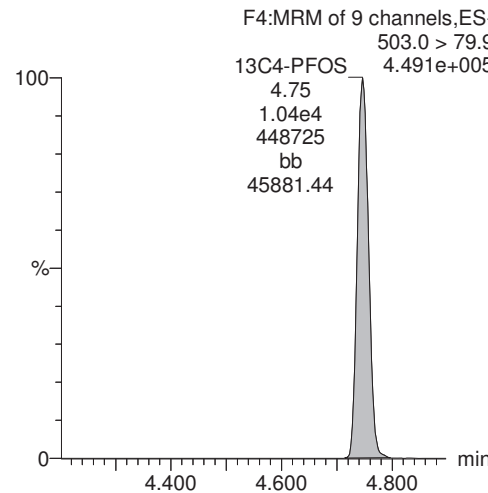
**13C4-PFOS**



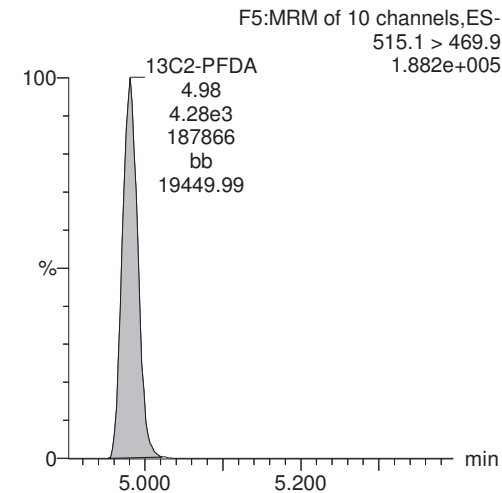
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-6.qld

Last Altered: Tuesday, December 05, 2017 13:26:41 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:27:02 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_6, Date: 05-Dec-2017, Time: 11:48:31, ID: 1701794-17 CH-AT-2FB07-1117 0.2548, Description: CH-AT-2FB07-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.04e4		0.2548	3.05				
2	2 PFOA	413 > 368.7	4.02e1	8.65e3		0.2548	4.35	4.35	0.0465	0.228	
3	3 PFOS	499 > 79.9		1.04e4		0.2548	4.75				
4	4 13C2-PFHxA	315 > 269.8	3.63e3	8.65e3	0.439	0.2548	3.41	3.40	4.20	37.5	95.6
5	5 13C2-PFDA	515.1 > 469.9	4.23e3	8.65e3	0.542	0.2548	4.98	4.98	4.89	35.4	90.2
6	6 13C2-PFOA	414.9 > 369.7	8.65e3	8.65e3	1.000	0.2548	4.41	4.35	10.0	39.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2548	4.81	4.75	28.7	113	100.0

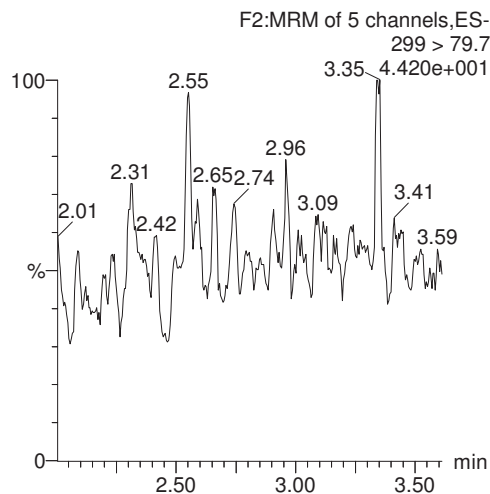
Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-6.qld

Last Altered: Tuesday, December 05, 2017 13:26:41 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:27:02 Pacific Standard Time

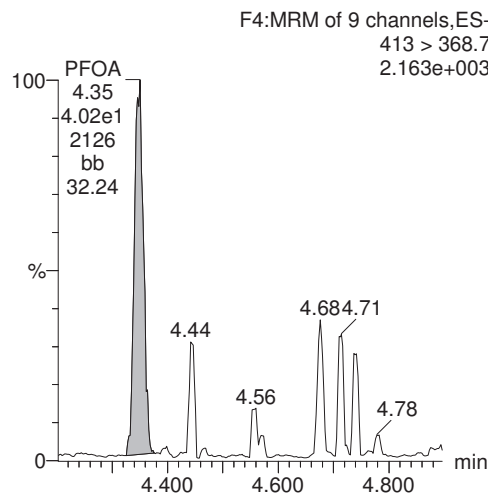
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_6, Date: 05-Dec-2017, Time: 11:48:31, ID: 1701794-17 CH-AT-2FB07-1117 0.2548, Description: CH-AT-2FB07-1117

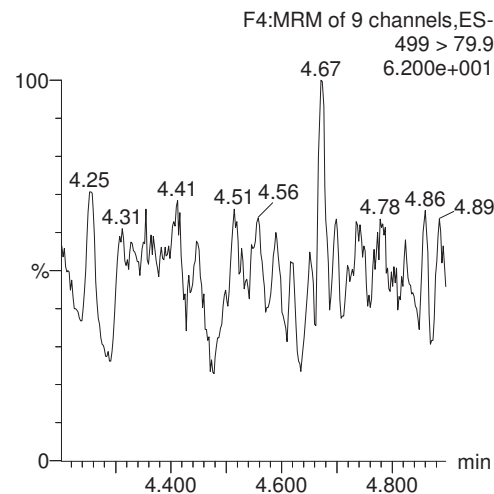
**PFBS**



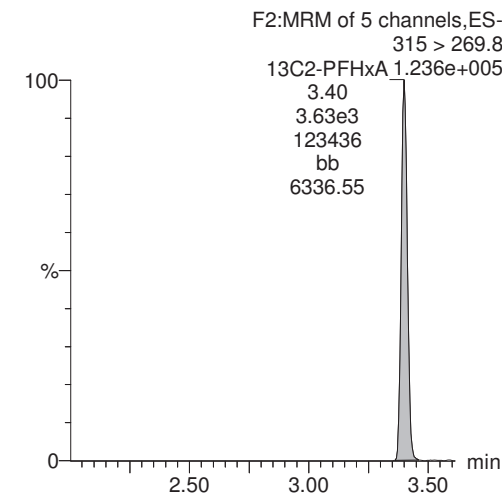
**PFOA**



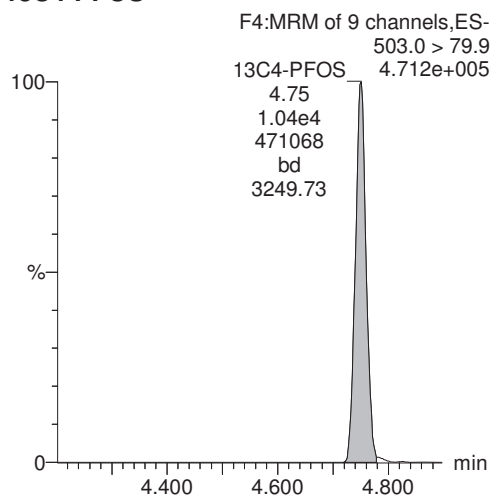
**PFOS**



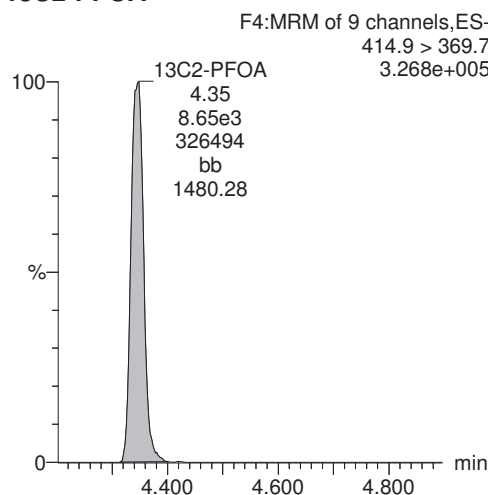
**13C2-PFHxA**



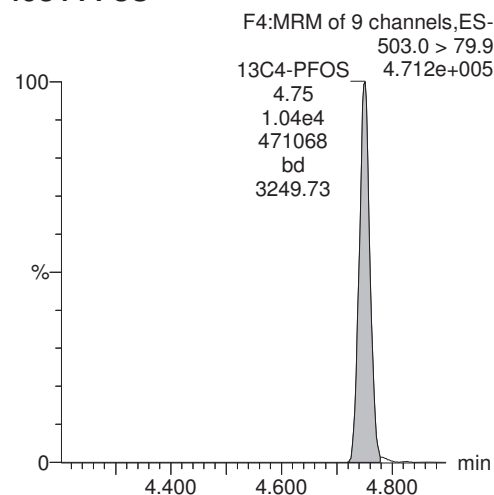
**13C4-PFOS**



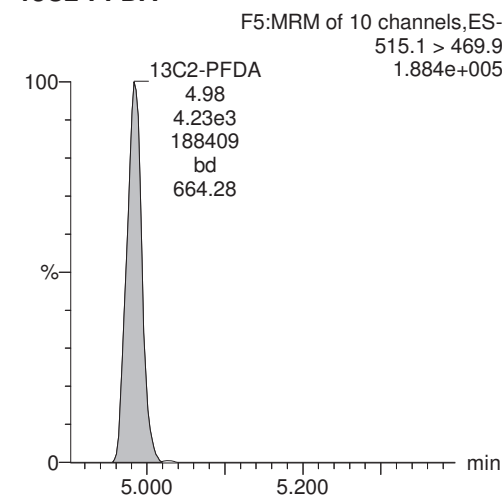
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-7.qld

Last Altered: Tuesday, December 05, 2017 13:27:34 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:28:07 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_7, Date: 05-Dec-2017, Time: 12:00:57, ID: 1701794-18 CH-AT-2FB08-1117 0.26007, Description: CH-AT-2FB08-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.09e4		0.2601	3.05				
2	2 PFOA	413 > 368.7	5.58e1	9.47e3		0.2601	4.34	4.35	0.0589	0.283	
3	3 PFOS	499 > 79.9		1.09e4		0.2601	4.75				
4	4 13C2-PFHxA	315 > 269.8	3.89e3	9.47e3	0.439	0.2601	3.40	3.40	4.10	35.9	93.4
5	5 13C2-PFDA	515.1 > 469.9	4.47e3	9.47e3	0.542	0.2601	4.97	4.98	4.72	33.4	87.0
6	6 13C2-PFOA	414.9 > 369.7	9.47e3	9.47e3	1.000	0.2601	4.41	4.34	10.0	38.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	0.2601	4.81	4.75	28.7	110	100.0

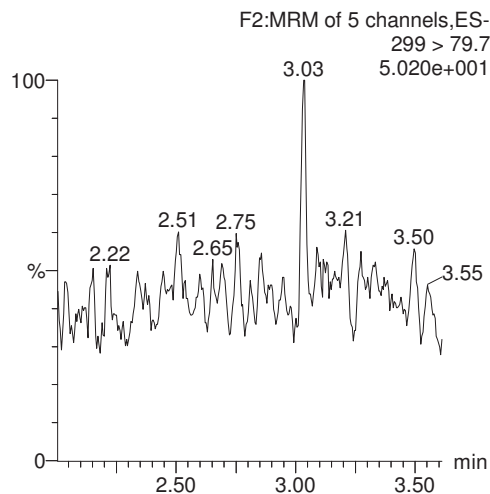
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Last Altered: Tuesday, December 05, 2017 13:27:34 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:28:07 Pacific Standard Time

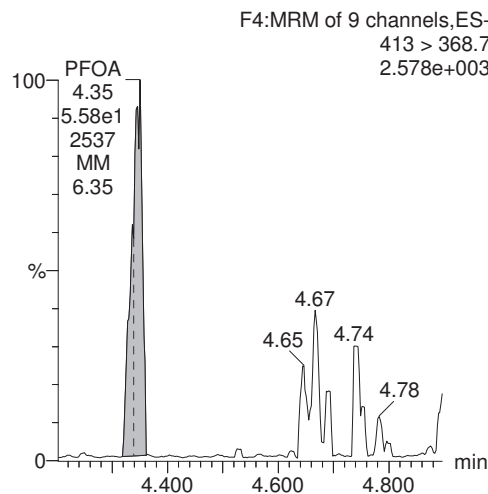
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_7, Date: 05-Dec-2017, Time: 12:00:57, ID: 1701794-18 CH-AT-2FB08-1117 0.26007, Description: CH-AT-2FB08-1117

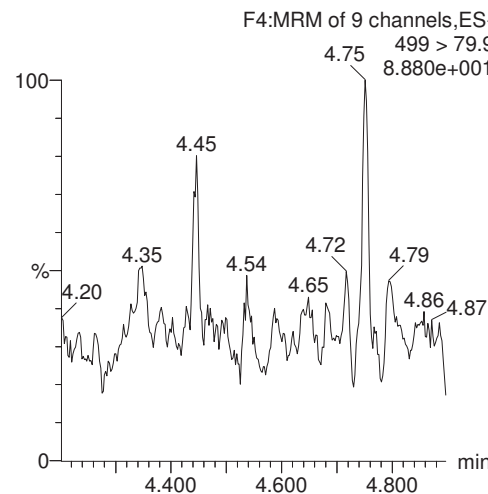
PFBS



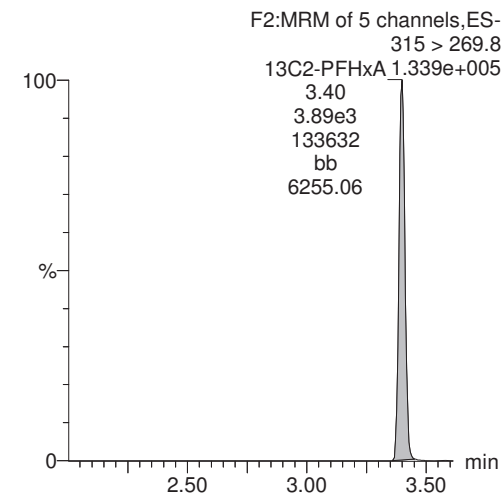
PFOA



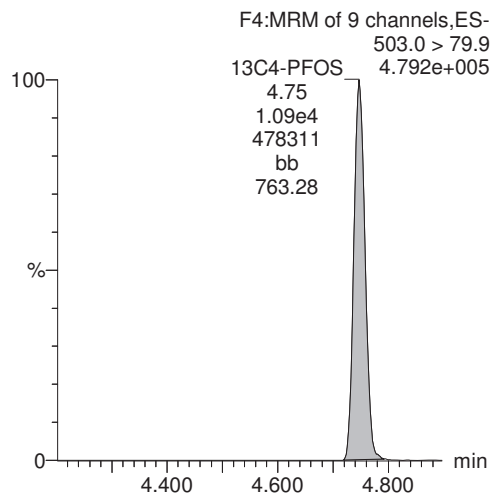
PFOS



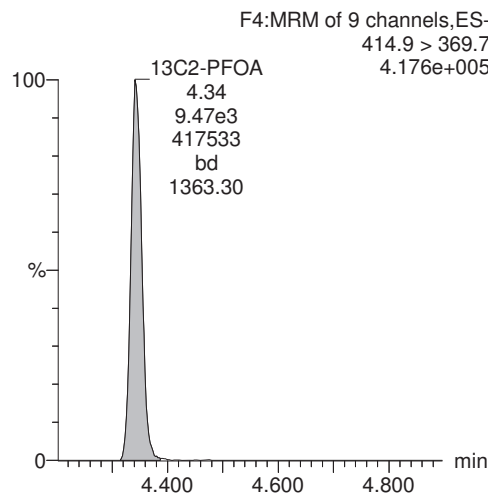
13C2-PFHxA



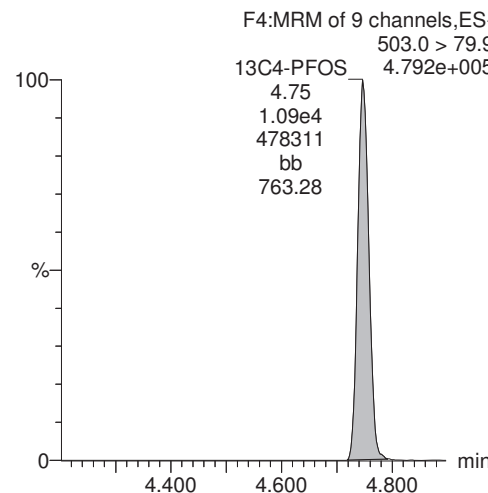
13C4-PFOS



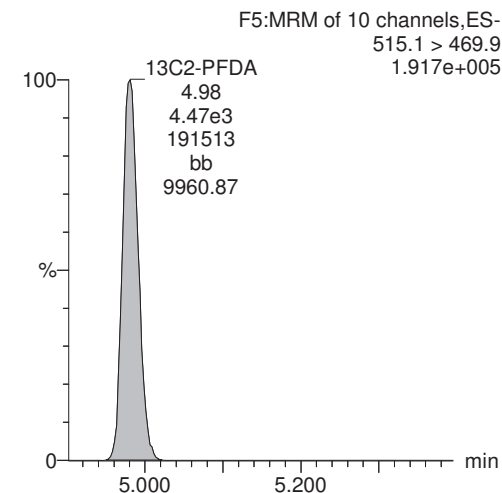
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-8.qld

Last Altered: Tuesday, December 05, 2017 13:28:41 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:28:59 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_8, Date: 05-Dec-2017, Time: 12:13:23, ID: 1701794-19 CH-AT-2FB09-1117 0.26233, Description: CH-AT-2FB09-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.15e0	1.06e4		0.2623	3.05	3.04	0.00584	0.0275	
2	2 PFOA	413 > 368.7	9.08e1	9.66e3		0.2623	4.35	4.36	0.0940	0.448	
3	3 PFOS	499 > 79.9		1.06e4		0.2623	4.75				
4	4 13C2-PFHxA	315 > 269.8	4.18e3	9.66e3	0.439	0.2623	3.41	3.40	4.32	37.5	98.5
5	5 13C2-PFDA	515.1 > 469.9	4.19e3	9.66e3	0.542	0.2623	4.98	4.98	4.33	30.5	79.9
6	6 13C2-PFOA	414.9 > 369.7	9.66e3	9.66e3	1.000	0.2623	4.41	4.35	10.0	38.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2623	4.81	4.75	28.7	109	100.0



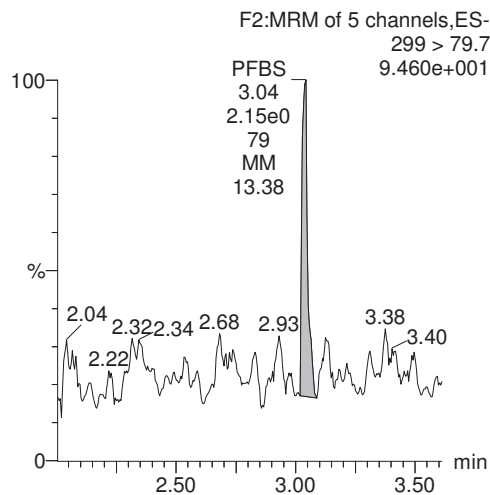
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Last Altered: Tuesday, December 05, 2017 13:28:41 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:28:59 Pacific Standard Time

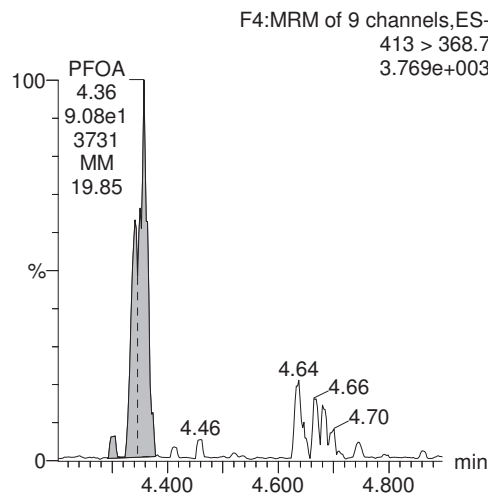
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_8, Date: 05-Dec-2017, Time: 12:13:23, ID: 1701794-19 CH-AT-2FB09-1117 0.26233, Description: CH-AT-2FB09-1117

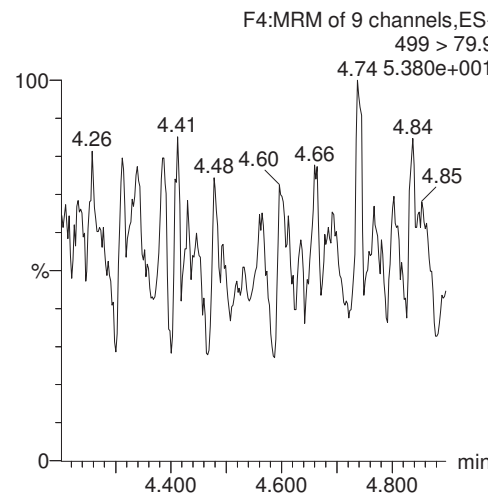
**PFBS**



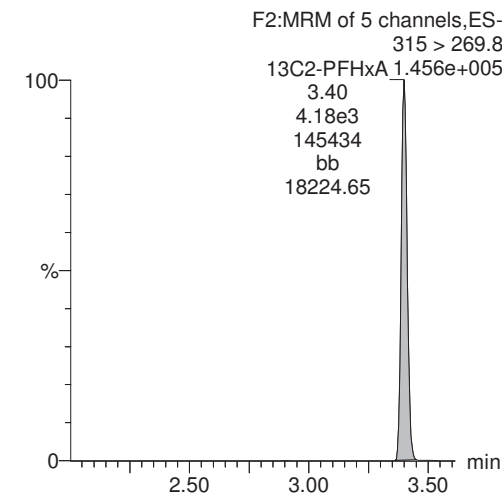
**PFOA**



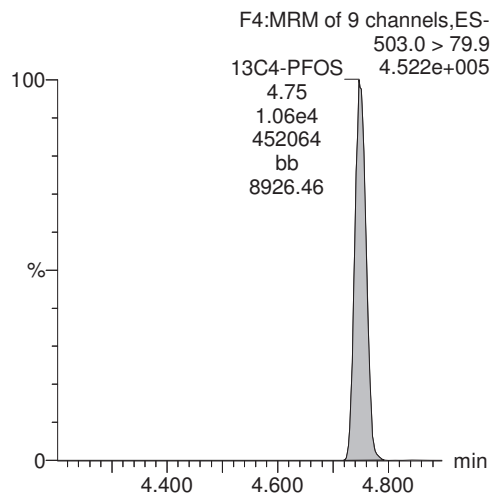
**PFOS**



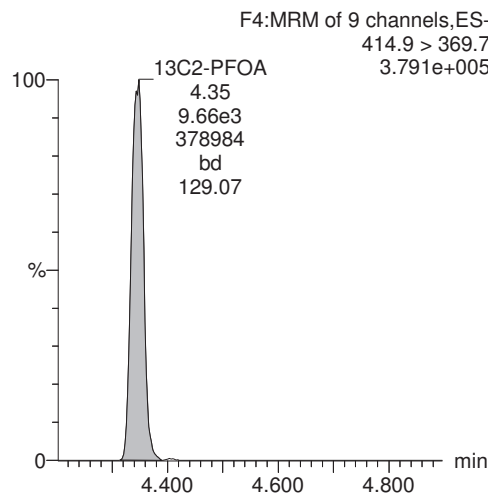
**13C2-PFHxA**



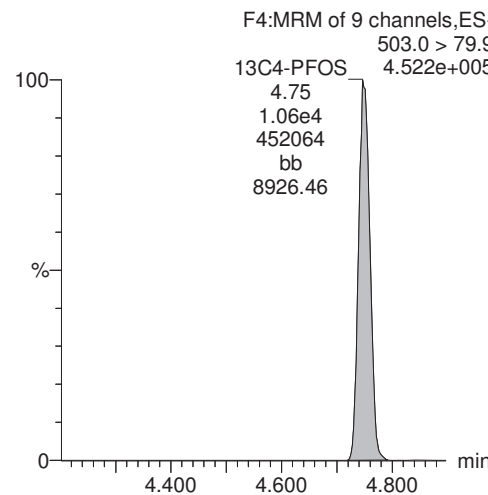
**13C4-PFOS**



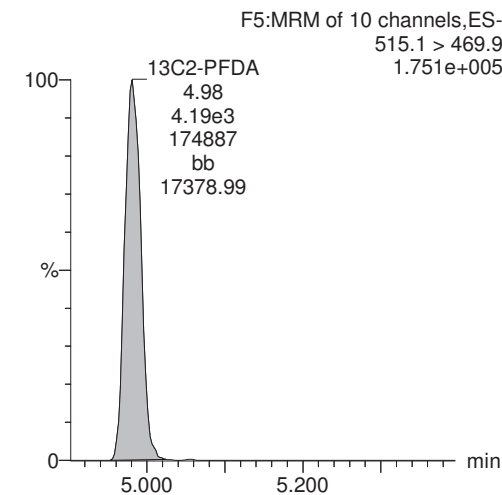
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



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

## IS Area

## Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Average	Area %
1	ST171204G2-1 PFC CS-1 537 17K3024	171204G2_Analyte	10	4.35	9439.574	9439.574	9917.414	95.18181
2	IPA	171204G2_Analyte	10				9917.414	0
3	B7L0006-BS1 LFB 0.25	171204G2_Analyte	10	4.35	8826.308	8826.308	9917.414	88.99808
4	B7L0006-BSD1 LFBD 0.25	171204G2_Analyte	10	4.35	9181.749	9181.749	9917.414	92.58209
5	IPA	171204G2_Analyte	10				9917.414	0
6	B7L0006-BLK1 LRB 0.25	171204G2_Analyte	10	4.35	9199.461	9199.461	9917.414	92.76068
7	1701794-01 CH-AT-2RW01-1117 0.2502	171204G2_Analyte	10	4.34	7872.776	7872.776	9917.414	79.38336
8	1701794-02 CH-AT-2RW02-1117 0.23231	171204G2_Analyte	10	4.35	9850.29	9850.29	9917.414	99.32317
9	1701794-03 CH-AT-2RW03-1117 0.25228	171204G2_Analyte	10	4.35	9435.516	9435.516	9917.414	95.14089
10	1701794-04 CH-AT-2RW04-1117 0.23949	171204G2_Analyte	10	4.35	9007.786	9007.786	9917.414	90.82797
11	1701794-05 CH-AT-2RW05-1117 0.25274	171204G2_Analyte	10	4.35	8475.436	8475.436	9917.414	85.46014
12	1701794-06 CH-AT-2RW06-1117 0.25357	171204G2_Analyte	10	4.35	8839.655	8839.655	9917.414	89.13266
13	1701794-07 CH-AT-2RW07-1117 0.25736	171204G2_Analyte	10	4.35	9046.756	9046.756	9917.414	91.22092
14	1701794-08 CH-AT-2RW08-1117 0.24522	171204G2_Analyte	10	4.35	7590.896	7590.896	9917.414	76.54108
15	1701794-09 CH-AT-2RW09-1117 0.25148	171204G2_Analyte	10	4.35	9010.416	9010.416	9917.414	90.85449
16	1701794-11 CH-AT-2FB01-1117 0.25942	171204G2_Analyte	10	4.35	8865.394	8865.394	9917.414	89.39219
17	1701794-12 CH-AT-2FB02-1117 0.26238	171204G2_Analyte	10	4.35	8946.191	8946.191	9917.414	90.20689
18	1701794-13 CH-AT-2FB03-1117 0.25437	171204G2_Analyte	10	4.34	8167.054	8167.054	9917.414	82.35064
19	1701794-14 CH-AT-2FB04-1117 0.26715	171204G2_Analyte	10	4.35	8246.104	8246.104	9917.414	83.14772
20	IPA	171204G2_Analyte	10				9917.414	0
21	ST171204G2-2 PFC CS3 17K3027	171204G2_Analyte	10	4.35	9463.204	9463.204	9917.414	95.42008

## Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	ST171204G2-1 PFC CS-1 537 17K3024	171204G2_Analyte	28.7	4.75	10146.2	10146.2	10735.89	94.50726
2	IPA	171204G2_Analyte	28.7				10735.89	0
3	B7L0006-BS1 LFB 0.25	171204G2_Analyte	28.7	4.75	8997.155	8997.155	10735.89	83.80446
4	B7L0006-BS1 LFB 0.25	171204G2_Analyte	28.7	4.75	9695.108	9695.108	10735.89	90.30558
5	IPA	171204G2_Analyte	28.7				10735.89	0
6	B7L0006-BLK1 LRB 0.25	171204G2_Analyte	28.7	4.75	9860.693	9860.693	10735.89	91.84793
7	1701794-01 CH-AT-2RW01-1117 0.2502	171204G2_Analyte	28.7	4.75	8585.996	8585.996	10735.89	79.9747
8	1701794-02 CH-AT-2RW02-1117 0.23231	171204G2_Analyte	28.7	4.75	10048.04	10048.04	10735.89	93.59302
9	1701794-03 CH-AT-2RW03-1117 0.25228	171204G2_Analyte	28.7	4.75	9890.638	9890.638	10735.89	92.12686
10	1701794-04 CH-AT-2RW04-1117 0.23949	171204G2_Analyte	28.7	4.75	9942.479	9942.479	10735.89	92.60973
11	1701794-05 CH-AT-2RW05-1117 0.25274	171204G2_Analyte	28.7	4.75	9450.579	9450.579	10735.89	88.0279
12	1701794-06 CH-AT-2RW06-1117 0.25357	171204G2_Analyte	28.7	4.75	9326.392	9326.392	10735.89	86.87116
13	1701794-07 CH-AT-2RW07-1117 0.25736	171204G2_Analyte	28.7	4.75	9027.743	9027.743	10735.89	84.08938
14	1701794-08 CH-AT-2RW08-1117 0.24522	171204G2_Analyte	28.7	4.75	9647.325	9647.325	10735.89	89.86051
15	1701794-09 CH-AT-2RW09-1117 0.25148	171204G2_Analyte	28.7	4.75	10390.37	10390.37	10735.89	96.78163
16	1701794-11 CH-AT-2FB01-1117 0.25942	171204G2_Analyte	28.7	4.75	9432.723	9432.723	10735.89	87.86158
17	1701794-12 CH-AT-2FB02-1117 0.26238	171204G2_Analyte	28.7	4.75	9609.752	9609.752	10735.89	89.51053
18	1701794-13 CH-AT-2FB03-1117 0.25437	171204G2_Analyte	28.7	4.75	9036.527	9036.527	10735.89	84.1712
19	1701794-14 CH-AT-2FB04-1117 0.26715	171204G2_Analyte	28.7	4.75	9198.554	9198.554	10735.89	85.6804
20	IPA	171204G2_Analyte	28.7				10735.89	0
21	ST171204G2-2 PFC CS3 17K3027	171204G2_Analyte	28.7	4.75	10228.28	10228.28	10735.89	95.2718

Compound 6: 13C2-PFOA

ST171204G2-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Average	Area %
1	ST171204G2-1 PFC CS-1 537 17K3024	171204G2_Analyte	10	4.35	9439.574	9439.574	9439.574	100
2	IPA	171204G2_Analyte	10				9439.574	0
3	B7L0006-BS1 LFB 0.25	171204G2_Analyte	10	4.35	8826.308	8826.308	9439.574	93.50324
4	B7L0006-BS1 LFB 0.25	171204G2_Analyte	10	4.35	9181.749	9181.749	9439.574	97.26868
5	IPA	171204G2_Analyte	10				9439.574	0
6	B7L0006-BLK1 LRB 0.25	171204G2_Analyte	10	4.35	9199.461	9199.461	9439.574	97.45632
7	1701794-01 CH-AT-2RW01-1117 0.2502	171204G2_Analyte	10	4.34	7872.776	7872.776	9439.574	83.40181
8	1701794-02 CH-AT-2RW02-1117 0.23231	171204G2_Analyte	10	4.35	9850.29	9850.29	9439.574	104.351

9	1701794-03	CH-AT-2RW03-1117	0.25228	171204G2_Analyte	10	4.35	9435.516	9435.516	9439.574	99.95701
10	1701794-04	CH-AT-2RW04-1117	0.23949	171204G2_Analyte	10	4.35	9007.786	9007.786	9439.574	95.42577
11	1701794-05	CH-AT-2RW05-1117	0.25274	171204G2_Analyte	10	4.35	8475.436	8475.436	9439.574	89.78621
12	1701794-06	CH-AT-2RW06-1117	0.25357	171204G2_Analyte	10	4.35	8839.655	8839.655	9439.574	93.64464
13	1701794-07	CH-AT-2RW07-1117	0.25736	171204G2_Analyte	10	4.35	9046.756	9046.756	9439.574	95.8386
14	1701794-08	CH-AT-2RW08-1117	0.24522	171204G2_Analyte	10	4.35	7590.896	7590.896	9439.574	80.41566
15	1701794-09	CH-AT-2RW09-1117	0.25148	171204G2_Analyte	10	4.35	9010.416	9010.416	9439.574	95.45363
16	1701794-11	CH-AT-2FB01-1117	0.25942	171204G2_Analyte	10	4.35	8865.394	8865.394	9439.574	93.91731
17	1701794-12	CH-AT-2FB02-1117	0.26238	171204G2_Analyte	10	4.35	8946.191	8946.191	9439.574	94.77325
18	1701794-13	CH-AT-2FB03-1117	0.25437	171204G2_Analyte	10	4.34	8167.054	8167.054	9439.574	86.51931
19	1701794-14	CH-AT-2FB04-1117	0.26715	171204G2_Analyte	10	4.35	8246.104	8246.104	9439.574	87.35674
20	IPA			171204G2_Analyte	10				9439.574	0
21	ST171204G2-2	PFC CS3 17K3027		171204G2_Analyte	10	4.35	9463.204	9463.204	9439.574	100.2503

Compound 7: 13C4-PFOS

ST171204G2-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
1	ST171204G2-1 PFC CS-1 537 17K3024	171204G2_Analyte	28.7	4.75	10146.2	10146.2	10146.196	100
2	IPA	171204G2_Analyte	28.7				10146.196	0
3	B7L0006-BS1 LFB 0.25	171204G2_Analyte	28.7	4.75	8997.155	8997.155	10146.196	88.67515
4	B7L0006-BSD1 LFBD 0.25	171204G2_Analyte	28.7	4.75	9695.108	9695.108	10146.196	95.55412
5	IPA	171204G2_Analyte	28.7				10146.196	0
6	B7L0006-BLK1 LRB 0.25	171204G2_Analyte	28.7	4.75	9860.693	9860.693	10146.196	97.18611
7	1701794-01 CH-AT-2RW01-1117 0.2502	171204G2_Analyte	28.7	4.75	8585.996	8585.996	10146.196	84.62281
8	1701794-02 CH-AT-2RW02-1117 0.23231	171204G2_Analyte	28.7	4.75	10048.04	10048.04	10146.196	99.03262
9	1701794-03 CH-AT-2RW03-1117 0.25228	171204G2_Analyte	28.7	4.75	9890.638	9890.638	10146.196	97.48124
10	1701794-04 CH-AT-2RW04-1117 0.23949	171204G2_Analyte	28.7	4.75	9942.479	9942.479	10146.196	97.99218
11	1701794-05 CH-AT-2RW05-1117 0.25274	171204G2_Analyte	28.7	4.75	9450.579	9450.579	10146.196	93.14406
12	1701794-06 CH-AT-2RW06-1117 0.25357	171204G2_Analyte	28.7	4.75	9326.392	9326.392	10146.196	91.92009
13	1701794-07 CH-AT-2RW07-1117 0.25736	171204G2_Analyte	28.7	4.75	9027.743	9027.743	10146.196	88.97663
14	1701794-08 CH-AT-2RW08-1117 0.24522	171204G2_Analyte	28.7	4.75	9647.325	9647.325	10146.196	95.08317

15	1701794-09 CH-AT-2RW09-1117 0.25148	171204G2_Analyte	28.7	4.75	10390.37	10390.37	10146.196	102.4065
16	1701794-11 CH-AT-2FB01-1117 0.25942	171204G2_Analyte	28.7	4.75	9432.723	9432.723	10146.196	92.96807
17	1701794-12 CH-AT-2FB02-1117 0.26238	171204G2_Analyte	28.7	4.75	9609.752	9609.752	10146.196	94.71286
18	1701794-13 CH-AT-2FB03-1117 0.25437	171204G2_Analyte	28.7	4.75	9036.527	9036.527	10146.196	89.0632
19	1701794-14 CH-AT-2FB04-1117 0.26715	171204G2_Analyte	28.7	4.75	9198.554	9198.554	10146.196	90.66013
20	IPA	171204G2_Analyte	28.7				10146.196	0
21	ST171204G2-2 PFC CS3 17K3027	171204G2_Analyte	28.7	4.75	10228.28	10228.28	10146.196	100.809













RRF	Divisor1
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0	0.3
	1
0	0.3
0	0.3
0	0.2
0	0.3
0	0.2
0	0.3
0	0.3
0	0.3
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0	0.3
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0	0.3
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Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-2.qld

Last Altered: Tuesday, December 05, 2017 09:27:40 Pacific Standard Time

Printed: Tuesday, December 05, 2017 09:29:08 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_2, Date: 05-Dec-2017, Time: 01:26:31, ID: ST171204G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.80e2	1.01e4		1.0000	3.05	3.03	1.64	2.03	114.6
2	2 PFOA	413 > 368.7	1.74e3	9.44e3		1.0000	4.35	4.35	1.84	2.30	115.1
3	3 PFOS	499 > 79.9	7.28e2	1.01e4		1.0000	4.75	4.75	2.06	1.71	92.6
4	4 13C2-PFHxA	315 > 269.8	4.85e3	9.44e3	0.439	1.0000	3.41	3.40	5.14	11.7	117.1
5	5 13C2-PFDA	515.1 > 469.9	4.45e3	9.44e3	0.542	1.0000	4.98	4.99	4.72	8.70	87.0
6	6 13C2-PFOA	414.9 > 369.7	9.44e3	9.44e3	1.000	1.0000	4.41	4.35	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	1.0000	4.81	4.75	28.7	28.7	100.0

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Dataset: Untitled

Last Altered: Tuesday, December 05, 2017 09:35:45 Pacific Standard Time

Printed: Tuesday, December 05, 2017 09:36:16 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

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1	171204G2_1	IPA	05-Dec-17	01:13:49
2	171204G2_2	ST171204G2-1 PFC CS-1 537 17K3024	05-Dec-17	01:26:31
3	171204G2_3	IPA	05-Dec-17	01:38:56
4	171204G2_4	B7L0006-BS1 LFB 0.25	05-Dec-17	01:51:24
5	171204G2_5	B7L0006-BSD1 LFB 0.25	05-Dec-17	02:03:49
6	171204G2_6	IPA	05-Dec-17	02:16:17
7	171204G2_7	B7L0006-BLK1 LRB 0.25	05-Dec-17	02:28:44
8	171204G2_8	1701794-01 CH-AT-2RW01-1117 0.2502	05-Dec-17	02:41:10
9	171204G2_9	1701794-02 CH-AT-2RW02-1117 0.23231	05-Dec-17	02:53:39
10	171204G2_10	1701794-03 CH-AT-2RW03-1117 0.25228	05-Dec-17	03:06:07
11	171204G2_11	1701794-04 CH-AT-2RW04-1117 0.23949	05-Dec-17	03:18:31
12	171204G2_12	1701794-05 CH-AT-2RW05-1117 0.25274	05-Dec-17	03:30:56
13	171204G2_13	1701794-06 CH-AT-2RW06-1117 0.25357	05-Dec-17	03:43:20
14	171204G2_14	1701794-07 CH-AT-2RW07-1117 0.25736	05-Dec-17	03:55:46
15	171204G2_15	1701794-08 CH-AT-2RW08-1117 0.24522	05-Dec-17	04:08:12
16	171204G2_16	1701794-09 CH-AT-2RW09-1117 0.25148	05-Dec-17	04:20:40
17	171204G2_17	1701794-11 CH-AT-2FB01-1117 0.25942	05-Dec-17	04:33:07
18	171204G2_18	1701794-12 CH-AT-2FB02-1117 0.26238	05-Dec-17	04:45:35
19	171204G2_19	1701794-13 CH-AT-2FB03-1117 0.25437	05-Dec-17	04:57:59
20	171204G2_20	1701794-14 CH-AT-2FB04-1117 0.26715	05-Dec-17	05:10:22
21	171204G2_21	IPA	05-Dec-17	05:22:47
22	171204G2_22	ST171204G2-2 PFC CS3 17K3027	05-Dec-17	05:35:15
23	171204G2_23	IPA	05-Dec-17	05:47:43

## LC Calibration Standards Review Checklist Q1

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
Calibration ID: <u>ST17120462-1</u> <b>L M H</b>	<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"/>	<u>NA</u> <input type="checkbox"/>
Calibration ID: <u>-2</u> <b>L M H</b>	<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"/>	<input type="checkbox"/>
Calibration ID: _____ <b>L M H</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Calibration ID: _____ <b>L M H</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Full Mass Cal. Date: 4/5/17

Run Log Present:

# of Samples per Sequence Checked:

Reviewed By: JFA, 12/05/2017  
Initials/Date

Comments: DW-L3

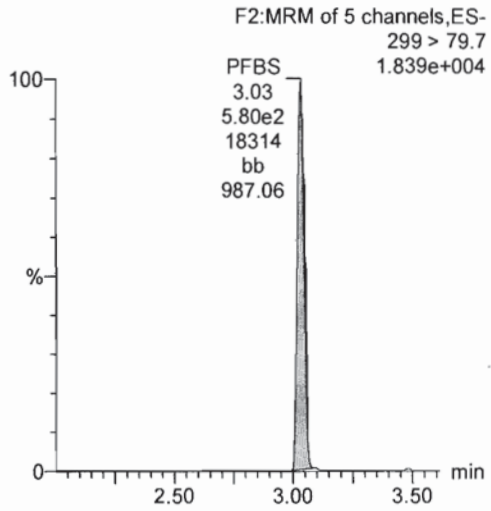
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Last Altered: Tuesday, December 05, 2017 09:27:40 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 09:29:08 Pacific Standard Time

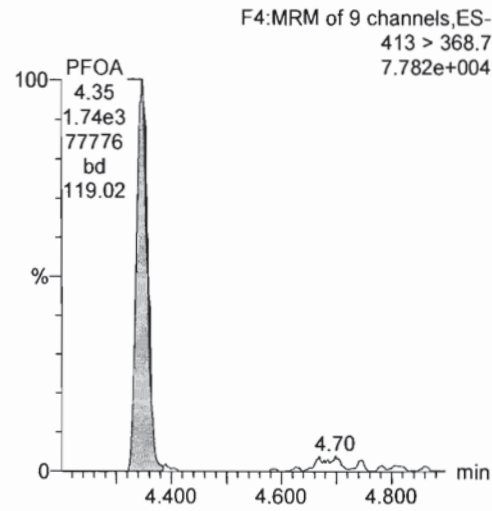
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Name: 171204G2\_2, Date: 05-Dec-2017, Time: 01:26:31, ID: ST171204G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

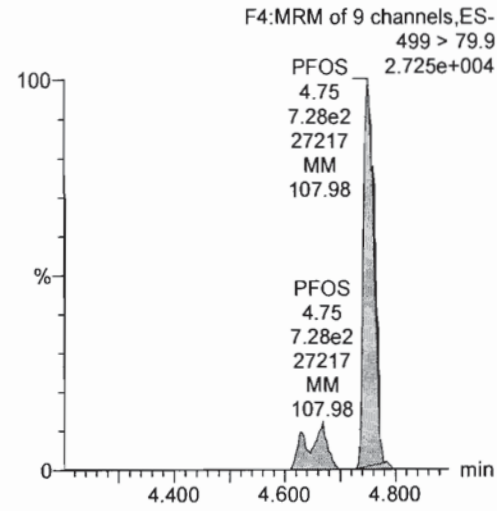
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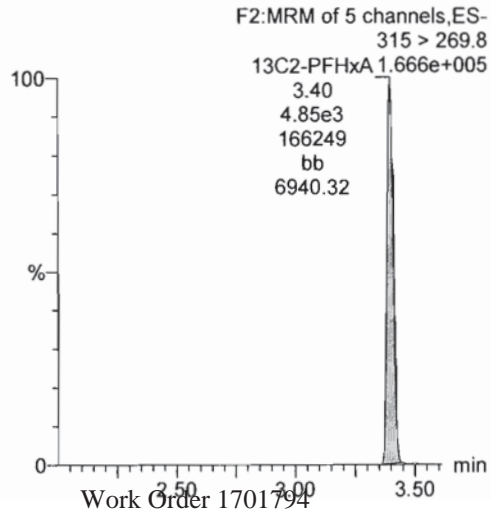
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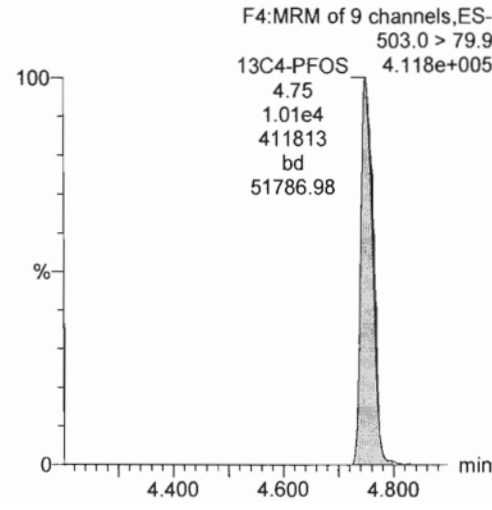
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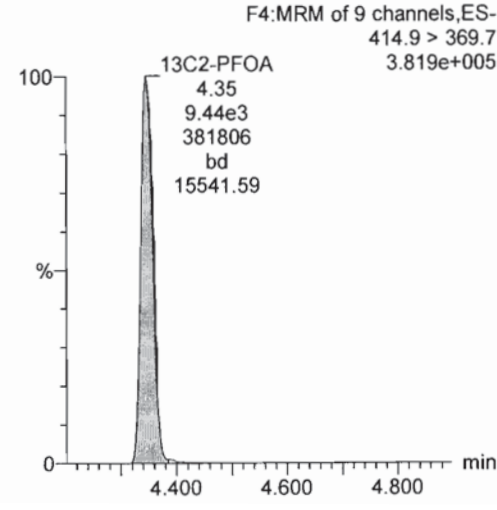
13C2-PFHxA



13C4-PFOS



13C2-PFOA





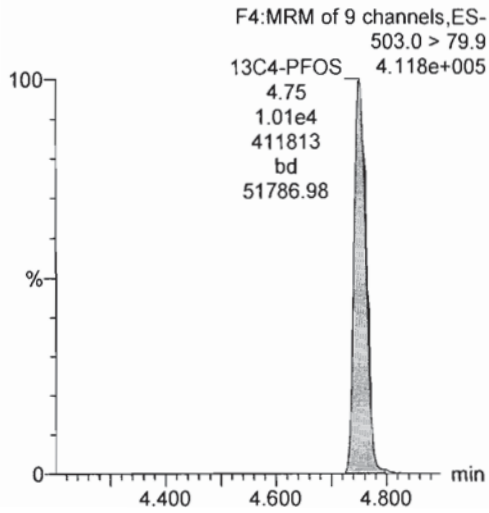
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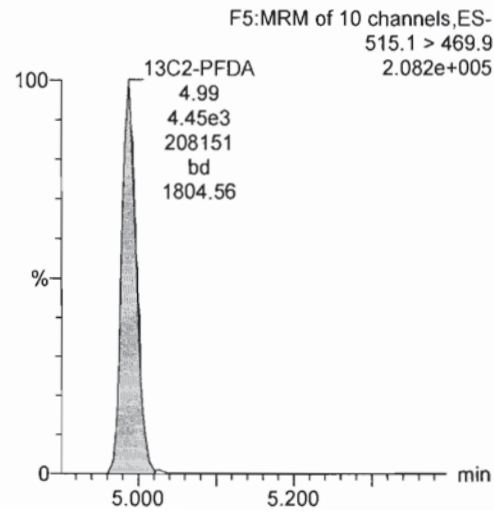
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Name: 171204G2\_2, Date: 05-Dec-2017, Time: 01:26:31, ID: ST171204G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-22.qld

Last Altered: Tuesday, December 05, 2017 09:32:41 Pacific Standard Time

Printed: Tuesday, December 05, 2017 09:33:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171204G2\_22, Date: 05-Dec-2017, Time: 05:35:15, ID: ST171204G2-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.22e4	1.02e4		1.0000	3.05	3.03	34.3	42.4	95.9
2	2 PFOA	413 > 368.7	3.74e4	9.46e3		1.0000	4.35	4.35	39.6	49.4	98.8
3	3 PFOS	499 > 79.9	1.87e4	1.02e4		1.0000	4.75	4.75	52.4	43.5	94.2
4	4 13C2-PFHxA	315 > 269.8	4.68e3	9.46e3	0.439	1.0000	3.41	3.40	4.95	11.3	112.6
5	5 13C2-PFDA	515.1 > 469.9	4.76e3	9.46e3	0.542	1.0000	4.98	4.99	5.03	9.27	92.7
6	6 13C2-PFOA	414.9 > 369.7	9.46e3	9.46e3	1.000	1.0000	4.41	4.35	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	1.0000	4.81	4.75	28.7	28.7	100.0

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Dataset: Untitled

Last Altered: Tuesday, December 05, 2017 09:35:45 Pacific Standard Time

Printed: Tuesday, December 05, 2017 09:36:16 Pacific Standard Time

Compound name: PFOA

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2	171204G2_2	ST171204G2-1 PFC CS-1 537 17K3024	05-Dec-17	01:26:31
3	171204G2_3	IPA	05-Dec-17	01:38:56
4	171204G2_4	B7L0006-BS1 LFB 0.25	05-Dec-17	01:51:24
5	171204G2_5	B7L0006-BS1 LFB 0.25	05-Dec-17	02:03:49
6	171204G2_6	IPA	05-Dec-17	02:16:17
7	171204G2_7	B7L0006-BLK1 LRB 0.25	05-Dec-17	02:28:44
8	171204G2_8	1701794-01 CH-AT-2RW01-1117 0.2502	05-Dec-17	02:41:10
9	171204G2_9	1701794-02 CH-AT-2RW02-1117 0.23231	05-Dec-17	02:53:39
10	171204G2_10	1701794-03 CH-AT-2RW03-1117 0.25228	05-Dec-17	03:06:07
11	171204G2_11	1701794-04 CH-AT-2RW04-1117 0.23949	05-Dec-17	03:18:31
12	171204G2_12	1701794-05 CH-AT-2RW05-1117 0.25274	05-Dec-17	03:30:56
13	171204G2_13	1701794-06 CH-AT-2RW06-1117 0.25357	05-Dec-17	03:43:20
14	171204G2_14	1701794-07 CH-AT-2RW07-1117 0.25736	05-Dec-17	03:55:46
15	171204G2_15	1701794-08 CH-AT-2RW08-1117 0.24522	05-Dec-17	04:08:12
16	171204G2_16	1701794-09 CH-AT-2RW09-1117 0.25148	05-Dec-17	04:20:40
17	171204G2_17	1701794-11 CH-AT-2FB01-1117 0.25942	05-Dec-17	04:33:07
18	171204G2_18	1701794-12 CH-AT-2FB02-1117 0.26238	05-Dec-17	04:45:35
19	171204G2_19	1701794-13 CH-AT-2FB03-1117 0.25437	05-Dec-17	04:57:59
20	171204G2_20	1701794-14 CH-AT-2FB04-1117 0.26715	05-Dec-17	05:10:22
21	171204G2_21	IPA	05-Dec-17	05:22:47
22	171204G2_22	ST171204G2-2 PFC CS3 17K3027	05-Dec-17	05:35:15
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Last Altered: Tuesday, December 05, 2017 09:32:41 Pacific Standard Time

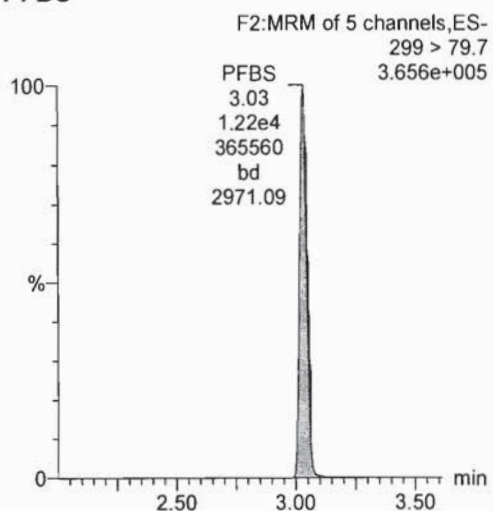
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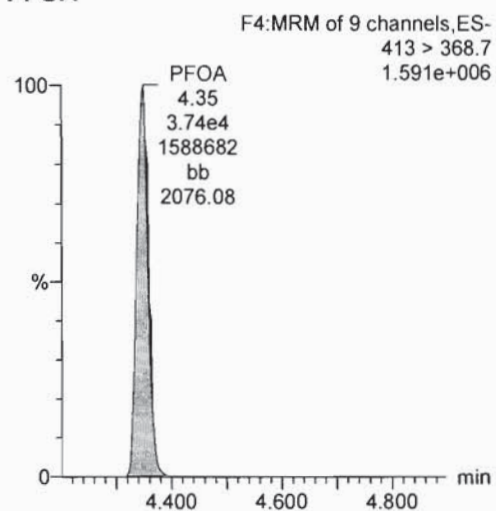
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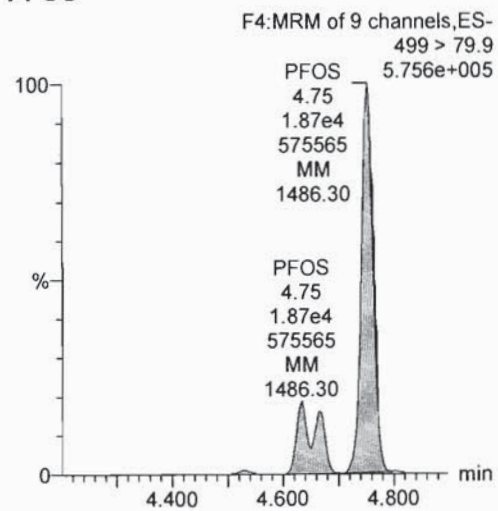
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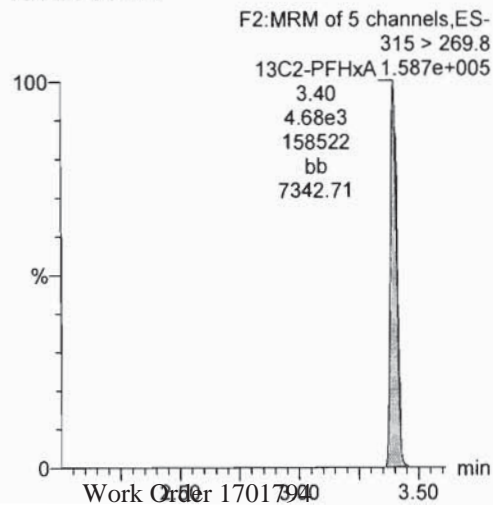
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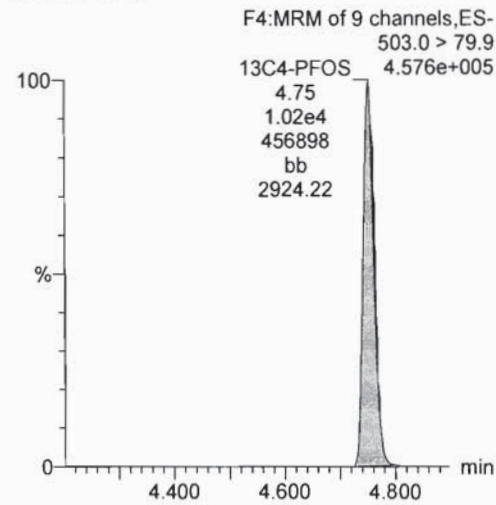
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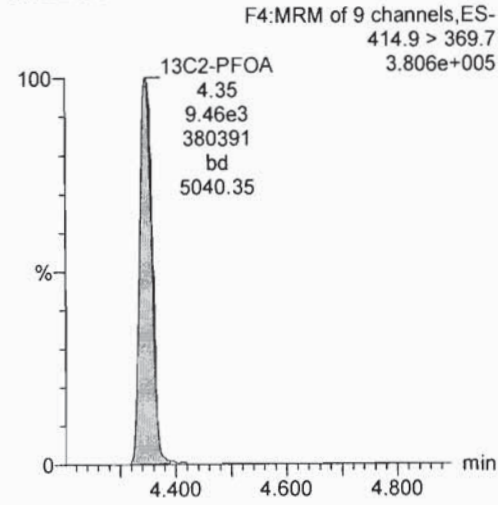
13C2-PFHxA



13C4-PFOS



13C2-PFOA



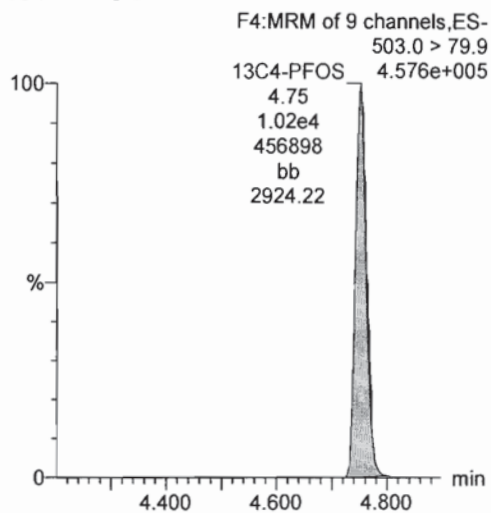
Dataset: U:\G1.PRO\Results\2017\171204G2\1701204G2-22.qld

Last Altered: Tuesday, December 05, 2017 09:32:41 Pacific Standard Time

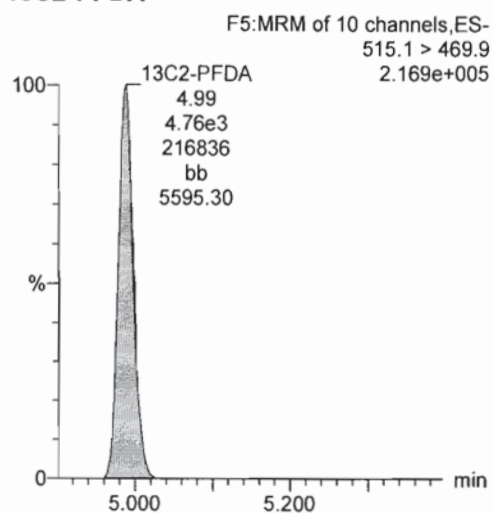
Printed: Tuesday, December 05, 2017 09:33:54 Pacific Standard Time

Name: 171204G2\_22, Date: 05-Dec-2017, Time: 05:35:15, ID: ST171204G2-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



## IS AREA

## Ical

## Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	ICAL AREA	AREA %
1	ST171205G2-1 PFC CS-1 537 17K3024	171205G2_Analyte	10	4.34	11285.04	11285.04	9917.414	113.7902
2	IPA	171205G2_Analyte	10	4.36	5.963	5.963	9917.414	0.060127
3	1701794-15 CH-AT-2FB05-1117 0.26347	171205G2_Analyte	10	4.35	8962.571	8962.571	9917.414	90.37206
4	1701794-16 CH-AT-2FB06-1117 0.25956	171205G2_Analyte	10	4.34	9130.98	9130.98	9917.414	92.07017
5	1701794-17 CH-AT-2FB07-1117 0.2548	171205G2_Analyte	10	4.35	8648.967	8648.967	9917.414	87.2099
6	1701794-18 CH-AT-2FB08-1117 0.26007	171205G2_Analyte	10	4.34	9470.994	9470.994	9917.414	95.49862
7	1701794-19 CH-AT-2FB09-1117 0.26233	171205G2_Analyte	10	4.35	9658.069	9658.069	9917.414	97.38495
8	IPA	171205G2_Analyte	10				9917.414	0
9	ST171205G2-2 PFC CS3 17K3027	171205G2_Analyte	10	4.34	10757.54	10757.54	9917.414	108.4713

## Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	ICAL AREA	AREA %
1	ST171205G2-1 PFC CS-1 537 17K3024	171205G2_Analyte	28.7	4.75	12205.63	12205.63	10735.89	113.69
2	IPA	171205G2_Analyte	28.7				10735.89	0
3	1701794-15 CH-AT-2FB05-1117 0.26347	171205G2_Analyte	28.7	4.75	9147.756	9147.756	10735.89	85.20724
4	1701794-16 CH-AT-2FB06-1117 0.25956	171205G2_Analyte	28.7	4.75	10401.63	10401.63	10735.89	96.88651
5	1701794-17 CH-AT-2FB07-1117 0.2548	171205G2_Analyte	28.7	4.75	10363.51	10363.51	10735.89	96.53143
6	1701794-18 CH-AT-2FB08-1117 0.26007	171205G2_Analyte	28.7	4.75	10932.67	10932.67	10735.89	101.833
7	1701794-19 CH-AT-2FB09-1117 0.26233	171205G2_Analyte	28.7	4.75	10568.94	10568.94	10735.89	98.44496
8	IPA	171205G2_Analyte	28.7				10735.89	0
9	ST171205G2-2 PFC CS3 17K3027	171205G2_Analyte	28.7	4.74	12119.5	12119.5	10735.89	112.8877

## CCAL

## Compound 6: 13C2-PFOA

ST171205G2-1 PFC CS-1 537 17K3024



ID	Name	Type	Std. Conc	RT	Area	IS Area	CCAL AREA	AREA %
1	ST171205G2-1 PFC CS-1 537 17K3024	171205G2_Analyte	10	4.34	11285.04	11285.04	11285.043	100
2	IPA	171205G2_Analyte	10	4.36	5.963	5.963	11285.043	0.05284
3	1701794-15 CH-AT-2FB05-1117 0.26347	171205G2_Analyte	10	4.35	8962.571	8962.571	11285.043	79.41991
4	1701794-16 CH-AT-2FB06-1117 0.25956	171205G2_Analyte	10	4.34	9130.98	9130.98	11285.043	80.91223
5	1701794-17 CH-AT-2FB07-1117 0.2548	171205G2_Analyte	10	4.35	8648.967	8648.967	11285.043	76.64098
6	1701794-18 CH-AT-2FB08-1117 0.26007	171205G2_Analyte	10	4.34	9470.994	9470.994	11285.043	83.92519
7	1701794-19 CH-AT-2FB09-1117 0.26233	171205G2_Analyte	10	4.35	9658.069	9658.069	11285.043	85.58292
8	IPA	171205G2_Analyte	10				11285.043	0
9	ST171205G2-2 PFC CS3 17K3027	171205G2_Analyte	10	4.34	10757.54	10757.54	11285.043	95.32568

Compound 7: 13C4-PFOS

ST171205G2-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	CCAL AREA	AREA %
1	ST171205G2-1 PFC CS-1 537 17K3024	171205G2_Analyte	28.7	4.75	12205.63	12205.63	12205.629	100
2	IPA	171205G2_Analyte	28.7				12205.629	0
3	1701794-15 CH-AT-2FB05-1117 0.26347	171205G2_Analyte	28.7	4.75	9147.756	9147.756	12205.629	74.94703
4	1701794-16 CH-AT-2FB06-1117 0.25956	171205G2_Analyte	28.7	4.75	10401.63	10401.63	12205.629	85.21993
5	1701794-17 CH-AT-2FB07-1117 0.2548	171205G2_Analyte	28.7	4.75	10363.51	10363.51	12205.629	84.90761
6	1701794-18 CH-AT-2FB08-1117 0.26007	171205G2_Analyte	28.7	4.75	10932.67	10932.67	12205.629	89.57075
7	1701794-19 CH-AT-2FB09-1117 0.26233	171205G2_Analyte	28.7	4.75	10568.94	10568.94	12205.629	86.59073
8	IPA	171205G2_Analyte	28.7				12205.629	0
9	ST171205G2-2 PFC CS3 17K3027	171205G2_Analyte	28.7	4.74	12119.5	12119.5	12205.629	99.29435

Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-2.qld

Last Altered: Tuesday, December 05, 2017 11:07:41 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:19:45 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_2, Date: 05-Dec-2017, Time: 10:58:47, ID: ST171205G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	6.15e2	1.22e4		1.0000	3.05	3.03	1.45	1.79	101.0
2	2 PFOA	413 > 368.7	2.00e3	1.13e4		1.0000	4.34	4.34	1.77	2.22	110.9
3	3 PFOS	499 > 79.9	8.41e2	1.22e4		1.0000	4.75	4.75	1.98	1.64	88.8
4	4 13C2-PFHxA	315 > 269.8	5.00e3	1.13e4	0.439	1.0000	3.40	3.39	4.43	10.1	100.9
5	5 13C2-PFDA	515.1 > 469.9	5.61e3	1.13e4	0.542	1.0000	4.97	4.98	4.98	9.17	91.7
6	6 13C2-PFOA	414.9 > 369.7	1.13e4	1.13e4	1.000	1.0000	4.41	4.34	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.22e4	1.22e4	1.000	1.0000	4.81	4.75	28.7	28.7	100.0

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Dataset: Untitled

Last Altered: Tuesday, December 05, 2017 13:22:13 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:22:38 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171205G2_1	IPA	05-Dec-17	10:46:20
2	171205G2_2	ST171205G2-1 PFC CS-1 537 17K3024	05-Dec-17	10:58:47
3	171205G2_3	IPA	05-Dec-17	11:11:12
4	171205G2_4	1701794-15 CH-AT-2FB05-1117 0.26347	05-Dec-17	11:23:39
5	171205G2_5	1701794-16 CH-AT-2FB06-1117 0.25956	05-Dec-17	11:36:04
6	171205G2_6	1701794-17 CH-AT-2FB07-1117 0.2548	05-Dec-17	11:48:31
7	171205G2_7	1701794-18 CH-AT-2FB08-1117 0.26007	05-Dec-17	12:00:57
8	171205G2_8	1701794-19 CH-AT-2FB09-1117 0.26233	05-Dec-17	12:13:23
9	171205G2_9	IPA	05-Dec-17	12:25:51
10	171205G2_10	ST171205G2-2 PFC CS3 17K3027	05-Dec-17	12:38:18
11	171205G2_11	IPA	05-Dec-17	12:50:43

## LC Calibration Standards Review Checklist DL

Calibration ID:	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
ST17120562-1 (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"/>	<u>NA</u> <input type="checkbox"/>
<u>        </u> -2 (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"/>
Calibration ID: _____ (L M H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Calibration ID: _____ (L M H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Full Mass Cal. Date: 4/5/17

Run Log Present:

# of Samples per Sequence Checked:

Reviewed By: JA, 12/05/2017  
Initials/Date

Comments: DW -L3

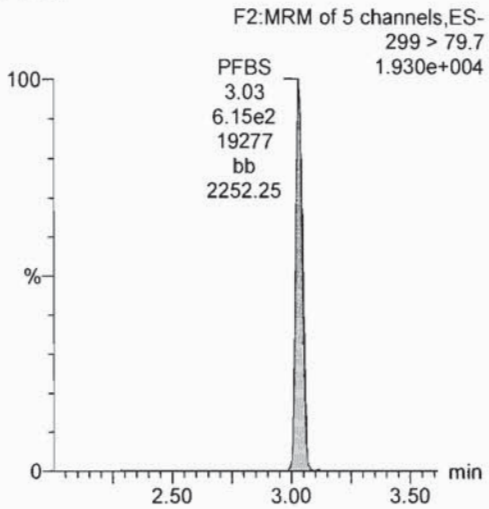
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Printed: Tuesday, December 05, 2017 13:19:45 Pacific Standard Time

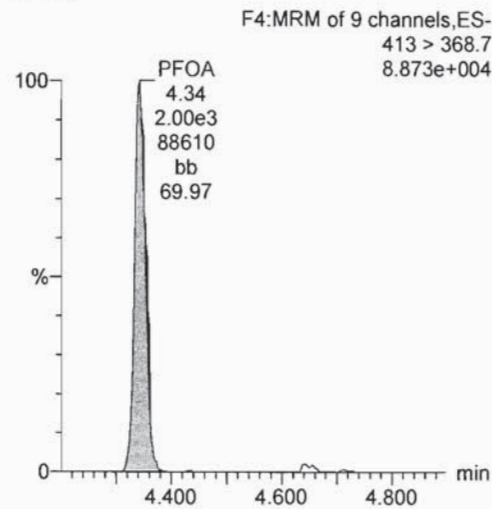
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Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_2, Date: 05-Dec-2017, Time: 10:58:47, ID: ST171205G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

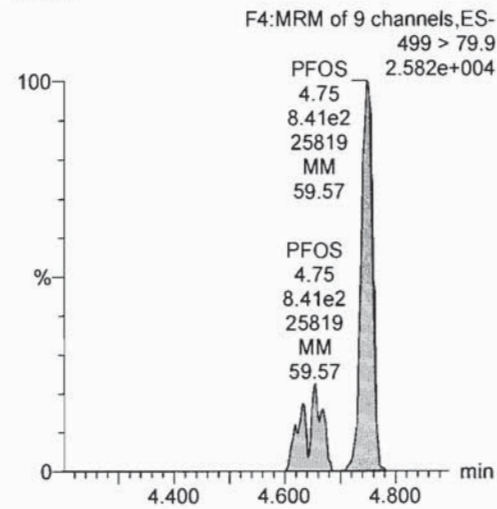
PFBS



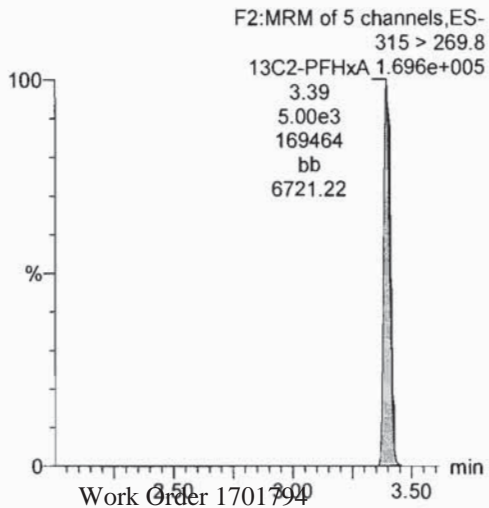
PFOA



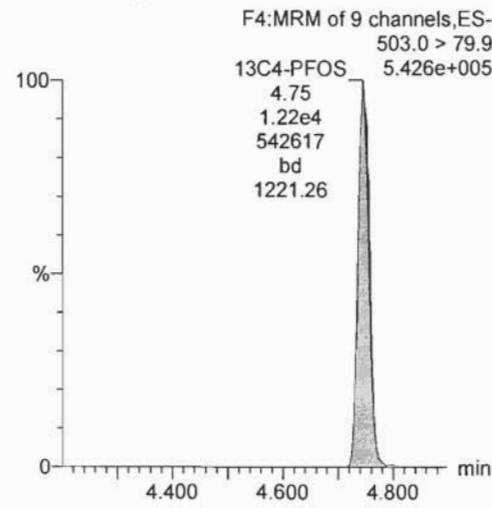
PFOS



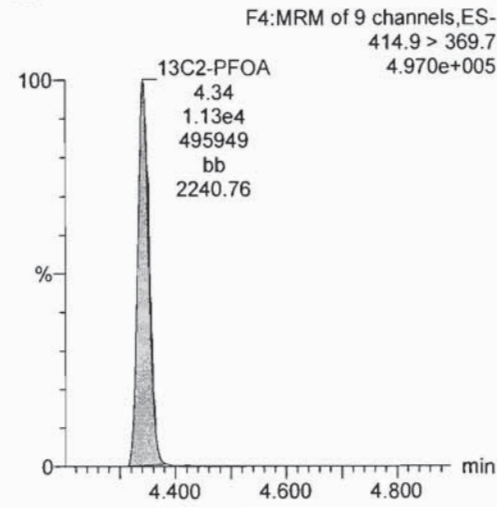
13C2-PFHxA



13C4-PFOS



13C2-PFOA



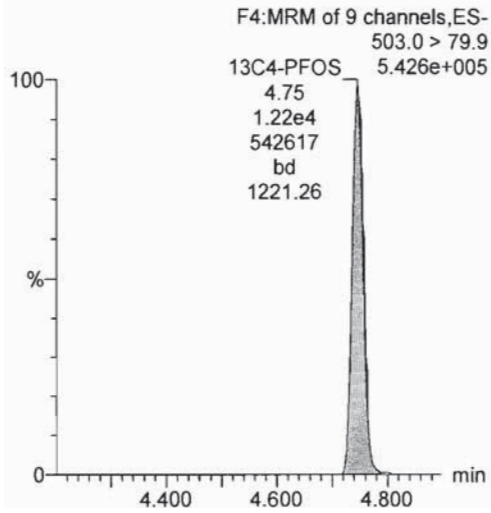
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Last Altered: Tuesday, December 05, 2017 11:07:41 Pacific Standard Time

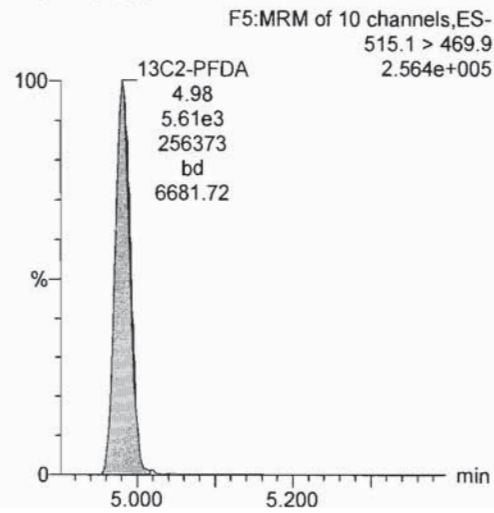
Printed: Tuesday, December 05, 2017 13:19:45 Pacific Standard Time

Name: 171205G2\_2, Date: 05-Dec-2017, Time: 10:58:47, ID: ST171205G2-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-10.qld

Last Altered: Tuesday, December 05, 2017 13:14:50 Pacific Standard Time  
Printed: Tuesday, December 05, 2017 13:19:33 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171205G2\_10, Date: 05-Dec-2017, Time: 12:38:18, ID: ST171205G2-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.35e4	1.21e4		1.0000	3.04	3.03	31.9	39.4	89.1
2	2 PFOA	413 > 368.7	4.28e4	1.08e4		1.0000	4.34	4.34	39.7	49.7	99.3
3	3 PFOS	499 > 79.9	2.18e4	1.21e4		1.0000	4.74	4.75	51.7	43.0	93.1
4	4 13C2-PFHxA	315 > 269.8	4.91e3	1.08e4	0.439	1.0000	3.40	3.39	4.56	10.4	103.8
5	5 13C2-PFDA	515.1 > 469.9	5.74e3	1.08e4	0.542	1.0000	4.97	4.98	5.34	9.84	98.4
6	6 13C2-PFOA	414.9 > 369.7	1.08e4	1.08e4	1.000	1.0000	4.41	4.34	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.21e4	1.21e4	1.000	1.0000	4.81	4.74	28.7	28.7	100.0

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Dataset: Untitled

Last Altered: Tuesday, December 05, 2017 13:22:13 Pacific Standard Time

Printed: Tuesday, December 05, 2017 13:22:38 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171205G2_1	IPA	05-Dec-17	10:46:20
2	171205G2_2	ST171205G2-1 PFC CS-1 537 17K3024	05-Dec-17	10:58:47
3	171205G2_3	IPA	05-Dec-17	11:11:12
4	171205G2_4	1701794-15 CH-AT-2FB05-1117 0.26347	05-Dec-17	11:23:39
5	171205G2_5	1701794-16 CH-AT-2FB06-1117 0.25956	05-Dec-17	11:36:04
6	171205G2_6	1701794-17 CH-AT-2FB07-1117 0.2548	05-Dec-17	11:48:31
7	171205G2_7	1701794-18 CH-AT-2FB08-1117 0.26007	05-Dec-17	12:00:57
8	171205G2_8	1701794-19 CH-AT-2FB09-1117 0.26233	05-Dec-17	12:13:23
9	171205G2_9	IPA	05-Dec-17	12:25:51
10	171205G2_10	ST171205G2-2 PFC CS3 17K3027	05-Dec-17	12:38:18
11	171205G2_11	IPA	05-Dec-17	12:50:43



Dataset: U:\G1.PRO\Results\2017\171205G2\171205G2-10.qld

Last Altered: Tuesday, December 05, 2017 13:14:50 Pacific Standard Time

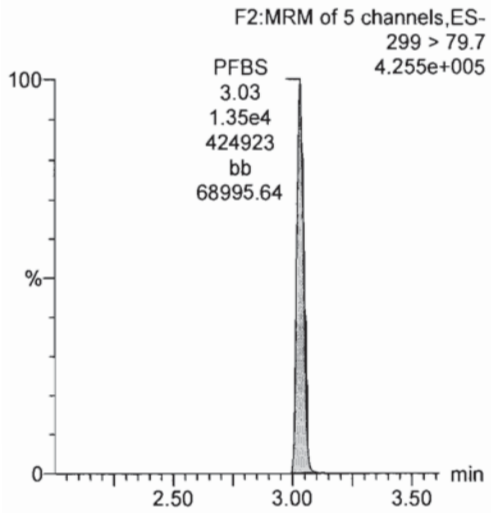
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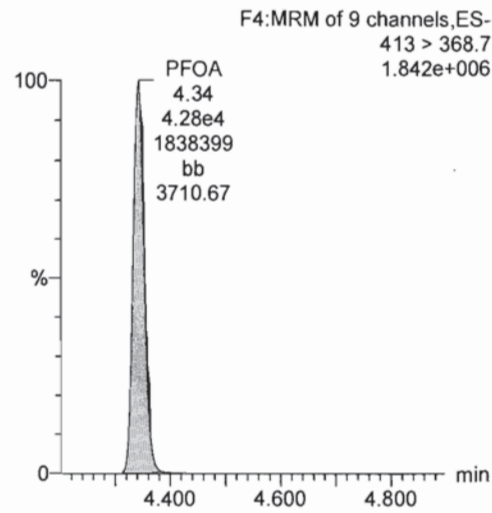
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Name: 171205G2\_10, Date: 05-Dec-2017, Time: 12:38:18, ID: ST171205G2-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

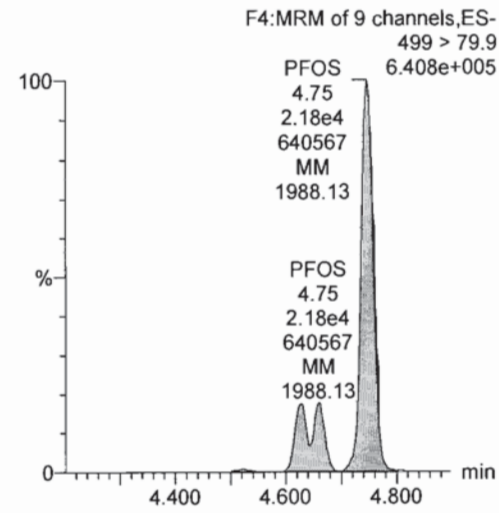
**PFBS**



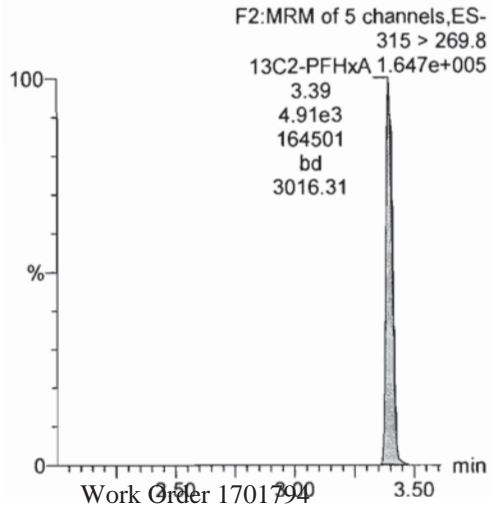
**PFOA**



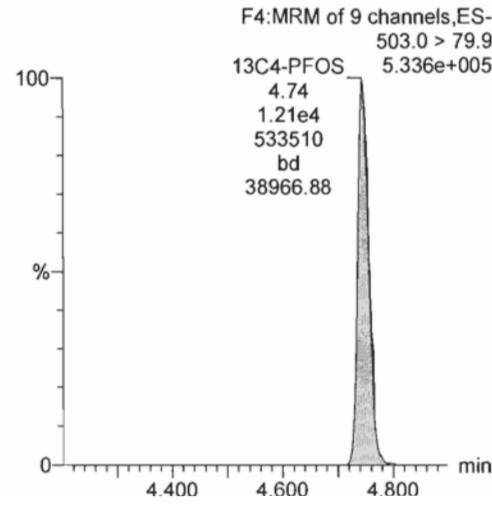
**PFOS**



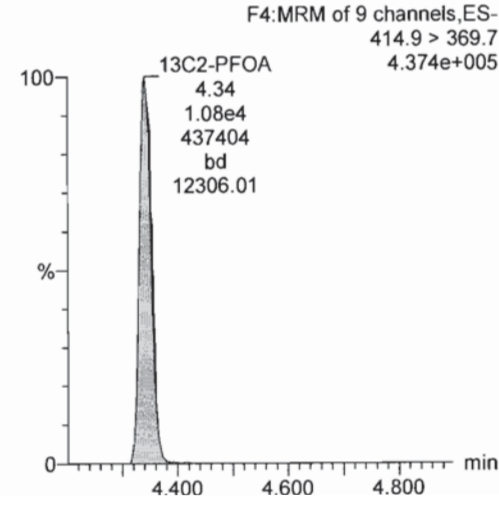
**13C2-PFHxA**



**13C4-PFOS**



**13C2-PFOA**



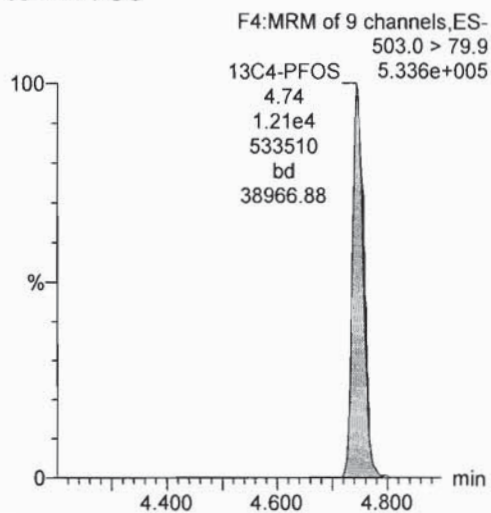
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Last Altered: Tuesday, December 05, 2017 13:14:50 Pacific Standard Time

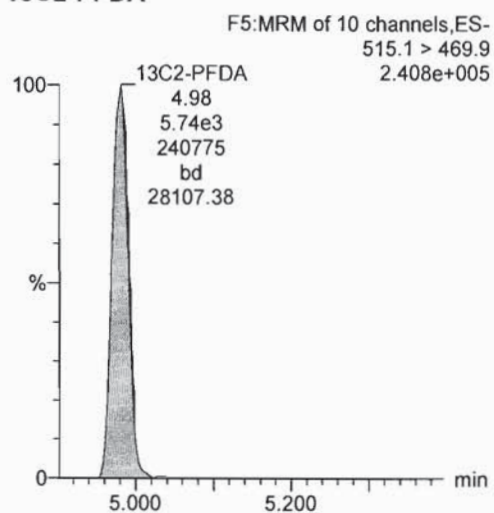
Printed: Tuesday, December 05, 2017 13:19:33 Pacific Standard Time

Name: 171205G2\_10, Date: 05-Dec-2017, Time: 12:38:18, ID: ST171205G2-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA





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

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time  
 Printed: Monday, December 04, 2017 08:47:27 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
 Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

**Compound name: PFBS**

Coefficient of Determination:  $R^2 = 0.996875$

Calibration curve:  $0.808887 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

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

*On 12/4/17*  
*JHA 12/04/2017*

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171202G3_2	Standard	0.443	3.07	124.684	10928.282	0.327	0.4	-8.5	NO	0.997	NO	bb
2	2 171202G3_3	Standard	0.885	3.07	276.354	11039.067	0.718	0.9	0.4	NO	0.997	NO	bb
3	3 171202G3_4	Standard	1.770	3.06	473.120	10765.878	1.261	1.6	-11.9	NO	0.997	NO	MM
4	4 171202G3_5	Standard	4.420	3.06	1464.085	10556.226	3.981	4.9	11.3	NO	0.997	NO	bb
5	5 171202G3_6	Standard	8.850	3.06	2950.752	10811.866	7.833	9.7	9.4	NO	0.997	NO	bd
6	6 171202G3_7	Standard	22.100	3.07	6909.177	11667.251	16.996	21.0	-4.9	NO	0.997	NO	bb
7	7 171202G3_8	Standard	44.200	3.07	13181.105	11173.312	33.857	41.9	-5.3	NO	0.997	NO	bb
8	8 171202G3_9	Standard	66.300	3.07	20185.486	10125.710	57.213	70.7	6.7	NO	0.997	NO	bb
9	9 171202G3_10	Standard	88.400	3.06	23244.936	9555.402	69.817	86.3	-2.4	NO	0.997	NO	MM

**Compound name: PFOA**

Coefficient of Determination:  $R^2 = 0.999583$

Calibration curve:  $0.800284 * x$

Response type: Internal Std ( Ref 6 ), 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 171202G3_2	Standard	0.500	4.37	459.826	9754.635	0.471	0.6	17.8	NO	1.000	NO	bb
2	2 171202G3_3	Standard	1.000	4.36	914.715	10228.641	0.894	1.1	11.7	NO	1.000	NO	bb
3	3 171202G3_4	Standard	2.000	4.37	1757.373	11046.186	1.591	2.0	-0.6	NO	1.000	NO	bd
4	4 171202G3_5	Standard	5.000	4.37	3765.525	9677.063	3.891	4.9	-2.8	NO	1.000	NO	MM
5	5 171202G3_6	Standard	10.000	4.37	8657.657	10294.740	8.410	10.5	5.1	NO	1.000	NO	bb
6	6 171202G3_7	Standard	25.000	4.37	20516.010	10550.622	19.445	24.3	-2.8	NO	1.000	NO	bd
7	7 171202G3_8	Standard	50.000	4.37	37504.695	9548.714	39.277	49.1	-1.8	NO	1.000	NO	bb
8	8 171202G3_9	Standard	75.000	4.37	57477.461	9505.696	60.466	75.6	0.7	NO	1.000	NO	bb
9	9 171202G3_10	Standard	100.000	4.37	69575.234	8650.426	80.430	100.5	0.5	NO	1.000	NO	bb

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

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**Compound name: PFOS**

Coefficient of Determination: R<sup>2</sup> = 0.998680

Calibration curve: 1.20311 \* x

Response type: Internal Std ( Ref 7 ), 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 171202G3_2	Standard	0.464	4.77	168.419	10928.282	0.442	0.4	-20.8	NO	0.999	NO	MM
2	2 171202G3_3	Standard	0.925	4.76	416.001	11039.067	1.082	0.9	-2.8	NO	0.999	NO	MM
3	3 171202G3_4	Standard	1.850	4.77	698.785	10765.878	1.863	1.5	-16.3	NO	0.999	NO	MM
4	4 171202G3_5	Standard	4.625	4.77	1920.758	10556.226	5.222	4.3	-6.2	NO	0.999	NO	MM
5	5 171202G3_6	Standard	9.250	4.76	4501.411	10811.866	11.949	9.9	7.4	NO	0.999	NO	MM
6	6 171202G3_7	Standard	23.100	4.77	10488.731	11667.251	25.801	21.4	-7.2	NO	0.999	NO	MM
7	7 171202G3_8	Standard	46.200	4.77	21488.533	11173.312	55.196	45.9	-0.7	NO	0.999	NO	MM
8	8 171202G3_9	Standard	69.300	4.77	30172.984	10125.710	85.521	71.1	2.6	NO	0.999	NO	MM
9	9 171202G3_10	Standard	92.400	4.77	37100.809	9555.402	111.434	92.6	0.2	NO	0.999	NO	MM

**Compound name: 13C2-PFHxA**

Response Factor: 0.439248

RRF SD: 0.0279903, Relative SD: 6.37231

Response type: Internal Std ( Ref 6 ), 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 171202G3_2	Standard	10.000	3.43	4249.101	9754.635	4.356	9.9	-0.8	NO		NO	bd
2	2 171202G3_3	Standard	10.000	3.43	4597.770	10228.641	4.495	10.2	2.3	NO		NO	bb
3	3 171202G3_4	Standard	10.000	3.43	4328.222	11046.186	3.918	8.9	-10.8	NO		NO	bb
4	4 171202G3_5	Standard	10.000	3.43	4594.959	9677.063	4.748	10.8	8.1	NO		NO	bb
5	5 171202G3_6	Standard	10.000	3.43	4648.389	10294.740	4.515	10.3	2.8	NO		NO	bb
6	6 171202G3_7	Standard	10.000	3.43	4309.811	10550.622	4.085	9.3	-7.0	NO		NO	bb
7	7 171202G3_8	Standard	10.000	3.43	3996.948	9548.714	4.186	9.5	-4.7	NO		NO	bd
8	8 171202G3_9	Standard	10.000	3.43	4310.814	9505.696	4.535	10.3	3.2	NO		NO	bb
9	9 171202G3_10	Standard	10.000	3.43	4060.292	8650.426	4.694	10.7	6.9	NO		NO	bb



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Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

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**Compound name: 13C2-PFDA**

Response Factor: 0.542326

RRF SD: 0.0329129, Relative SD: 6.06884

Response type: Internal Std ( Ref 6 ), 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 171202G3_2	Standard	10.000	5.00	5478.132	9754.635	5.616	10.4	3.6	NO		NO	bb
2	2 171202G3_3	Standard	10.000	5.00	6214.181	10228.641	6.075	11.2	12.0	NO		NO	bd
3	3 171202G3_4	Standard	10.000	5.00	6238.650	11046.186	5.648	10.4	4.1	NO		NO	bd
4	4 171202G3_5	Standard	10.000	5.00	5234.255	9677.063	5.409	10.0	-0.3	NO		NO	bd
5	5 171202G3_6	Standard	10.000	5.00	5321.287	10294.740	5.169	9.5	-4.7	NO		NO	bb
6	6 171202G3_7	Standard	10.000	5.00	5254.766	10550.622	4.981	9.2	-8.2	NO		NO	bb
7	7 171202G3_8	Standard	10.000	5.00	5149.371	9548.714	5.393	9.9	-0.6	NO		NO	bd
8	8 171202G3_9	Standard	10.000	5.00	4867.642	9505.696	5.121	9.4	-5.6	NO		NO	bd
9	9 171202G3_10	Standard	10.000	5.00	4669.878	8650.426	5.398	10.0	-0.5	NO		NO	bd

**Compound name: 13C2-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 6 ), 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 171202G3_2	Standard	10.000	4.37	9754.635	9754.635	10.000	10.0	0.0	NO		NO	bd
2	2 171202G3_3	Standard	10.000	4.37	10228.641	10228.641	10.000	10.0	0.0	NO		NO	bb
3	3 171202G3_4	Standard	10.000	4.36	11046.186	11046.186	10.000	10.0	0.0	NO		NO	bb
4	4 171202G3_5	Standard	10.000	4.37	9677.063	9677.063	10.000	10.0	0.0	NO		NO	bd
5	5 171202G3_6	Standard	10.000	4.36	10294.740	10294.740	10.000	10.0	0.0	NO		NO	bd
6	6 171202G3_7	Standard	10.000	4.37	10550.622	10550.622	10.000	10.0	0.0	NO		NO	bb
7	7 171202G3_8	Standard	10.000	4.37	9548.714	9548.714	10.000	10.0	0.0	NO		NO	bb
8	8 171202G3_9	Standard	10.000	4.37	9505.696	9505.696	10.000	10.0	0.0	NO		NO	bd
9	9 171202G3_10	Standard	10.000	4.37	8650.426	8650.426	10.000	10.0	0.0	NO		NO	bb

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

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**Compound name: 13C4-PFOS**

Response Factor: 1

RRF SD: 5.55112e-017, Relative SD: 5.55112e-015

Response type: Internal Std ( Ref 7 ), 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 171202G3_2	Standard	28.700	4.77	10928.282	10928.282	28.700	28.7	0.0	NO		NO	bb
2	2 171202G3_3	Standard	28.700	4.76	11039.067	11039.067	28.700	28.7	0.0	NO		NO	bd
3	3 171202G3_4	Standard	28.700	4.77	10765.878	10765.878	28.700	28.7	0.0	NO		NO	bb
4	4 171202G3_5	Standard	28.700	4.77	10556.226	10556.226	28.700	28.7	0.0	NO		NO	bd
5	5 171202G3_6	Standard	28.700	4.76	10811.866	10811.866	28.700	28.7	0.0	NO		NO	bb
6	6 171202G3_7	Standard	28.700	4.77	11667.251	11667.251	28.700	28.7	0.0	NO		NO	bd
7	7 171202G3_8	Standard	28.700	4.77	11173.312	11173.312	28.700	28.7	0.0	NO		NO	bd
8	8 171202G3_9	Standard	28.700	4.77	10125.710	10125.710	28.700	28.7	0.0	NO		NO	bb
9	9 171202G3_10	Standard	28.700	4.77	9555.402	9555.402	28.700	28.7	0.0	NO		NO	bd

Dataset: Untitled

Last Altered: Monday, December 04, 2017 08:49:18 Pacific Standard Time

Printed: Monday, December 04, 2017 08:49:38 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G3_1	IPA	02-Dec-17	17:51:52
2	171202G3_2	ST171202G3-1 PFC CS-3 537 17K3022	02-Dec-17	18:04:20
3	171202G3_3	ST171202G3-2 PFC CS-2 537 17K3023	02-Dec-17	18:16:47
4	171202G3_4	ST171202G3-3 PFC CS-1 537 17K3024	02-Dec-17	18:29:13
5	171202G3_5	ST171202G3-4 PFC CS0 537 17K3025	02-Dec-17	18:41:38
6	171202G3_6	ST171202G3-5 PFC CS1 537 17K3026	02-Dec-17	18:54:05
7	171202G3_7	ST171202G3-6 PFC CS2 537 17K3033	02-Dec-17	19:06:30
8	171202G3_8	ST171202G3-7 PFC CS3 537 17K3027	02-Dec-17	19:18:58
9	171202G3_9	ST171202G3-8 PFC CS4 537 17K3028	02-Dec-17	19:31:26
10	171202G3_10	ST171202G3-9 PFC CS5 537 17K3029	02-Dec-17	19:43:54
11	171202G3_11	IPA	02-Dec-17	19:56:18
12	171202G3_12	ICV171202G3-1 PFC ICV 537 17K3030	02-Dec-17	20:08:45
13	171202G3_13	IPA	02-Dec-17	20:21:09
14	171202G3_14	B7L0003-BS1 LFB 0.25	02-Dec-17	20:33:39
15	171202G3_15	IPA	02-Dec-17	20:46:04
16	171202G3_16	B7L0003-BLK1 LRB 0.25	02-Dec-17	20:58:31
17	171202G3_17	B7L0003-MS1 LFSM 0.25	02-Dec-17	21:10:56
18	171202G3_18	B7L0003-MSD1 LFSMD 0.25	02-Dec-17	21:23:22
19	171202G3_19	1701769-01 CH-AT-1RW69-1117 0.25	02-Dec-17	21:35:49
20	171202G3_20	1701769-02 CH-AT-1FB69-1117 0.25	02-Dec-17	21:48:16
21	171202G3_21	1701769-03 CH-AT-1RW70-1117 0.25	02-Dec-17	22:00:45
22	171202G3_22	1701769-04 CH-AT-1FB70-1117 0.25	02-Dec-17	22:13:09
23	171202G3_23	1701769-05 CH-AT-1RW71-1117 0.25	02-Dec-17	22:25:33
24	171202G3_24	1701769-06 CH-AT-1FB71-1117 0.25	02-Dec-17	22:37:58
25	171202G3_25	1701769-07 CH-AT-1RW72-1117-A 0.25	02-Dec-17	22:50:23
26	171202G3_26	1701769-08 CH-AT-1FB72-1117-A 0.25	02-Dec-17	23:02:49
27	171202G3_27	1701769-09 CH-AT-1RW72-1117-B 0.25	02-Dec-17	23:15:15
28	171202G3_28	1701769-10 CH-AT-1FB72-1117-B 0.25	02-Dec-17	23:27:42
29	171202G3_29	1701769-11 CH-AT-1RW73-1117 0.25	02-Dec-17	23:40:10
30	171202G3_30	1701769-12 CH-AT-1FB73-1117 0.25	02-Dec-17	23:52:33
31	171202G3_31	B7L0005-BS1 LFB 0.25	03-Dec-17	00:04:57



Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time

Printed: Monday, December 04, 2017 08:38:29 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

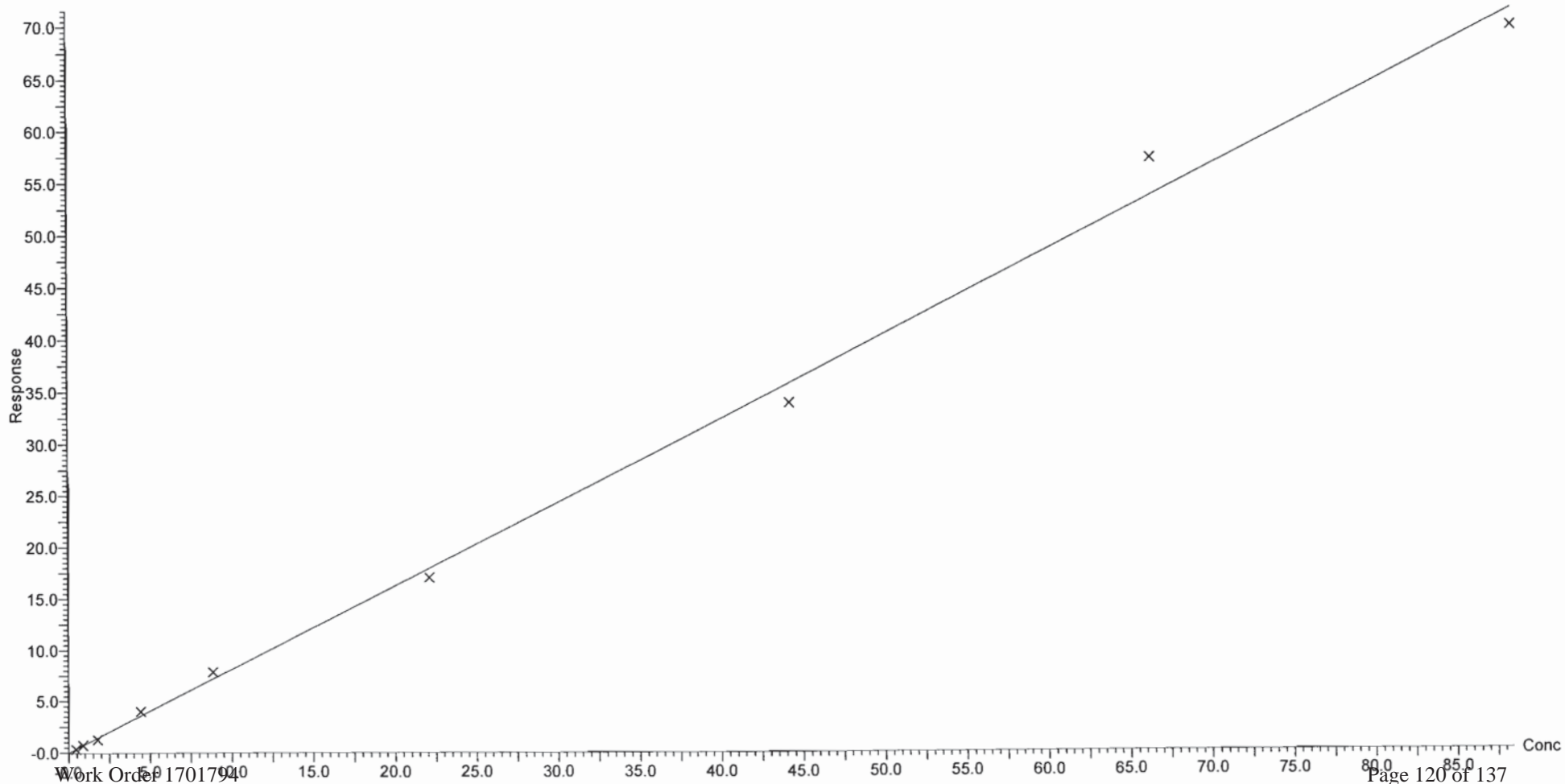
Compound name: PFBS

Coefficient of Determination:  $R^2 = 0.996875$

Calibration curve:  $0.808887 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

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



Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time

Printed: Monday, December 04, 2017 08:38:29 Pacific Standard Time

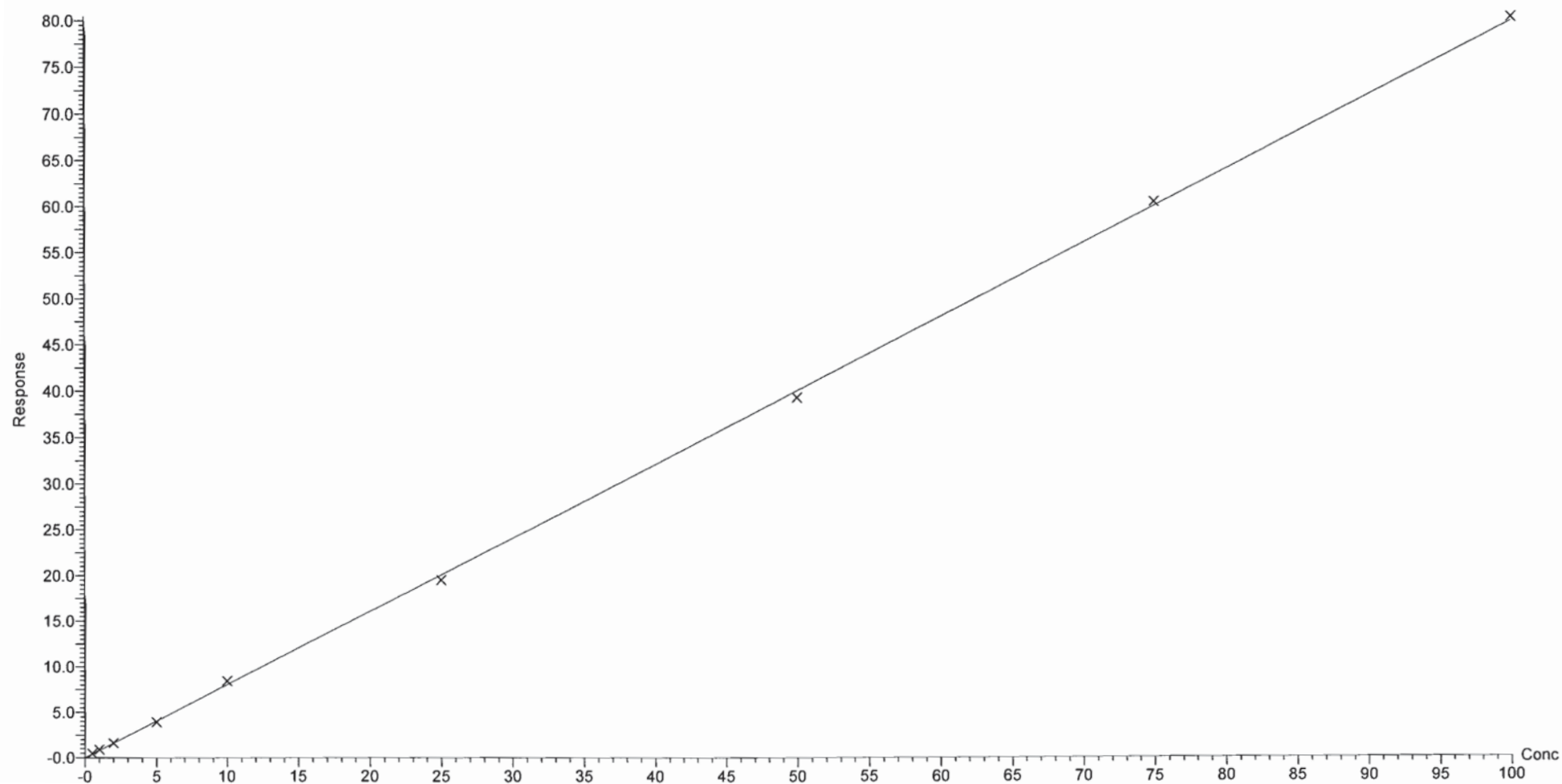
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.999583$

Calibration curve:  $0.800284 * x$

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

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





Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time

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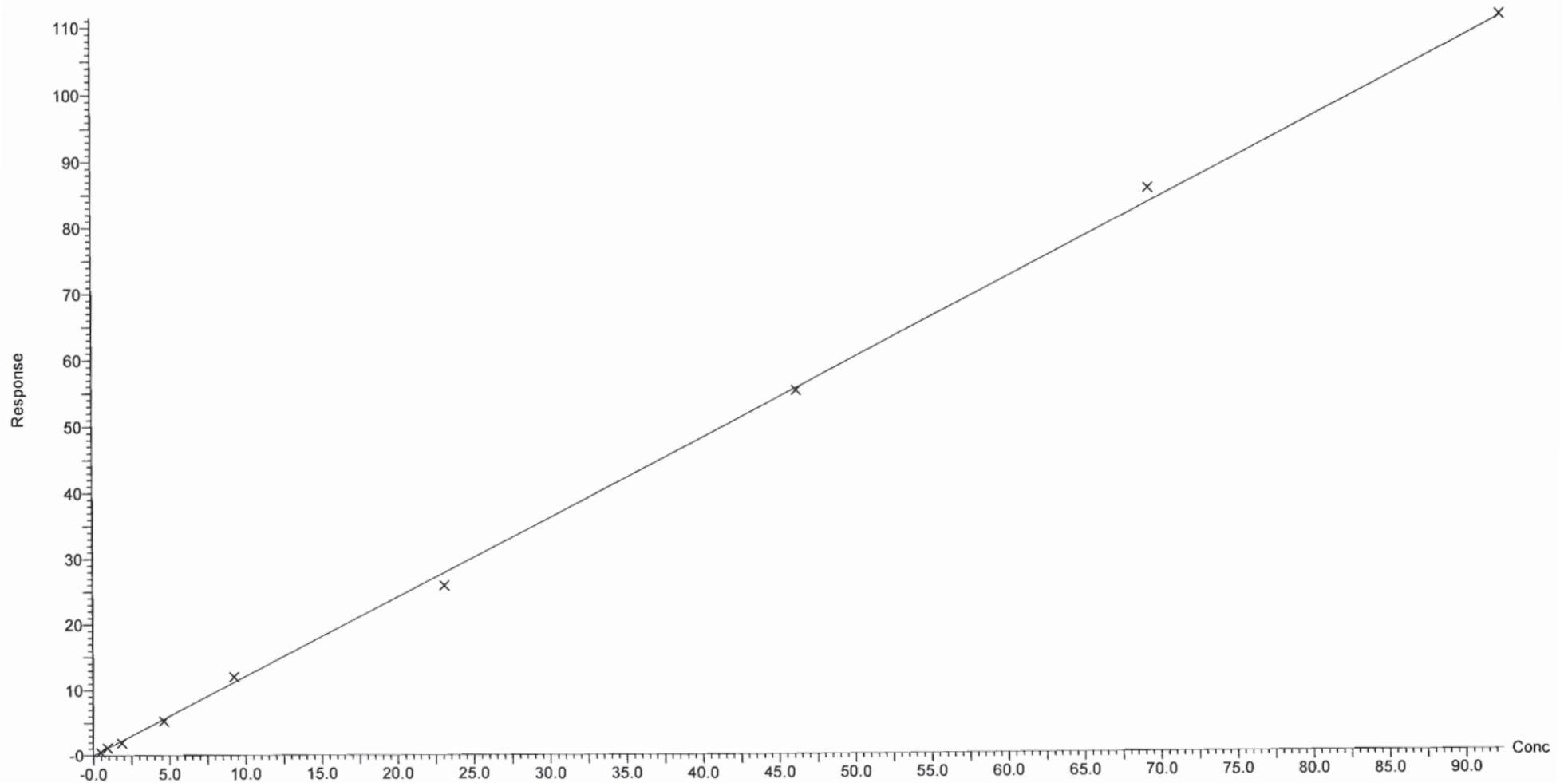
Compound name: PFOS

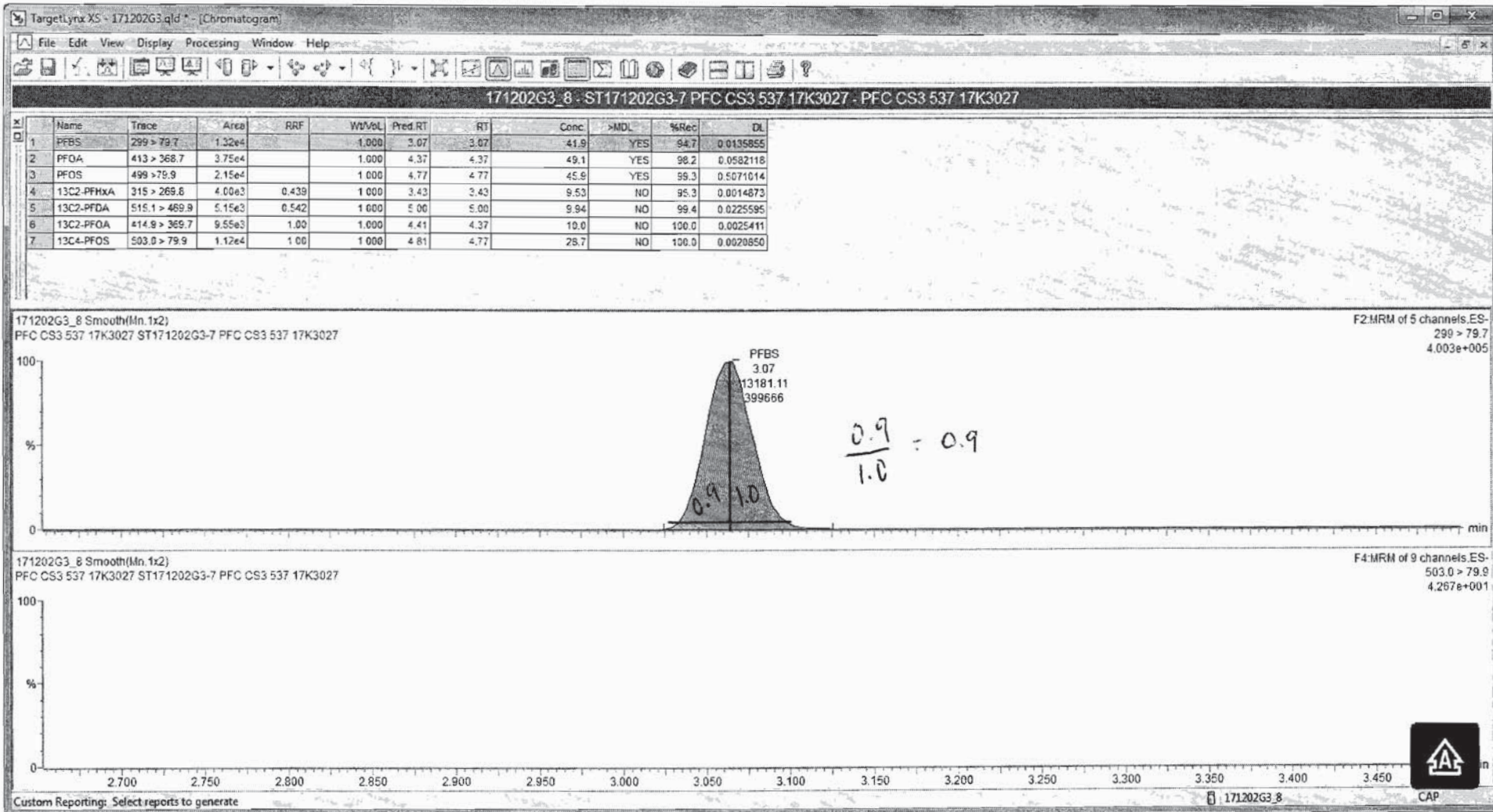
Coefficient of Determination:  $R^2 = 0.998680$

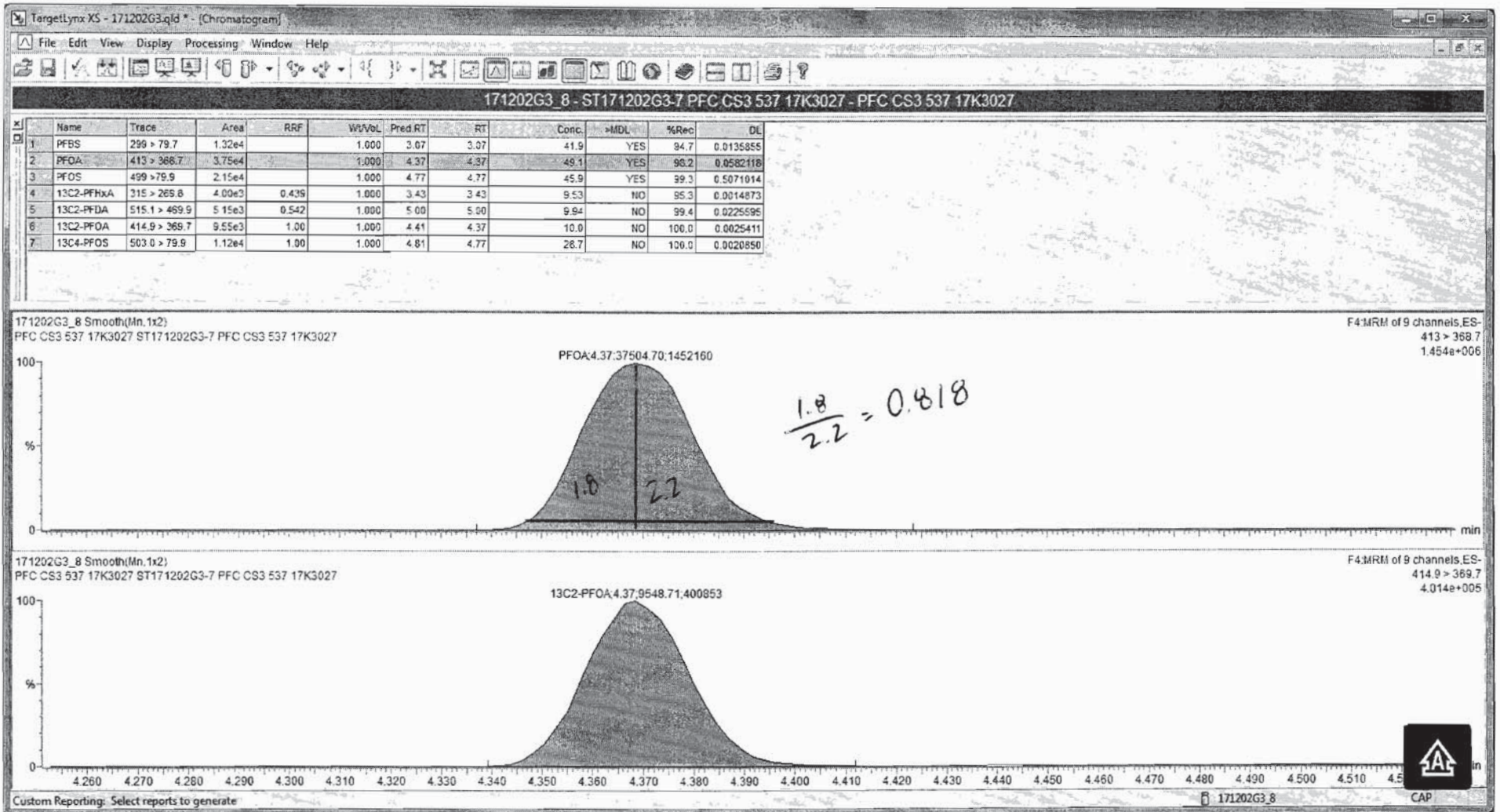
Calibration curve:  $1.20311 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

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









Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1 ST171202G3-1 PFC CS-3 537 17K3022	171202G3_Standard		10	4.37	9754.635	9754.635	bd
2 ST171202G3-2 PFC CS-2 537 17K3023	171202G3_Standard		10	4.37	10228.64	10228.64	bb
3 ST171202G3-3 PFC CS-1 537 17K3024	171202G3_Standard		10	4.36	11046.19	11046.19	bb
4 ST171202G3-4 PFC CS0 537 17K3025	171202G3_Standard		10	4.37	9677.063	9677.063	bd
5 ST171202G3-5 PFC CS1 537 17K3026	171202G3_Standard		10	4.36	10294.74	10294.74	bd
6 ST171202G3-6 PFC CS2 537 17K3033	171202G3_Standard		10	4.37	10550.62	10550.62	bb
7 ST171202G3-7 PFC CS3 537 17K3027	171202G3_Standard		10	4.37	9548.714	9548.714	bb
8 ST171202G3-8 PFC CS4 537 17K3028	171202G3_Standard		10	4.37	9505.696	9505.696	bd
9 ST171202G3-9 PFC CS5 537 17K3029	171202G3_Standard		10	4.37	8650.426	8650.426	bb
						AVERAGE	RPD
						9917.414	19.79262799

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1 ST171202G3-1 PFC CS-3 537 17K3022	171202G3_Standard		28.7	4.77	10928.28	10928.28	bb
2 ST171202G3-2 PFC CS-2 537 17K3023	171202G3_Standard		28.7	4.76	11039.07	11039.07	bd
3 ST171202G3-3 PFC CS-1 537 17K3024	171202G3_Standard		28.7	4.77	10765.88	10765.88	bb
4 ST171202G3-4 PFC CS0 537 17K3025	171202G3_Standard		28.7	4.77	10556.23	10556.23	bd
5 ST171202G3-5 PFC CS1 537 17K3026	171202G3_Standard		28.7	4.76	10811.87	10811.87	bb
6 ST171202G3-6 PFC CS2 537 17K3033	171202G3_Standard		28.7	4.77	11667.25	11667.25	bd
7 ST171202G3-7 PFC CS3 537 17K3027	171202G3_Standard		28.7	4.77	11173.31	11173.31	bd
8 ST171202G3-8 PFC CS4 537 17K3028	171202G3_Standard		28.7	4.77	10125.71	10125.71	bb
9 ST171202G3-9 PFC CS5 537 17K3029	171202G3_Standard		28.7	4.77	9555.402	9555.402	bd
						AVERAGE	RPD
						10735.89	19.90183791

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time

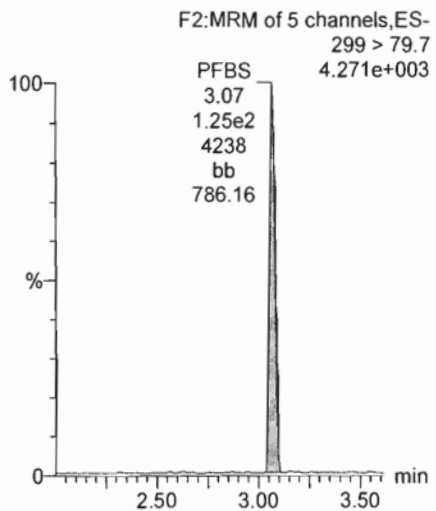
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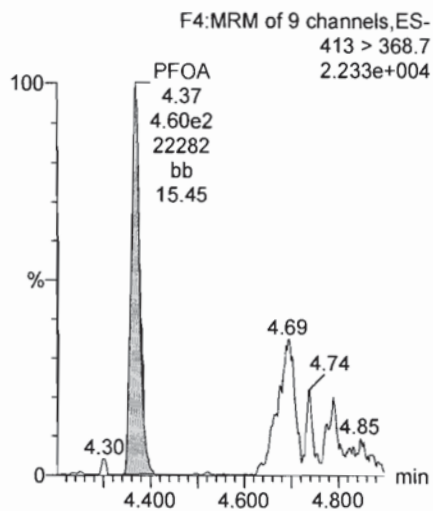
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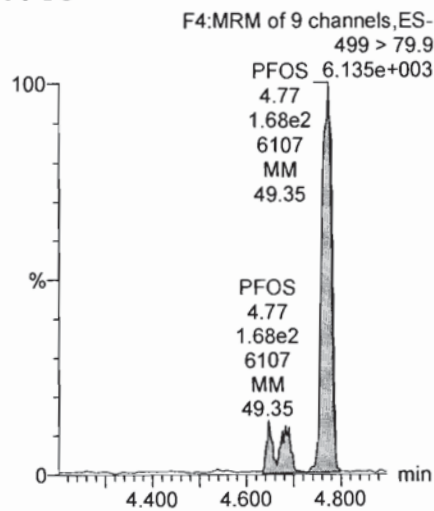
PFBS



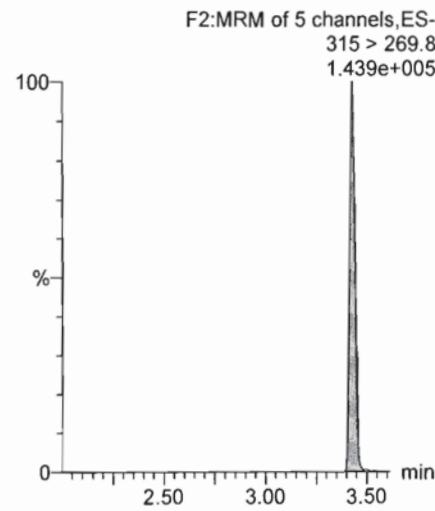
PFOA



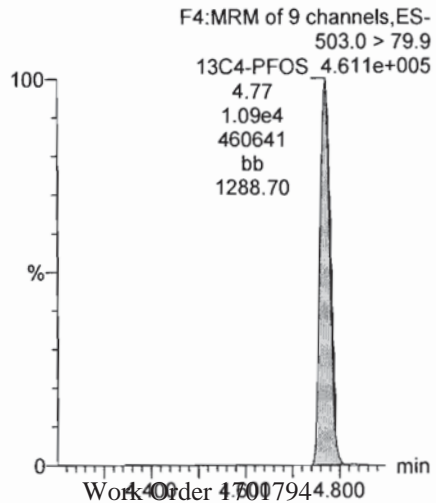
PFOS



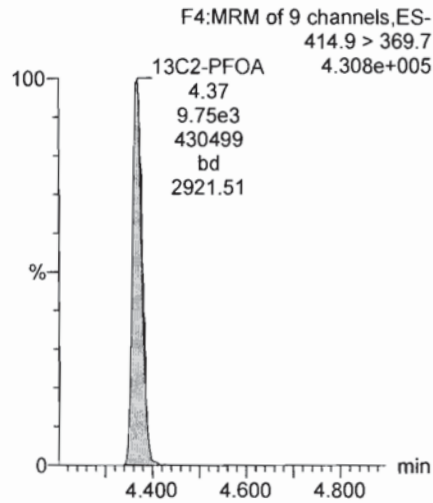
13C2-PFHxA



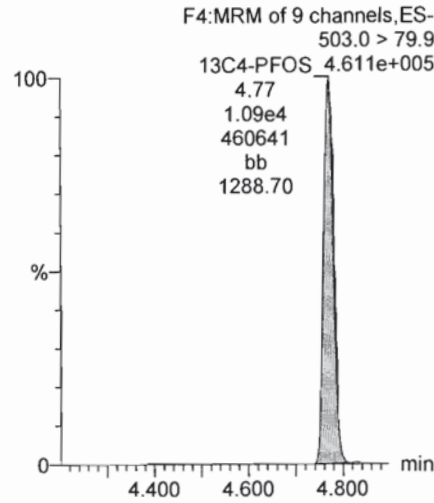
13C4-PFOS



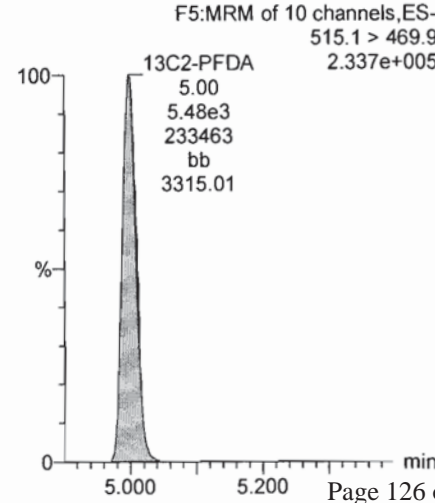
13C2-PFOA



13C4-PFOS



13C2-PFDA

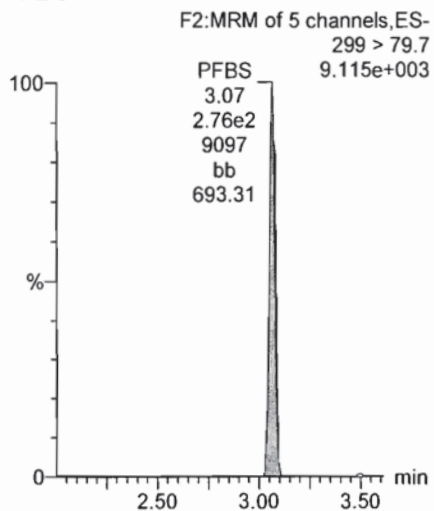


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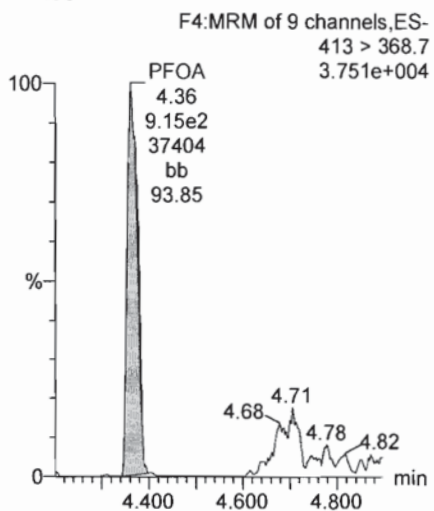
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Name: 171202G3\_3, Date: 02-Dec-2017, Time: 18:16:47, ID: ST171202G3-2 PFC CS-2 537 17K3023, Description: PFC CS-2 537 17K3023

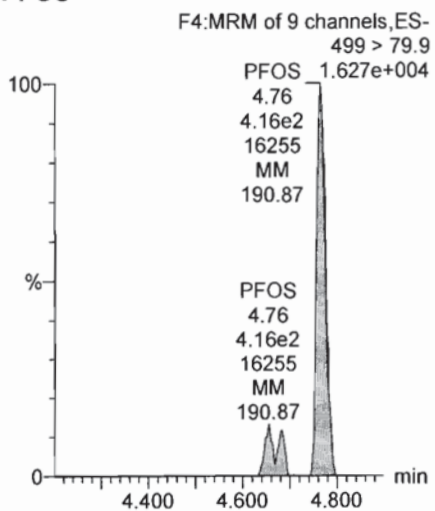
**PFBS**



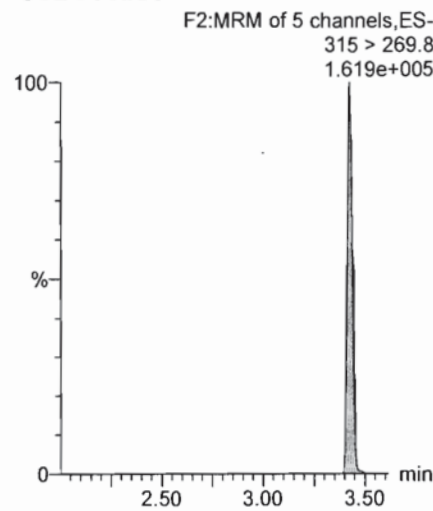
**PFOA**



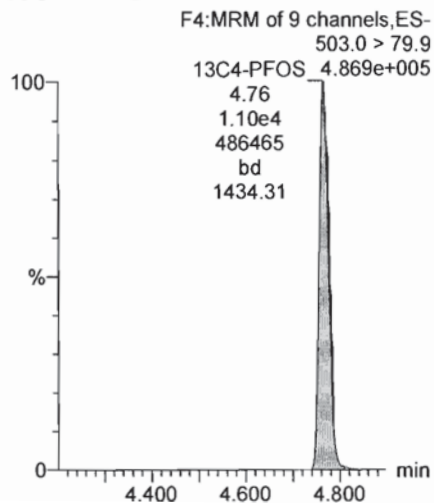
**PFOS**



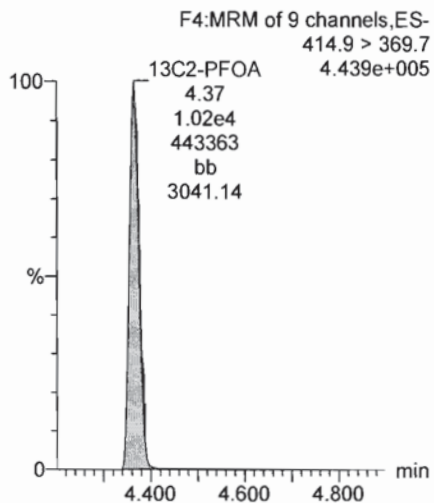
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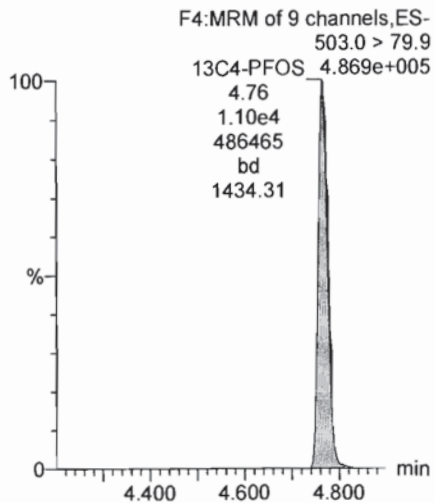
**13C4-PFOS**



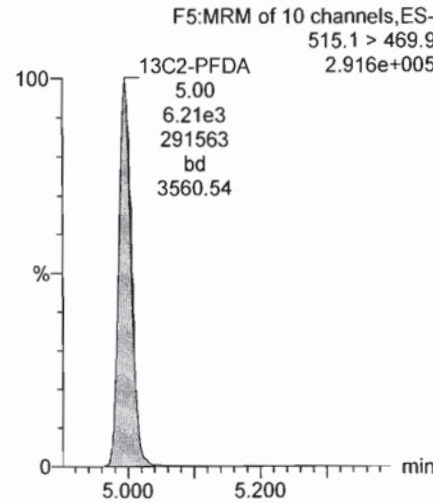
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**

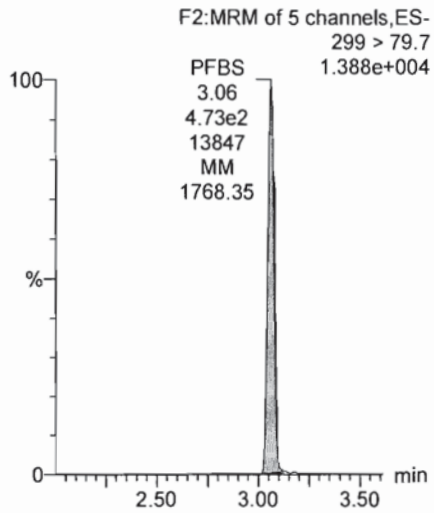


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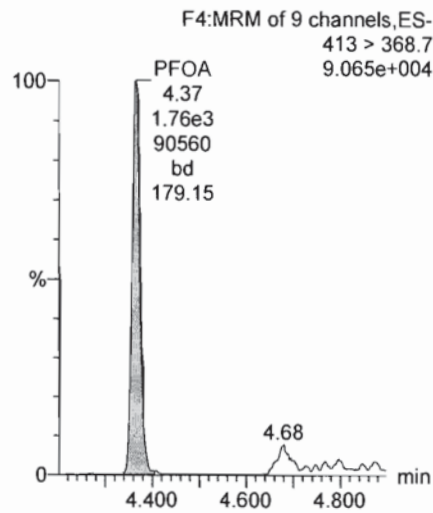
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Name: 171202G3\_4, Date: 02-Dec-2017, Time: 18:29:13, ID: ST171202G3-3 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

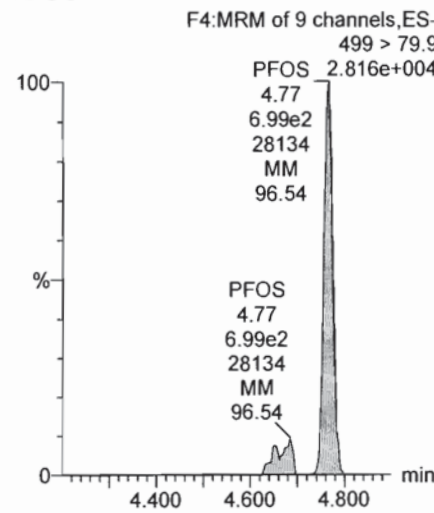
**PFBS**



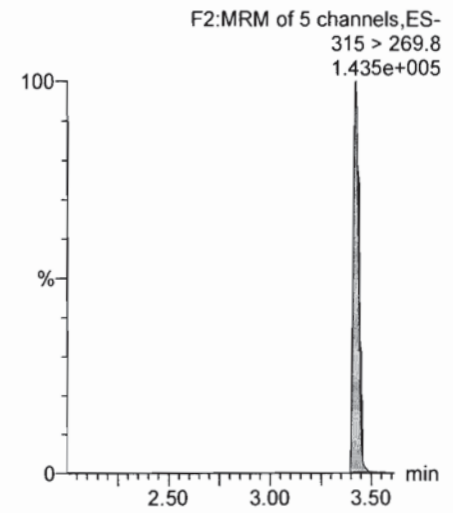
**PFOA**



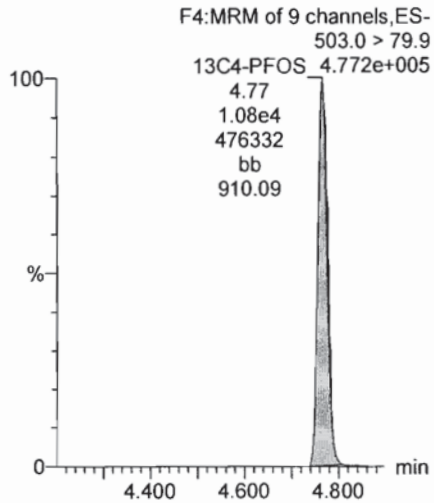
**PFOS**



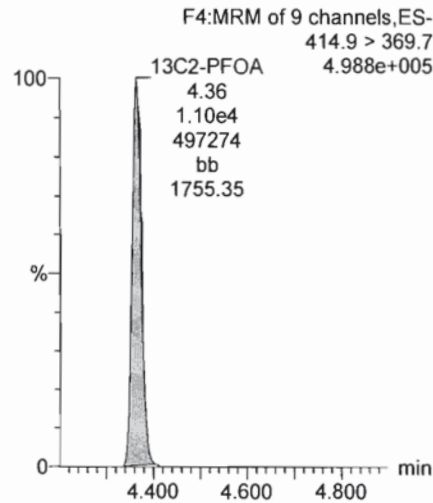
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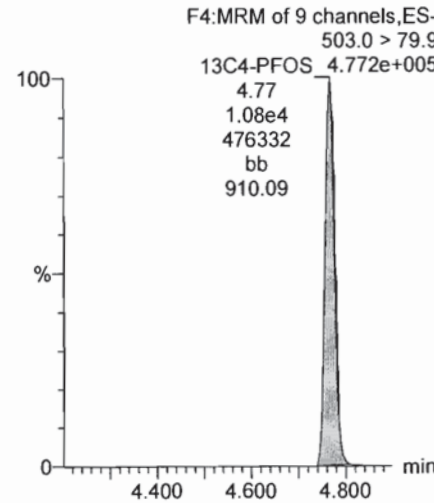
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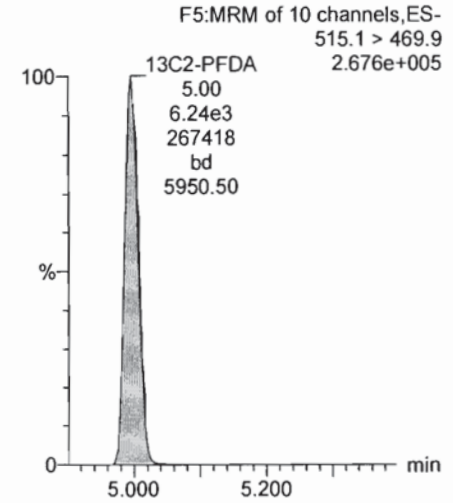
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



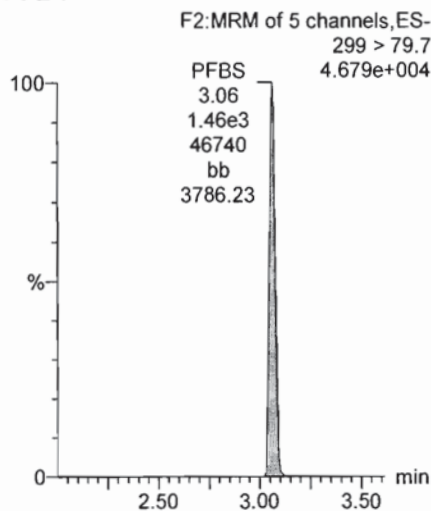


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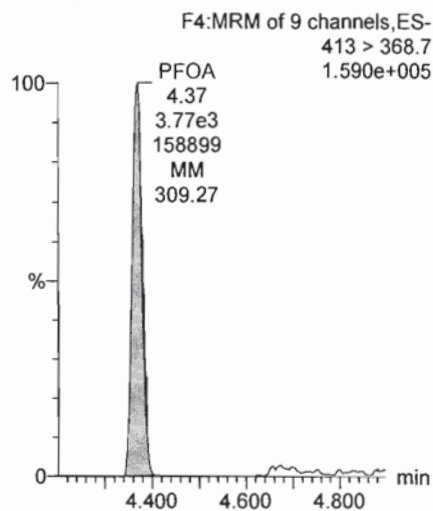
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Printed: Monday, December 04, 2017 08:37:23 Pacific Standard Time

Name: 171202G3\_5, Date: 02-Dec-2017, Time: 18:41:38, ID: ST171202G3-4 PFC CS0 537 17K3025, Description: PFC CS0 537 17K3025

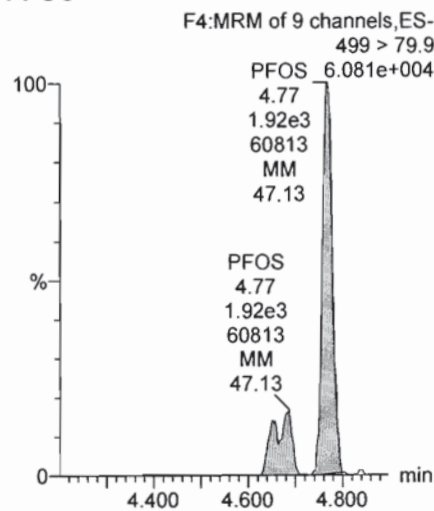
**PFBS**



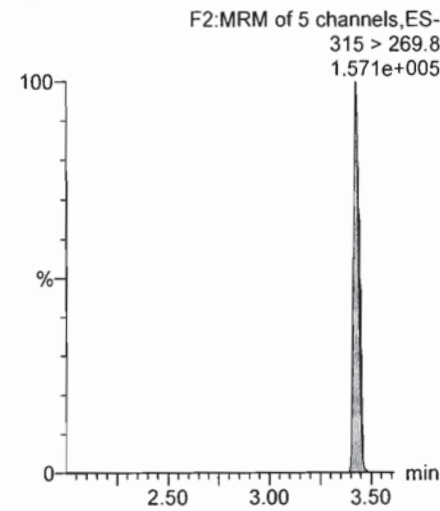
**PFOA**



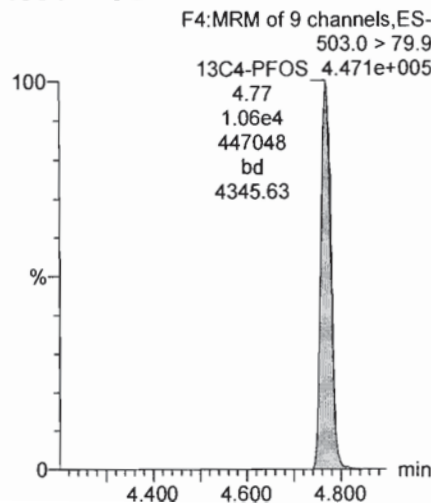
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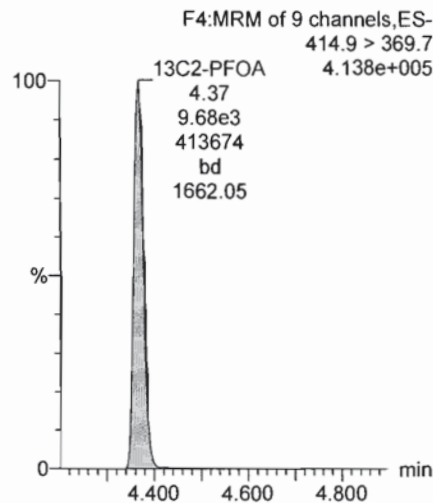
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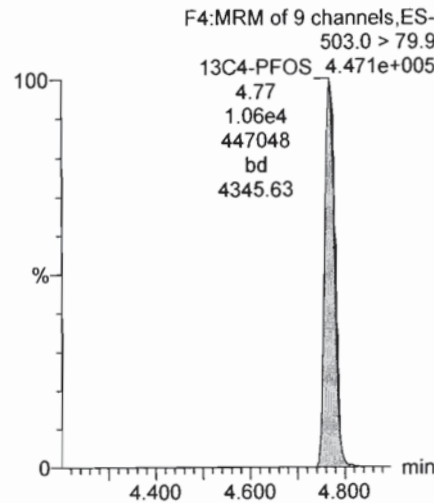
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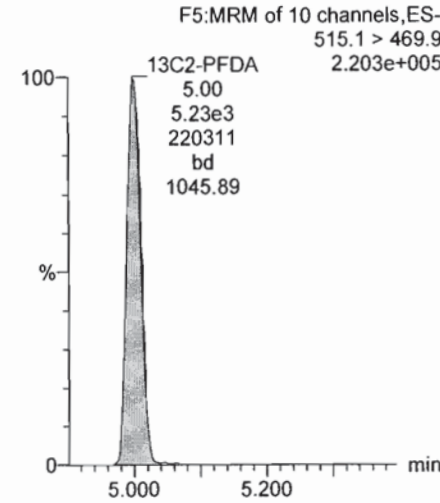
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



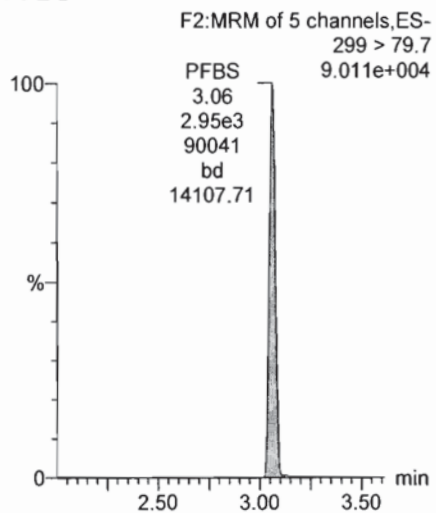


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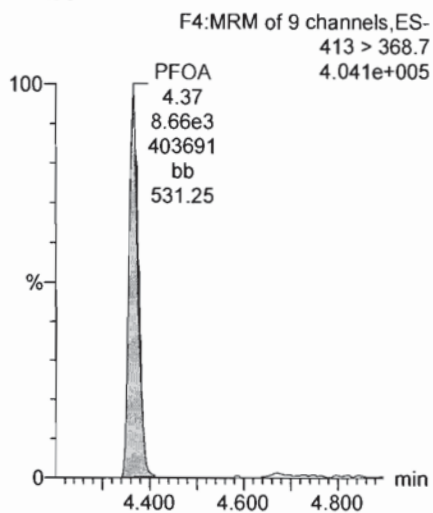
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Name: 171202G3\_6, Date: 02-Dec-2017, Time: 18:54:05, ID: ST171202G3-5 PFC CS1 537 17K3026, Description: PFC CS1 537 17K3026

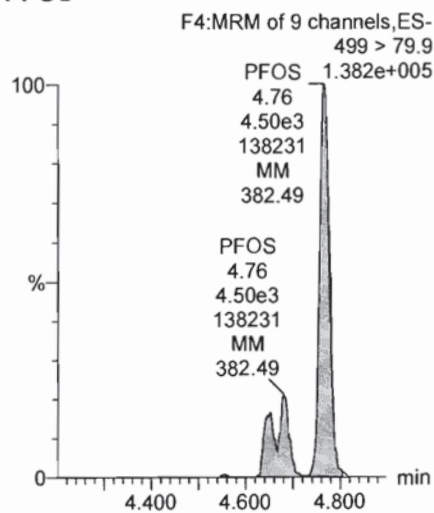
**PFBS**



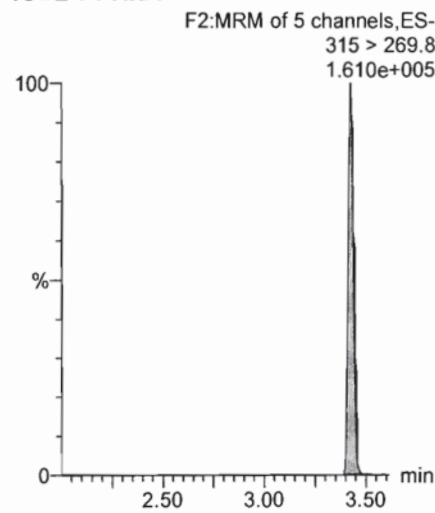
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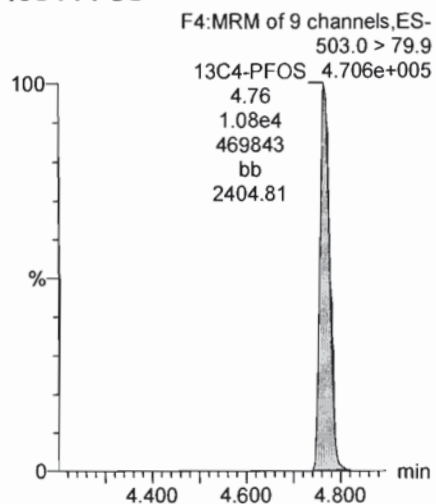
**PFOS**



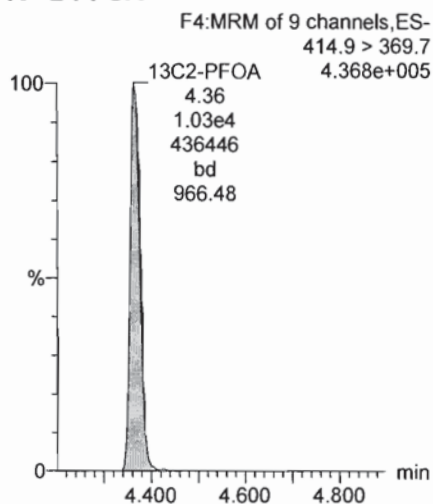
**13C2-PFHxA**



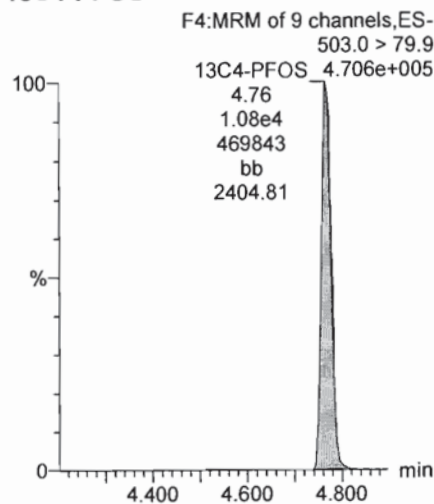
**13C4-PFOS**



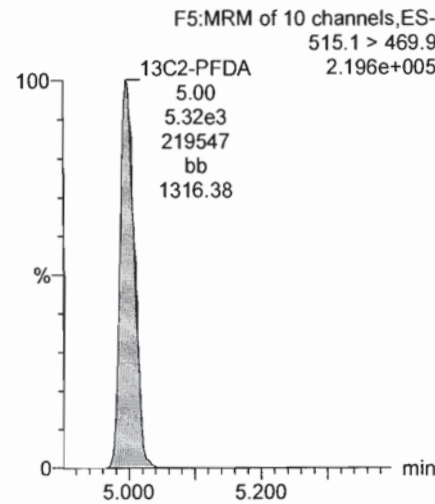
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**

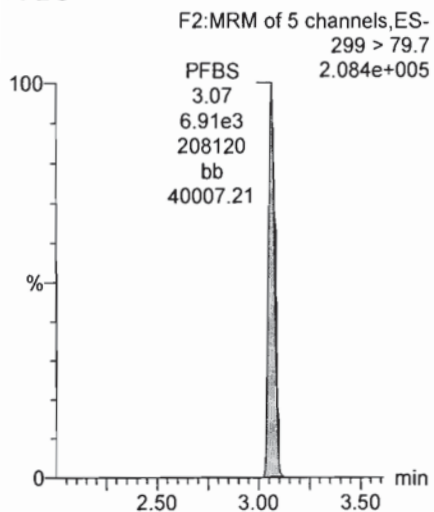


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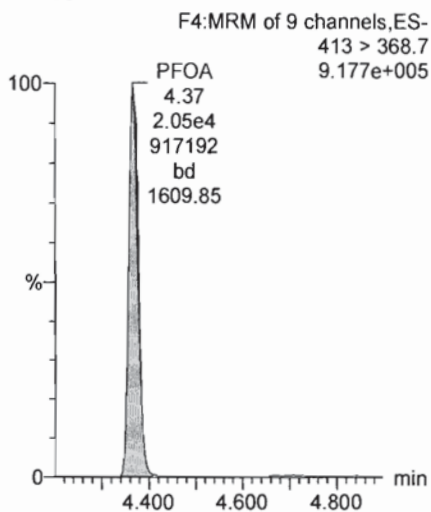
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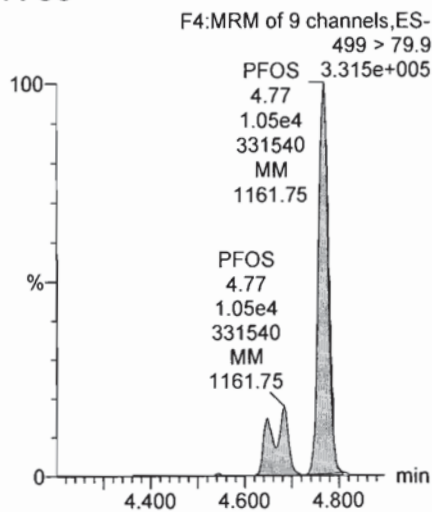
**PFBS**



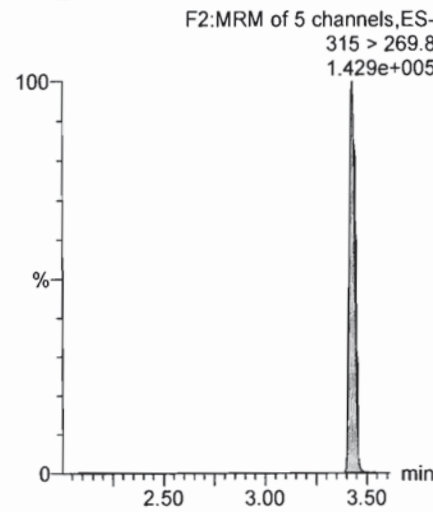
**PFOA**



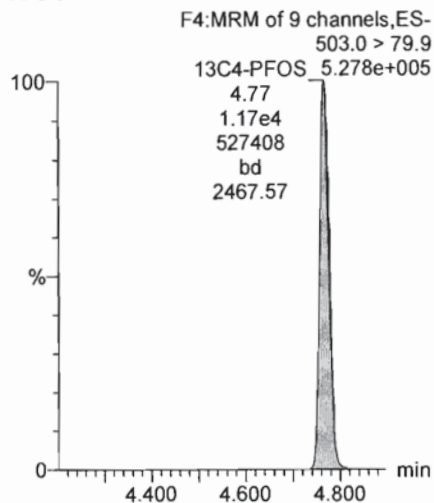
**PFOS**



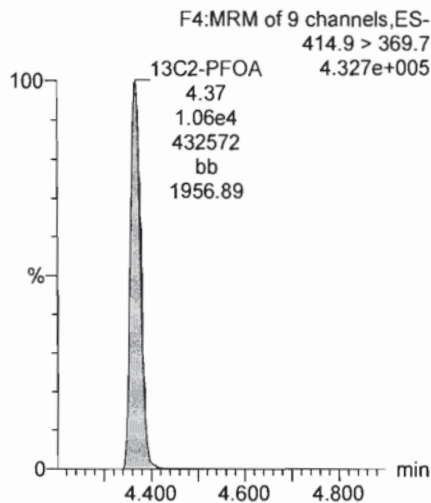
**13C2-PFHxA**



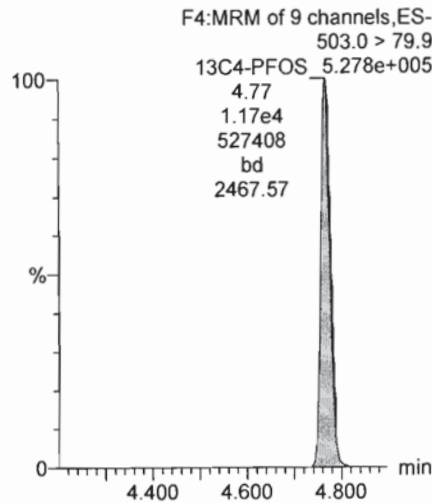
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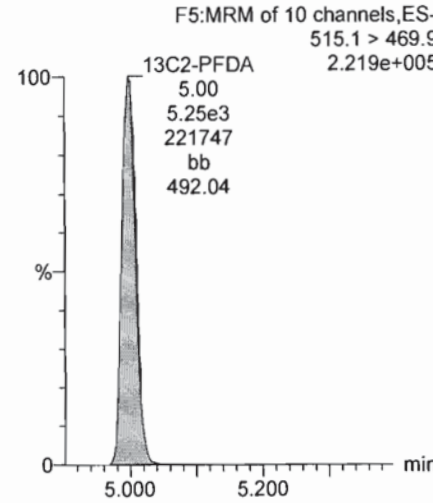
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**

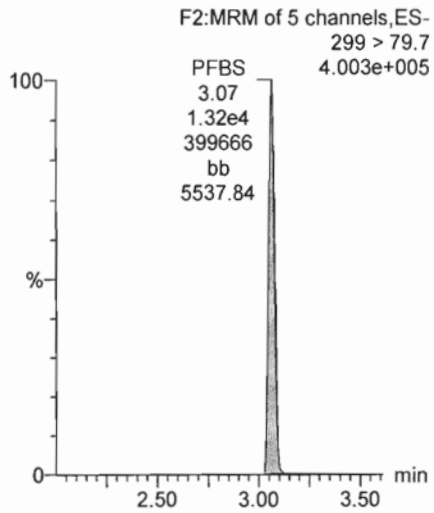


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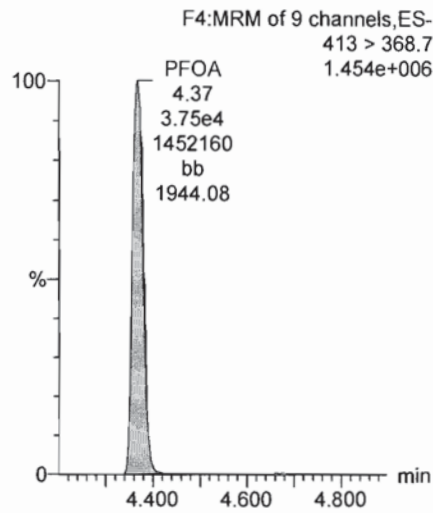
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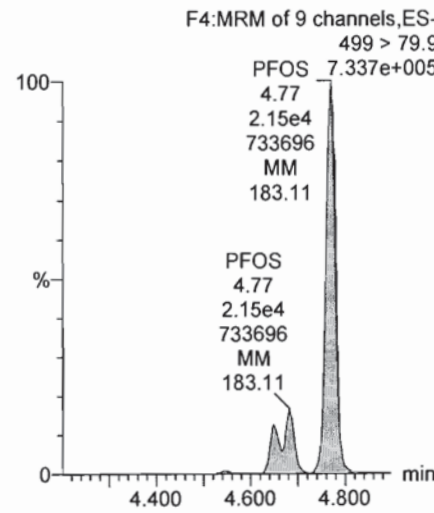
**PFBS**



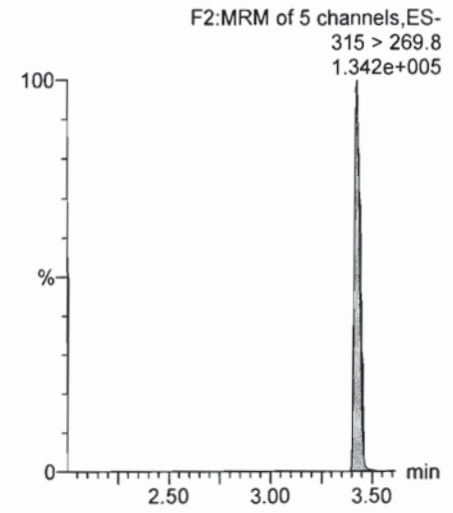
**PFOA**



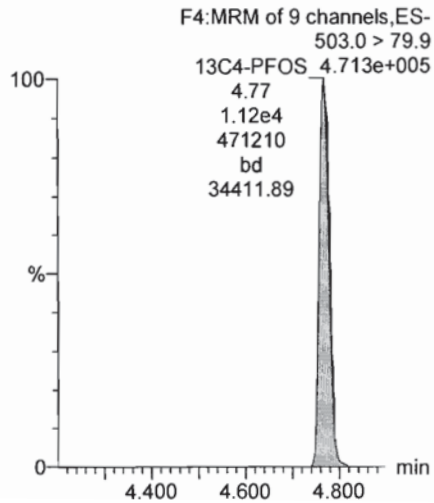
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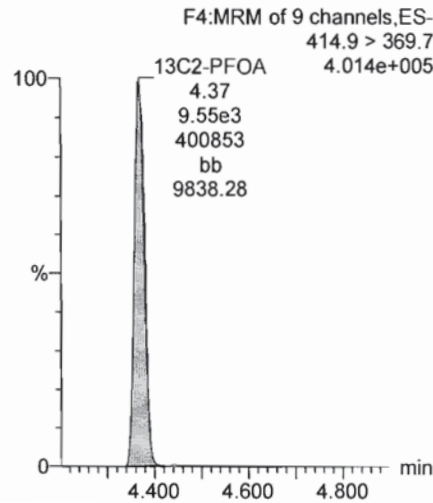
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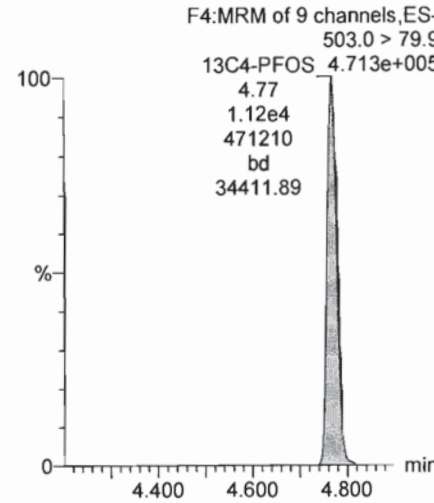
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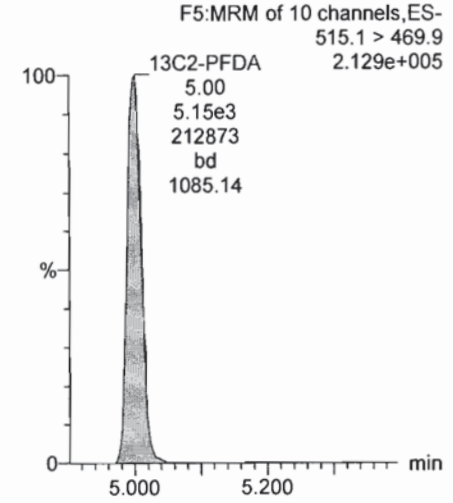
**13C2-PFOA**



**13C4-PFOS**



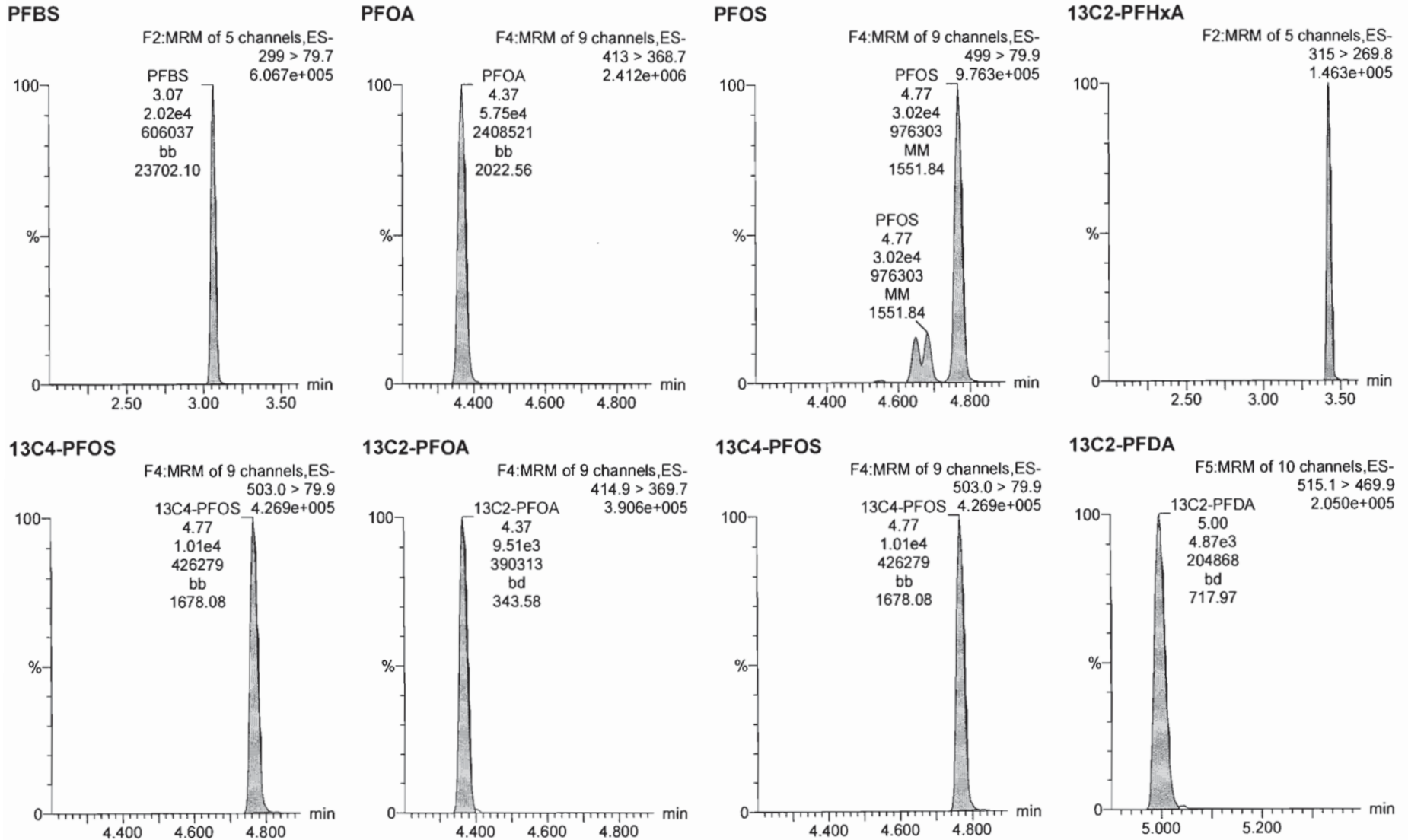
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Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time  
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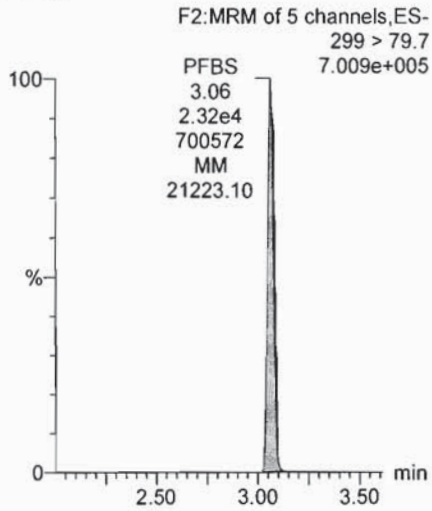


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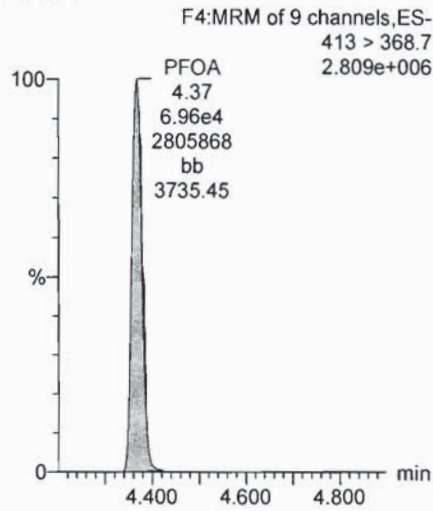
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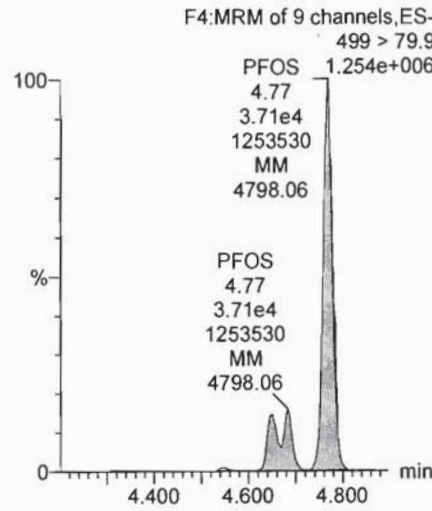
**PFBS**



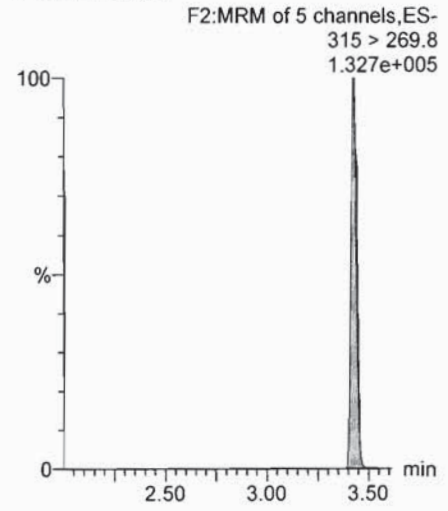
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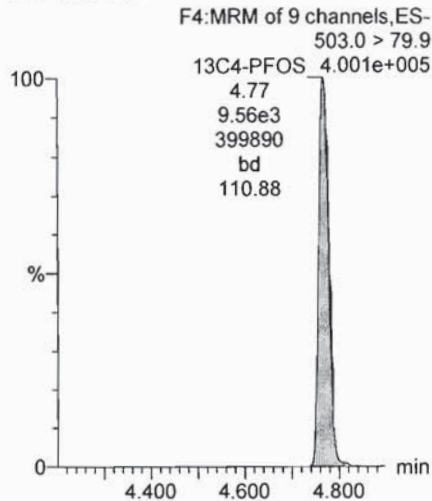
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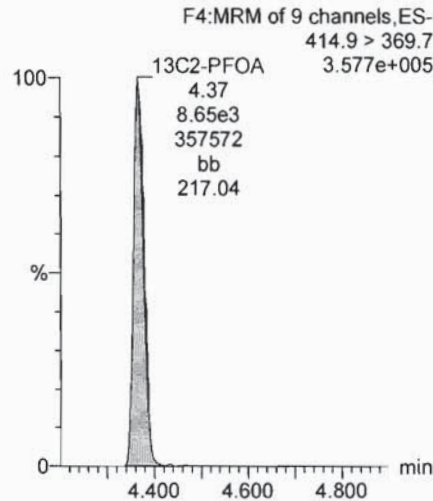
**13C2-PFHxA**



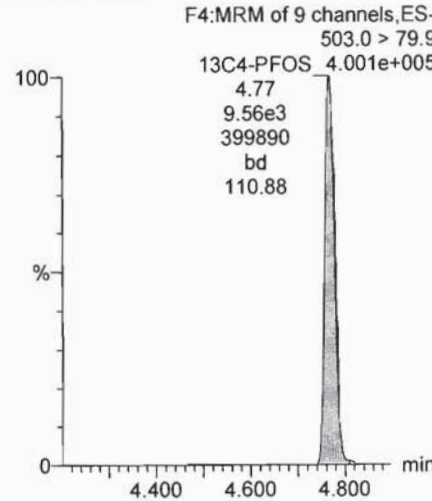
**13C4-PFOS**



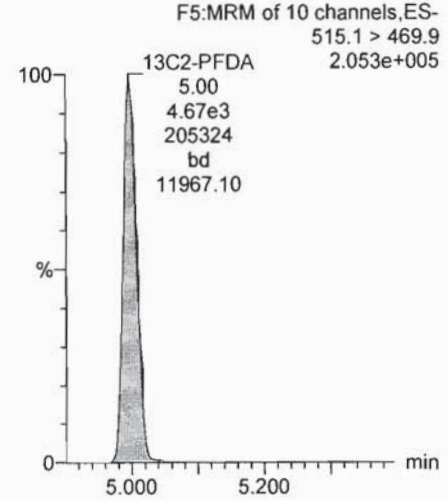
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-12.qld

Last Altered: Monday, December 04, 2017 08:48:12 Pacific Standard Time  
Printed: Monday, December 04, 2017 08:48:51 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3\_12, Date: 02-Dec-2017, Time: 20:08:45, ID: ICV171202G3-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.02e3	9.95e3		1.0000	3.07	3.07	8.71	10.8	107.7
2	2 PFOA	413 > 368.7	7.72e3	9.02e3		1.0000	4.37	4.37	8.55	10.7	106.9
3	3 PFOS	499 > 79.9	4.11e3	9.95e3		1.0000	4.77	4.77	11.8	9.84	98.4
4	4 13C2-PFHxA	315 > 269.8	4.03e3	9.02e3	0.439	1.0000	3.43	3.43	4.47	10.2	101.8
5	5 13C2-PFDA	515.1 > 469.9	4.46e3	9.02e3	0.542	1.0000	5.00	5.00	4.94	9.12	91.2
6	6 13C2-PFOA	414.9 > 369.7	9.02e3	9.02e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.95e3	9.95e3	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

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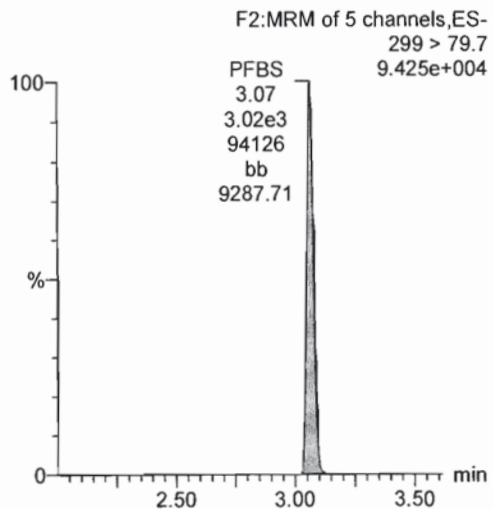
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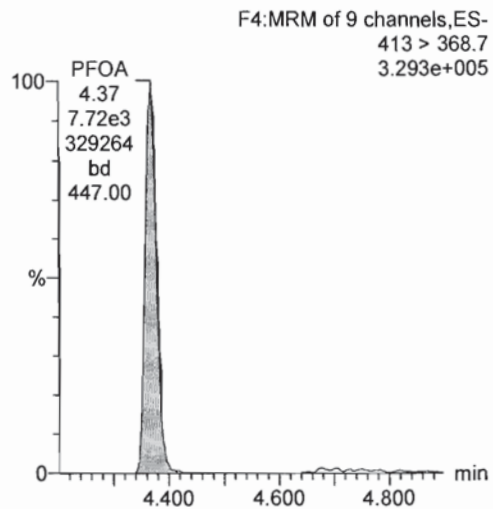
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Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-02-17\_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3\_12, Date: 02-Dec-2017, Time: 20:08:45, ID: ICV171202G3-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

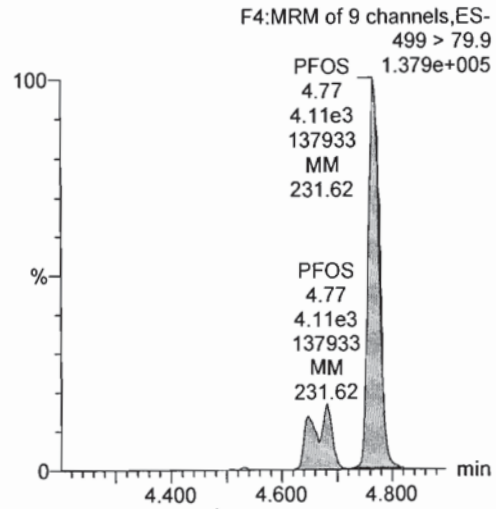
PFBS



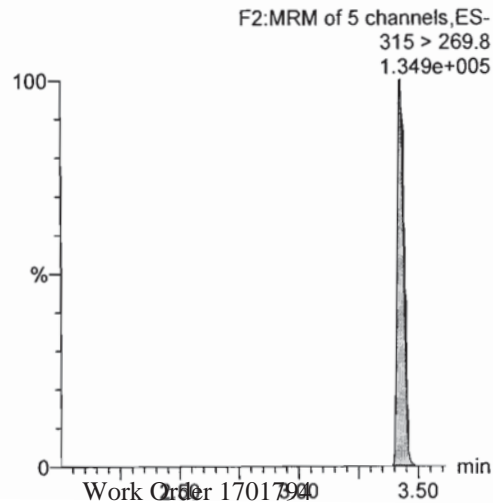
PFOA



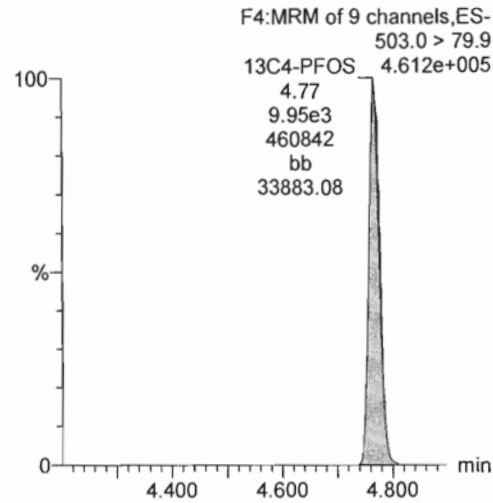
PFOS



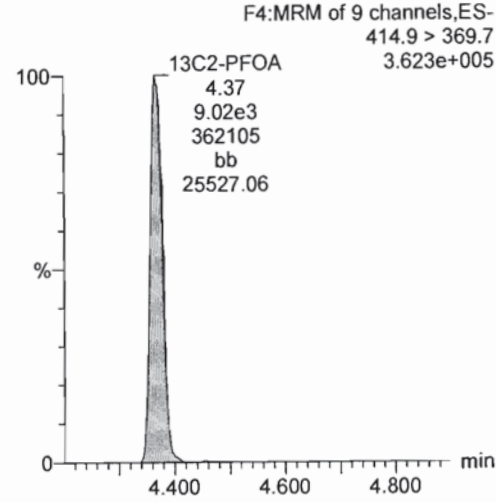
13C2-PFHxA



13C4-PFOS



13C2-PFOA



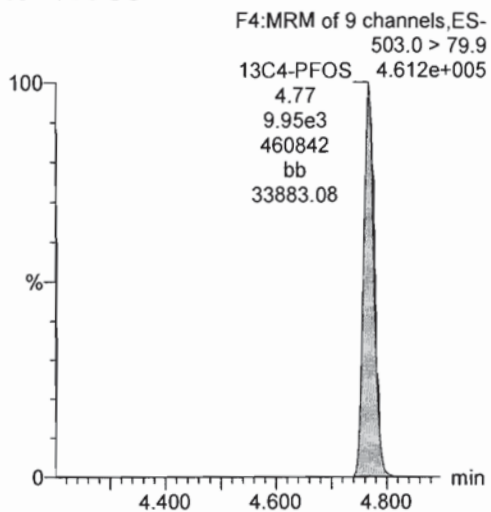
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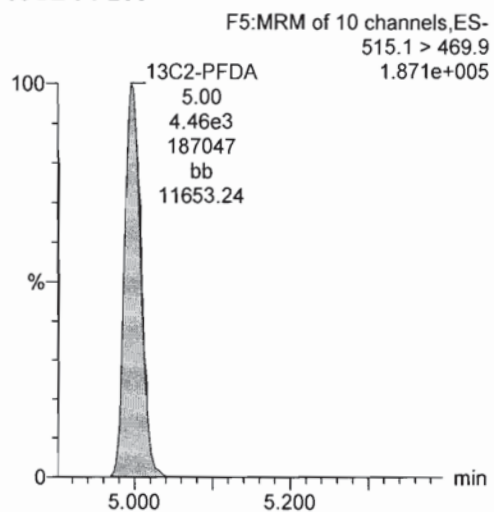
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13C4-PFOS



13C2-PFDA









Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lower	Control_ Limit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.443	5.00	9.99	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	5.00	9.99	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	5.00	9.99	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.477	5.38	10.8	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.16	5.38	10.8	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.12	5.38	10.8	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.439	4.95	9.91	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.95	9.91	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.95	9.91	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.462	5.22	10.4	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.13	5.22	10.4	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.09	5.22	10.4	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.438	4.95	9.89	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.95	9.89	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.95	9.89	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.437	4.93	9.86	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.93	9.86	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.93	9.86	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.430	4.86	9.71	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.05	4.86	9.71	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.01	4.86	9.71	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.452	5.10	10.2	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.10	5.10	10.2	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	5.10	10.2	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.440	4.97	9.94	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.97	9.94	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.97	9.94	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.427	4.82	9.64	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	4.82	9.64	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.00	4.82	9.64	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.422	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.991	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.435	4.91	9.83	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.91	9.83	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.91	9.83	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.415	4.68	9.36	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.01	4.68	9.36	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.973	4.68	9.36	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.420	4.74	9.49	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.74	9.49	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.987	4.74	9.49	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.427	4.82	9.63	1701794	S7L0013

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Sample_Name	CH2M_ Code	Analysis _Group	Analytical_ Method	PRC_ Code	Lab_ Code	Lab_Name	Leachate_ Method	Sample_ Basis	Extraction _Method	Result_T ype	Lab_QC_ Type	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB06-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:34	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB06-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:34	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB06-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:34	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB07-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:55	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB07-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:55	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB07-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 14:55	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB08-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:31	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB08-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:31	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB08-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:31	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB09-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 16:00	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB09-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 16:00	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB09-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 16:00	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB09-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 16:00	11/29/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 15:15	12/02/2017

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Leachate_ Date	Leachate_ Time	Extraction_ Date	Extraction_ Time	Analysis_ Date	Analysis_ Time	Lab_Sample_ID	Dilution	Run_ Number	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:36:00	1701794-16	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.82	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:36:00	1701794-16	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.82	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:36:00	1701794-16	1	-999			13C2-PFHxA	13C2-PFHxA	98.1	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:48:00	1701794-17	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.91	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:48:00	1701794-17	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.91	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:48:00	1701794-17	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.91	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	11:48:00	1701794-17	1	-999			13C2-PFHxA	13C2-PFHxA	95.6	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:00:00	1701794-18	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.81	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:00:00	1701794-18	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.81	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:00:00	1701794-18	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.81	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:00:00	1701794-18	1	-999			13C2-PFHxA	13C2-PFHxA	93.4	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:13:00	1701794-19	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.76	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:13:00	1701794-19	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.76	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:13:00	1701794-19	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.76	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	12:13:00	1701794-19	1	-999			13C2-PFHxA	13C2-PFHxA	98.5	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:28:00	B7L0006-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.00	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:28:00	B7L0006-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.00	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:28:00	B7L0006-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.00	NG_L	U	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:28:00	B7L0006-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA	103	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	01:51:00	B7L0006-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	18.8	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	01:51:00	B7L0006-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	24.1	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	01:51:00	B7L0006-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	18.6	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	01:51:00	B7L0006-BS1	1	-999			13C2-PFHxA	13C2-PFHxA	98.0	PCT_REC		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:03:00	B7L0006-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	19.8	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:03:00	B7L0006-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	22.3	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:03:00	B7L0006-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	19.6	NG_L		
N6247016D9000	0008		CHERRY_POINT_MCAS			20171202	15:15:00	20171205	02:03:00	B7L0006-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA	98.6	PCT_REC		

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lower	Control_ Limit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	4.82	9.63	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.00	4.82	9.63	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.435	4.91	9.81	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.91	9.81	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.91	9.81	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.426	4.81	9.61	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	4.81	9.61	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.00	4.81	9.61	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.422	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.991	4.76	9.53	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.443	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		SLSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		LSA	130	70					5.1				1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701794	S7L0013
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		LSA	130	70					5.1				1701794	S7L0013

**DATA VALIDATION SUMMARY REPORT  
MCOLF ATLANTIC, NORTH CAROLINA**

Client: CH2M HILL, Inc., Corvallis, Oregon  
 SDG: 1701794  
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California  
 Site: MCOLF Atlantic, North Carolina  
 Date: January 3, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-2RW01-1117	1701794-01	Water
2	CH-AT-2RW02-1117	1701794-02	Water
3	CH-AT-2RW03-1117	1701794-03	Water
4	CH-AT-2RW04-1117	1701794-04	Water
5	CH-AT-2RW05-1117	1701794-05	Water
6	CH-AT-2RW06-1117	1701794-06	Water
7	CH-AT-2RW07-1117	1701794-07	Water
8	CH-AT-2RW08-1117	1701794-08	Water
9	CH-AT-2RW09-1117	1701794-09	Water
10*	CH-AT-1RW80-1117	1701794-10	Water
11	CH-AT-2FB01-1117	1701794-11	Water
12	CH-AT-2FB02-1117	1701794-12	Water
13	CH-AT-2FB03-1117	1701794-13	Water
14	CH-AT-2FB04-1117	1701794-14	Water
15	CH-AT-2FB05-1117	1701794-15	Water
16	CH-AT-2FB06-1117	1701794-16	Water
17	CH-AT-2FB07-1117	1701794-17	Water
18	CH-AT-2FB08-1117	1701794-18	Water
19	CH-AT-2FB09-1117	1701794-19	Water
20*	CH-AT-2FB80-1117	1701794-20	Water

\* - Listed on COC but not received. Client Cancelled.

A full data validation was performed on the analytical data for nine water samples and nine aqueous field blank samples collected on November 27, 2017 by CH2M HILL at the MCOLF Atlantic site in Atlantic, North Carolina. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis  
PFCs

Method References  
USEPA Method 537

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Organic Superfund Methods Data Review,” January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

### ***Organics***

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

### **Data Usability Assessment**

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

### **Perfluorinated Compounds (PFCs)**

#### **Data Completeness, Case Narrative & Custody Documentation**

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.



### Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

### LC/MS Tuning

- All criteria were met.

### Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

### Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

### Method Blank

- The method blanks were free of contamination.

### Field QC Blank

- Field QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
CH-AT-2FB01-1117	None - ND	-	-	-
CH-AT-2FB02-1117	None - ND	-	-	-
CH-AT-2FB03-1117	None - ND	-	-	-
CH-AT-2FB04-1117	None - ND	-	-	-
CH-AT-2FB05-1117	None - ND	-	-	-
CH-AT-2FB06-1117	None - ND	-	-	-
CH-AT-2FB07-1117	None - ND	-	-	-
CH-AT-2FB08-1117	None - ND	-	-	-
CH-AT-2FB09-1117	None - ND	-	-	-

### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

### Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

### Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

### Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

- All criteria were met.

### Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:  Dated: 1/5/18  
Nancy Weaver  
Senior Chemist

<b>Data Qualifier</b>	<b>Definition</b>
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.



**Sample ID: CH-AT-2RW01-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-01							
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	27-Nov-17 11:20									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOA	ND	1.08	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
PFOS	ND	1.04	5.00	9.99		B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.250 L	05-Dec-17 02:41	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

*NW 11/31/18*

**Sample ID: CH-AT-2RW02-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701794-02
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	27-Nov-17 11:47		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.477	5.38	10.8		B7L0006	02-Dec-17	0.232 L	05-Dec-17 02:53	1
PFOA	ND	1.16	5.38	10.8		B7L0006	02-Dec-17	0.232 L	05-Dec-17 02:53	1
PFOS	ND	1.12	5.38	10.8		B7L0006	02-Dec-17	0.232 L	05-Dec-17 02:53	1
Labeled Standards	% Recovery	Limits			Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	97.3	70 - 130				B7L0006	02-Dec-17	0.232 L	05-Dec-17 02:53	1

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

*m1318*

**Sample ID: CH-AT-2RW03-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name: CH2M Hill	Matrix: Drinking Water	Lab Sample: 1701794-03	Column: BEH C18
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected: 27-Nov-17 12:13	Date Received: 29-Nov-17 09:37	

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.95	9.91		B7L0006	02-Dec-17	0.252 L	05-Dec-17 03:06	1
PFOA	ND	1.07	4.95	9.91		B7L0006	02-Dec-17	0.252 L	05-Dec-17 03:06	1
PFOS	ND	1.03	4.95	9.91		B7L0006	02-Dec-17	0.252 L	05-Dec-17 03:06	1
Labeled Standards	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	101	70 - 130			B7L0006	02-Dec-17	0.252 L	05-Dec-17 03:06	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

*nw/131.8*

**Sample ID: CH-AT-2RW04-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-04	Column:	BEH C18					
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 13:13	Date Received:	29-Nov-17 09:37					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOA	1.25	1.13	5.22	10.4	J	B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
PFOS	ND	1.09	5.22	10.4		B7L0006	02-Dec-17	0.239 L	05-Dec-17 03:18	1
<b>Labeled Standards</b>	<b>% Recovery</b>	<b>Limits</b>								
13C2-PFHxA	111	70 - 130								

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL

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

*Handwritten in red: NW 1/3/18*



**Sample ID: CH-AT-2RW05-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-05							
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	27-Nov-17 13:39									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7L0006	02-Dec-17	0.253 L	05-Dec-17 03:30	1
PFOA	ND	1.07	4.95	9.89		B7L0006	02-Dec-17	0.253 L	05-Dec-17 03:30	1
PFOA	ND	1.03	4.95	9.89		B7L0006	02-Dec-17	0.253 L	05-Dec-17 03:30	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.253 L	05-Dec-17 03:30	1	

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

*mw 13/18*

**Sample ID: CH-AT-2RW06-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-06	Column:	BEH C18					
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:34	Date Received:	29-Nov-17 09:37					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0006	02-Dec-17	0.254 L	05-Dec-17 03:43	1
PFOA	ND	1.06	4.93	9.86		B7L0006	02-Dec-17	0.254 L	05-Dec-17 03:43	1
PFOS	ND	1.03	4.93	9.86		B7L0006	02-Dec-17	0.254 L	05-Dec-17 03:43	1
<b>Labeled Standards</b>	<b>% Recovery</b>	<b>Limits</b>								
13C2-PFHxA	110	70 - 130				B7L0006	02-Dec-17	0.254 L	05-Dec-17 03:43	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

*mw: 131.8*

**Sample ID: CH-AT-2RW07-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-07							
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	27-Nov-17 14:55									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.71		B7L0006	02-Dec-17	0.257 L	05-Dec-17 03:55	1
PFOA	ND	1.05	4.86	9.71		B7L0006	02-Dec-17	0.257 L	05-Dec-17 03:55	1
PFOS	ND	1.01	4.86	9.71		B7L0006	02-Dec-17	0.257 L	05-Dec-17 03:55	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.257 L	05-Dec-17 03:55	1	

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

*11/31.8*

**Sample ID: CH-AT-2RW08-1117**

**EPA Method 537**

**Client Data**

Name: CH2M Hill  
 Project: CTO-08, MCOLF Atlantic PFAS DW Investigation

Matrix: Drinking Water  
 Date Collected: 27-Nov-17 15:31

**Laboratory Data**

Lab Sample: 1701794-08  
 Date Received: 29-Nov-17 09:37

Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.452	5.10	10.2		B7L0006	02-Dec-17	0.245 L	05-Dec-17 04:08	1
PFOA	ND	1.10	5.10	10.2		B7L0006	02-Dec-17	0.245 L	05-Dec-17 04:08	1
PFOS	ND	1.06	5.10	10.2		B7L0006	02-Dec-17	0.245 L	05-Dec-17 04:08	1
<b>Labeled Standards</b>	<b>% Recovery</b>	<b>Limits</b>								
13C2-PFHxA	107	70 - 130				B7L0006	02-Dec-17	0.245 L	05-Dec-17 04:08	1

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of Quantitation

LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL

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

*nwils18*

**Sample ID: CH-AT-2RW09-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701794-09
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	27-Nov-17 16:00		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0006	02-Dec-17	0.251 L	05-Dec-17 04:20	1
PFOA	ND	1.07	4.97	9.94		B7L0006	02-Dec-17	0.251 L	05-Dec-17 04:20	1
PFOS	ND	1.03	4.97	9.94		B7L0006	02-Dec-17	0.251 L	05-Dec-17 04:20	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	99.5	70 - 130								

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL

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

*nw 11/31/18*

**Sample ID: CH-AT-2FB01-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701794-11
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	27-Nov-17 11:20		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.64		B7L0006	02-Dec-17	0.259 L	05-Dec-17 04:33	1
PFOA	ND	1.04	4.82	9.64		B7L0006	02-Dec-17	0.259 L	05-Dec-17 04:33	1
PFOS	ND	1.00	4.82	9.64		B7L0006	02-Dec-17	0.259 L	05-Dec-17 04:33	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	101	70 - 130								

DL - Detection Limit      LOD - Limit of Detection      LCL-UCL - Lower control limit - upper control limit      When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 LOQ - Limit of quantitation      Results reported to the DL      Only the linear isomer is reported for all other analytes

*nw 131.8*

**Sample ID: CH-AT-2FB02-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-12	Column:	BEH C18					
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:47	Date Received:	29-Nov-17 09:37					
	Matrix:	Drinking Water								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 04:45	1
PFOA	ND	1.03	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 04:45	1
PFOS	ND	0.991	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 04:45	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	94.7	70 - 130		B7L0006	02-Dec-17	0.262 L	05-Dec-17 04:45	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL - Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

*mw 1/3/18*

**Sample ID: CH-AT-2FB03-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-13	Column:	BEH C18					
Project:	CTO-08. MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 12:13	Date Received:	29-Nov-17 09:37					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.83		B7L0006	02-Dec-17	0.254 L	05-Dec-17 04:57	1
PFOA	ND	1.06	4.91	9.83		B7L0006	02-Dec-17	0.254 L	05-Dec-17 04:57	1
PFOS	ND	1.02	4.91	9.83		B7L0006	02-Dec-17	0.254 L	05-Dec-17 04:57	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.254 L	05-Dec-17 04:57	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

*mw 11/3/18*



Sample ID: CH-AT-2FB04-1117		EPA Method 537									
Client Data		Laboratory Data									
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701794-14	Column:	BEH C18	Date Collected:	27-Nov-17 13:13	Date Received:	29-Nov-17 09:37
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.415	4.68	9.36		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1	
PFOA	ND	1.01	4.68	9.36		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1	
PFOS	ND	0.973	4.68	9.36		B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1	
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.267 L	05-Dec-17 05:10	1		

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL,- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

*Nov 13/18*

**Sample ID: CH-AT-2FB05-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701794-15
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	27-Nov-17 13:39		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7L0006	02-Dec-17	0.263 L	05-Dec-17 11:23	1
PFOA	ND	1.02	4.74	9.49		B7L0006	02-Dec-17	0.263 L	05-Dec-17 11:23	1
PFOS	ND	0.987	4.74	9.49		B7L0006	02-Dec-17	0.263 L	05-Dec-17 11:23	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0006	02-Dec-17	0.263 L	05-Dec-17 11:23	1	

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of Quantitation  
 LCL-UCL - Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHxA, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

*NW 1/3/18*

**Sample ID: CH-AT-2FB06-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701794-16
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Received:	29-Nov-17 09:37
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	27-Nov-17 14:34		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.63		B7L0006	02-Dec-17	0.260 L	05-Dec-17 11:36	1
PFOA	ND	1.04	4.82	9.63		B7L0006	02-Dec-17	0.260 L	05-Dec-17 11:36	1
PFOS	ND	1.00	4.82	9.63		B7L0006	02-Dec-17	0.260 L	05-Dec-17 11:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.1	70 - 130		B7L0006	02-Dec-17	0.260 L	05-Dec-17 11:36	1

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL - Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHxA, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

*mw 1136.8*

**Sample ID: CH-AT-2FB07-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701794-17	Column:	BEH C18					
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 14:55	Date Received:	29-Nov-17 09:37					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
	PFBS	ND	0.435	4.91	9.81		B7L0006	02-Dec-17	0.255 L	05-Dec-17 11:48
PFOA	ND	1.06	4.91	9.81		B7L0006	02-Dec-17	0.255 L	05-Dec-17 11:48	1
PFOS	ND	1.02	4.91	9.81		B7L0006	02-Dec-17	0.255 L	05-Dec-17 11:48	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	95.6	70 - 130		B7L0006	02-Dec-17	0.255 L	05-Dec-17 11:48	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of Quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFAS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

*mw 1/3/18*

**Sample ID: CH-AT-2FB08-1117**

**EPA Method 537**

Client Data		Matrix:		Drinking Water		Laboratory Data						
Name:	CH2M Hill	Date Collected:	27-Nov-17 15:31	Date Received:	29-Nov-17 09:37	Lab Sample:	1701794-18	Batch	Extracted	Samp Size	Analyzed	Dilution
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation											
Analyte	Conc. (mg/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBS	ND	0.426	4.81	9.61		B7L0006	02-Dec-17	0.260 L	05-Dec-17 12:00	1		
PFOA	ND	1.04	4.81	9.61		B7L0006	02-Dec-17	0.260 L	05-Dec-17 12:00	1		
PFOS	ND	1.00	4.81	9.61		B7L0006	02-Dec-17	0.260 L	05-Dec-17 12:00	1		
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C2-PFHxA	SURR	93.4	70 - 130		B7L0006	02-Dec-17	0.260 L	05-Dec-17 12:00	1			

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

*11/3/18*

**Sample ID: CH-AT-2FB09-1117**

**EPA Method 537**

**Client Data**

Name: CH2M Hill  
 Project: CTO-08, MCOLF Atlantic PFAS DW Investigation

Matrix: Drinking Water  
 Date Collected: 27-Nov-17 16:00

**Laboratory Data**

Lab Sample: 1701794-19  
 Date Received: 29-Nov-17 09:37

Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 12:13	1
PFOA	ND	1.03	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 12:13	1
PFOS	ND	0.991	4.76	9.53		B7L0006	02-Dec-17	0.262 L	05-Dec-17 12:13	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	98.5	70 - 130								

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

*Nov 13/18*





- Legend**
- Proposed Sample Location
  - ⊠ Public Water Supply Well
  - ➡ Direction of Groundwater Flow
  - MCOLF Atlantic - 1-mile zone
  - - - Base Boundary
  - ▭ Site Boundary (suspected source)
  - ▭ Parcels

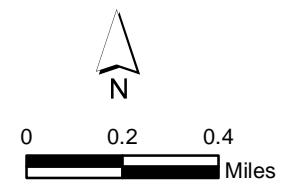


Figure 3  
Proposed Sampling Locations  
Marine Corps Outlying Landing Field Atlantic  
Atlantic Beach, North Carolina