



**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 1701874**

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

February 2019



December 14, 2017

Vista Work Order No. 1701874

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 December 07, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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.

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

Sincerely,

Karoly Volpender
for

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. 1701874**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.

Analytical Notes:**EPA Method 537**

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.

A Laboratory Fortified Blank (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
1701874-01	CH-AT-1RW123-1217	04-Dec-17 11:22	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-02	CH-AT-1FB123-1217	04-Dec-17 11:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-03	CH-AT-1RW124-1217	04-Dec-17 12:03	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-04	CH-AT-1FB123-1217	04-Dec-17 12:04	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-05	CH-AT-1RW125-1217	04-Dec-17 12:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-06	CH-AT-1FB125-1217	04-Dec-17 12:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-07	CH-AT-1RW126-1217	04-Dec-17 13:13	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-08	CH-AT-1FB126-1217	04-Dec-17 13:14	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-09	CH-AT-1RW127-1217	04-Dec-17 14:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-10	CH-AT-1FB127-1217	04-Dec-17 14:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-11	CH-AT-1RW128-1217	04-Dec-17 14:45	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-12	CH-AT-1FB128-1217	04-Dec-17 14:46	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-13	CH-AT-1RW129-1217	04-Dec-17 15:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-14	CH-AT-1FB129-1217	04-Dec-17 15:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-15	CH-AT-1RW130-1217	05-Dec-17 09:07	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-16	CH-AT-1FB130-1217	05-Dec-17 09:08	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-17	CH-AT-1RW132-1217	05-Dec-17 10:15	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-18	CH-AT-1FB132-1217	05-Dec-17 10:16	07-Dec-17 09:23	HDPE Bottle, 250 mL

Vista Project: 1701874

Client Project: CTO-08/MCOLF ATLANTIC PFAS INV.

ANALYTICAL RESULTS

Sample ID: LFBD											EPA Method 537					
Name: CH2M Hill				Lab Sample: B7L0065-BS1/B7L0065-BSD1				Date Extracted: 11-Dec-17								
Project: CTO-08/MCOLF ATLANTIC PFAS INV.				QC Batch: B7L0065				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	36.5	35.4	103		39.8	35.4	113	8.62		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
PFOA	48.3	40.0	121		46.4	40.0	116	4.04		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
PFOS	41.1	37.0	111		40.8	37.0	110	0.793		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C2-PFHxA	SURR		114				98.0			70-130		13-Dec-17 10:10	1	13-Dec-17 10:23	1	

Sample ID: CH-AT-1RW123-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-01 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
PFOA	ND	1.07	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
PFOS	ND	1.03	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	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, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.				

Sample ID: CH-AT-1FB123-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-02 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
PFOA	ND	1.02	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
PFOS	ND	0.983	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.5	70 - 130			B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	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.				

Sample ID: CH-AT-1RW124-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-03 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOA	ND	1.08	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOS	ND	1.04	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	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-1FB124-1217					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 12:04					Laboratory Data Lab Sample: 1701874-04 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
PFOA	ND	1.03	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
PFOS	ND	0.996	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.2	70 - 130			B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

Sample ID: CH-AT-1RW125-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-05 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
PFOA	ND	1.06	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
PFOS	ND	1.02	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.9	70 - 130			B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	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-1FB125-1217					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 12:24					Laboratory Data Lab Sample: 1701874-06 Date Received: 07-Dec-17 09:23 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		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
PFOA	ND	1.08	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
PFOS	ND	1.04	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130			B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

Sample ID: CH-AT-1RW126-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-07 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
PFOA	ND	1.07	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
PFOS	ND	1.03	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.1	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	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-1FB126-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-08 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.0	70 - 130			B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	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-1RW127-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-09 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.451	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
PFOA	ND	1.10	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
PFOS	ND	1.06	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	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-1FB127-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 14:24					Laboratory Data					
					Lab Sample: 1701874-10		Column: BEH C18			
					Date Received: 07-Dec-17 09:23					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
PFOA	ND	1.05	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
PFOS	ND	1.01	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.7	70 - 130			B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

Sample ID: CH-AT-1RW128-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-11 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
PFOA	ND	1.04	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
PFOS	ND	1.01	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130			B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	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-1FB128-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 14:46					Laboratory Data Lab Sample: 1701874-12 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
PFOA	ND	1.03	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
PFOS	ND	0.996	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1	
DL - Detection Limit		LOD - Limit of Detection LOO - 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-1RW129-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 15:23					Laboratory Data Lab Sample: 1701874-13 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
PFOA	ND	1.06	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
PFOS	ND	1.02	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	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-1FB129-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 15:24					Laboratory Data Lab Sample: 1701874-14 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

Sample ID: CH-AT-1RW130-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-15 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.442	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
PFOA	ND	1.08	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
PFOS	ND	1.04	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	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-1FB130-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-16 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.434	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
PFOA	ND	1.06	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
PFOS	ND	1.02	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130			B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	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-1RW132-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-17 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
PFOA	ND	1.06	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
PFOS	ND	1.02	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	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-1FB132-1217					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 05-Dec-17 10:16					Laboratory Data Lab Sample: 1701874-18 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
PFOA	ND	1.13	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
PFOS	ND	1.09	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130			B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
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



Submit by Email*

CTO-48 679584:FLFS

FOR LABORATORY USE ONLY

Laboratory Project ID: 1701874

Temp 20.4 °C

Storage ID: WR-2

Storage Secured:
Yes ☒ No ☐

CHAIN OF CUSTODY RECORD

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051

Sampler: J. TOWNS/A. WINEBRENNER
(Name)

TAT: (Check One)

Standard ☐ 21 days

Rush (surcharge may apply)

☐ 14 days ☒ 7 days Specify:

Invoice to: Name

TIFFANY HILL

Company

CH2M HILL

Address

1100 NE CIRCLE BLVD CORVALLIS

City

State

OR

Zip

97330

Ph#

541-768-3109

Fax #

Relinquished by: (Printed Name and Signature)

MORGAN BRUNO

Date:

12/6/17

Time:

15:00

Received by: (Signature and Printed Name)

B. Benedict B. Benedict

Date:

12/07/17

Time:

0937

Relinquished by: (Printed Name and Signature)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

See "Sample Log-in Checklist" for additional sample information

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.:

ATTN: Martha Maier

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDF	PCDD/Fs	2378-TCDD	2378-TCDF	PCDD/Fs	2378-TCDD	2378-TCDF	PCDD/Fs	TOTAL	COPLANAR PCBs	209 CONGENERS	PBDEs	PAHs	WHO-29	250A
CH-AT-1RW128-1217	12/04/17	1445		2	P	DW																x
CH-AT-1FB128-1217	12/04/17	1446		2	P	DW																x
CH-AT-1RW129-1217	12/04/17	1523		2	P	DW																x
CH-AT-1FB129-1217	12/04/17	1524		2	P	DW																x
CH-AT-1RW130-1217	12/5/17	1407		2	P	DW																x
CH-AT-1FB130-1217	12/5/17	1408		2	P	DW																x
CH-AT-1RW131-1217	12/5/17	1415		2	P	DW																x
CH-AT-1FB131-1217	12/5/17	1416		2	P	DW																x

Sample Log-in Checklist

 Vista Work Order #: 1701874 TAT 7 day

Samples Arrival:	Date/Time 12/07/17 0923	Initials: JBB	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 12/07/17 1049	Initials: WWS	Location: WR-2 Shelf/Rack: 2-4
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None		
Temp °C: 2.3 (uncorrected)	Time: 0935	Thermometer ID: IR-1	
Temp °C: 2.4 (corrected)	Probe used: Yes ☐ No ☒		

		YES	NO	NA
Adequate Sample Volume Received?		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 78878593 4719	✓		
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 ₂ S ₂ O ₃ ☒ Trizma ☐ None	☒ Yes ☐ No ☐ NA		
Shipping Container	☒ Vista ☐ Client ☒ Retain ☐ Return ☐ Dispose			

Comments:



December 14, 2017

Vista Work Order No. 1701874

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 December 07, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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.

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

Sincerely,

Karoly Volpente
for

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. 1701874**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.

Analytical Notes:**EPA Method 537**

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.

A Laboratory Fortified Blank (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
1701874-01	CH-AT-1RW123-1217	04-Dec-17 11:22	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-02	CH-AT-1FB123-1217	04-Dec-17 11:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-03	CH-AT-1RW124-1217	04-Dec-17 12:03	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-04	CH-AT-1FB123-1217	04-Dec-17 12:04	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-05	CH-AT-1RW125-1217	04-Dec-17 12:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-06	CH-AT-1FB125-1217	04-Dec-17 12:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-07	CH-AT-1RW126-1217	04-Dec-17 13:13	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-08	CH-AT-1FB126-1217	04-Dec-17 13:14	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-09	CH-AT-1RW127-1217	04-Dec-17 14:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-10	CH-AT-1FB127-1217	04-Dec-17 14:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-11	CH-AT-1RW128-1217	04-Dec-17 14:45	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-12	CH-AT-1FB128-1217	04-Dec-17 14:46	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-13	CH-AT-1RW129-1217	04-Dec-17 15:23	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-14	CH-AT-1FB129-1217	04-Dec-17 15:24	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-15	CH-AT-1RW130-1217	05-Dec-17 09:07	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-16	CH-AT-1FB130-1217	05-Dec-17 09:08	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-17	CH-AT-1RW132-1217	05-Dec-17 10:15	07-Dec-17 09:23	HDPE Bottle, 250 mL
1701874-18	CH-AT-1FB132-1217	05-Dec-17 10:16	07-Dec-17 09:23	HDPE Bottle, 250 mL

Vista Project: 1701874

Client Project: CTO-08/MCOLF ATLANTIC PFAS INV.

ANALYTICAL RESULTS

Sample ID: LFBD											EPA Method 537					
Name: CH2M Hill				Lab Sample: B7L0065-BS1/B7L0065-BSD1				Date Extracted: 11-Dec-17								
Project: CTO-08/MCOLF ATLANTIC PFAS INV.				QC Batch: B7L0065				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	36.5	35.4	103		39.8	35.4	113	8.62		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
PFOA	48.3	40.0	121		46.4	40.0	116	4.04		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
PFOS	41.1	37.0	111		40.8	37.0	110	0.793		70-130	30	13-Dec-17 10:10	1	13-Dec-17 10:23	1	
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C2-PFHxA	SURR		114				98.0			70-130		13-Dec-17 10:10	1	13-Dec-17 10:23	1	

Sample ID: CH-AT-1RW123-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-01 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
PFOA	ND	1.07	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
PFOS	ND	1.03	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48	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, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.				

Sample ID: CH-AT-1FB123-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-02 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
PFOA	ND	1.02	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
PFOS	ND	0.983	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.5	70 - 130			B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	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.				

Sample ID: CH-AT-1RW124-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-03 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOA	ND	1.08	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOS	ND	1.04	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	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-1FB124-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-04 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
PFOA	ND	1.03	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
PFOS	ND	0.996	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.2	70 - 130			B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	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-1RW125-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-05 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
PFOA	ND	1.06	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
PFOS	ND	1.02	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.9	70 - 130			B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	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-1FB125-1217					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 12:24					Laboratory Data Lab Sample: 1701874-06 Date Received: 07-Dec-17 09:23 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		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
PFOA	ND	1.08	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
PFOS	ND	1.04	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130			B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	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-1RW126-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-07 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
PFOA	ND	1.07	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
PFOS	ND	1.03	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.1	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02	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-1FB126-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-08 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.0	70 - 130			B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	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-1RW127-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-09 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.451	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
PFOA	ND	1.10	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
PFOS	ND	1.06	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27	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-1FB127-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-10 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
PFOA	ND	1.05	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
PFOS	ND	1.01	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.7	70 - 130			B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40	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-1RW128-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 04-Dec-17 14:45					Laboratory Data Lab Sample: 1701874-11 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
PFOA	ND	1.04	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
PFOS	ND	1.01	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130			B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

Sample ID: CH-AT-1FB128-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-12 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
PFOA	ND	1.03	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
PFOS	ND	0.996	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	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-1RW129-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-13 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
PFOA	ND	1.06	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
PFOS	ND	1.02	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17	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-1FB129-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-14 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	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-1RW130-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 05-Dec-17 09:07					Laboratory Data Lab Sample: 1701874-15 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.442	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
PFOA	ND	1.08	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
PFOS	ND	1.04	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42	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-1FB130-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-16 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.434	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
PFOA	ND	1.06	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
PFOS	ND	1.02	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130			B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	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-1RW132-1217										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.					Laboratory Data Lab Sample: 1701874-17 Date Received: 07-Dec-17 09:23					Column: BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
PFOA	ND	1.06	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
PFOS	ND	1.02	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07	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-1FB132-1217					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV. Matrix: Drinking Water Date Collected: 05-Dec-17 10:16					Laboratory Data Lab Sample: 1701874-18 Date Received: 07-Dec-17 09:23 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
PFOA	ND	1.13	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
PFOS	ND	1.09	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130			B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19	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.			
		LOO - Limit of quantitation		Results reported to the DL.			Only the linear isomer is reported for all other analytes.			

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
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



Submit by Email*

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY

Laboratory Project ID: 1701874

Temp 2.4 °C

Storage ID: WR-2

Storage Secured:
Yes ☒ No ☐

TAT: (Check One)

Standard ☐ 21 days

Rush (surcharge may apply)

☐ 14 days ☒ 7 days Specify: _____

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051

Sampler: J. TOWNS/A. WINEBRENNER

(Name)

Invoice to: Name

TIFFANY HILL

Company

CH2M HILL

Address

1100 NE CIRCLE BLVD

City

CORVALLIS

State

OR

Zip

97330

Ph#

541-768-3109

Fax #

Relinquished by: (Printed Name and Signature)

MORGAN BRUNO

Date:

12/6/17

Time:

1:50 PM

Received by: (Signature and Printed Name)

B. Benedict

Date:

12/07/17

Time:

0837

Relinquished by: (Printed Name and Signature)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

See "Sample Log-in Checklist" for additional sample information

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.:

ATTN: Martha Maier

Add Analysis(es) Requested

Container(s)

Sample ID Date Time Location/Sample Description

CH-AT-1RW123-1217	12/04/17	1122		2	P	DW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Special Instructions/Comments: 7 DAY TAT

PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND
DOCUMENTATION
AND RESULTS TO:

Name: TIFFANY HILL

Company: CH2M

Address: 1100 NE CIRCLE BLVD STE 300

City: CORVALLIS

State: OR

Zip: 97330

Phone: 541-768-3109

Fax:

Email: TIFFANY.HILL@CH2M.COM

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other*Bottle Preservative Type: ☐ T = Thiosulfate,☒ O = Other TRIZMAMatrix Types: DW = Drinking Water, EF = Effluent, PP = Pulp/Paper,
SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B=Blood/Serum
O = Other DW



Submit by Email*

CTO-48 679584:FLFS

FOR LABORATORY USE ONLY

Laboratory Project ID: 1701874

Temp 20.4 °C

Storage ID: WR-2

Storage Secured:
Yes ☒ No ☐

CHAIN OF CUSTODY RECORD

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051

Sampler: J. TOWNS/A. WINEBRENNER
(Name)

TAT: (Check One)

Standard ☐ 21 days

Rush (surcharge may apply)

☐ 14 days ☒ 7 days Specify:Invoice to: Name
TIFFANY HILLCompany
CH2M HILLAddress
1100 NE CIRCLE BLVD CORVALLISCity
ORState
97330Zip
541-768-3109

Fax #

Relinquished by: (Printed Name and Signature)

MORGAN BRUNO

Date:

12/6/17

Time:

15:00

Received by: (Signature and Printed Name)

B. Benedict B. Benedict

Date:

12/07/17

Time:

0937

Relinquished by: (Printed Name and Signature)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

See "Sample Log-in Checklist" for additional sample information

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.:

ATTN: Martha Maier

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDF	PCDDs	2378-TCDD	2378-TCDF	PCDDs	2378-TCDD	2378-TCDF	PCDDs	TOTAL	COPLANAR	209 CONGENERS	PBDS	PAHs	WHO-29	250A, 250B, 250C
CH-AT-1RW128-1217	12/04/17	1445		2	P	DW																X
CH-AT-1FB128-1217	12/04/17	1446		2	P	DW																X
CH-AT-1RW129-1217	12/04/17	1523		2	P	DW																X
CH-AT-1FB129-1217	12/04/17	1524		2	P	DW																X
CH-AT-1RW130-1217	12/5/17	0907		2	P	DW																X
CH-AT-1FB130-1217	12/5/17	0900		2	P	DW																X
CH-AT-1RW131-1217	12/5/17	1015		2	P	DW																X
CH-AT-1FB131-1217	12/5/17	1016		2	P	DW																X

Sample Log-in Checklist

Vista Work Order #: 1701874 TAT 7 day

Samples Arrival:	Date/Time 12/07/17 0923	Initials: JBB	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 12/07/17 1049	Initials: WWS	Location: WR-2 Shelf/Rack: 2-4
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None		
Temp °C: 2.3 (uncorrected)	Time: 0935	Thermometer ID: IR-1	
Temp °C: 2.4 (corrected)	Probe used: Yes ☒ No ☐		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 78878593 4719	✓	
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 ₂ S ₂ O ₃ ☒ Trizma ☐ None ☐ Yes ☒ No ☐ NA		
Shipping Container	☒ Vista ☐ Client ☒ Retain ☐ Return ☐ Dispose		

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: 1701874



Prep Expiration: 2017-Dec-18
Client: CH2M Hill

Workorder Due: 14-Dec-17 00:00

TAT: 7

Method: 537 PFAS DW DoD Unmodified
Matrix: Drinking Water

Prep Batch: 8720065

Prep Data Entered: 12-12-17
Date and Initials

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

Initial Sequence: _____

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701874-01	"A"	☒	☒	CH-AT-1RW123-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-02		☒	☒	CH-AT-1FB123-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-03		☒	☒	CH-AT-1RW124-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-04		☒	☒	CH-AT-1FB124-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-05		☒	☒	CH-AT-1RW125-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-06		☒	☒	CH-AT-1FB125-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-07		☒	☒	CH-AT-1RW126-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-08		☒	☒	CH-AT-1FB126-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-09		☒	☒	CH-AT-1RW127-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-10		☒	☒	CH-AT-1FB127-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-11		☒	☒	CH-AT-1RW128-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-12		☒	☒	CH-AT-1FB128-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-13		☒	☒	CH-AT-1RW129-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-14		☒	☒	CH-AT-1FB129-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-15		☒	☒	CH-AT-1RW130-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-16		☒	☒	CH-AT-1FB130-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-17		☒	☒	CH-AT-1RW132-1217		WR-2 A-4	HDPE Bottle, 250 mL
1701874-18		☒	☒	CH-AT-1FB132-1217		WR-2 A-4	HDPE Bottle, 250 mL

Pre-Prep Check Out: HB 12/11/17
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initials/Date: HB 12/11/17
Spike Reconciled Initials/Date: HN 12/11/17
VialBoxID: 0 die

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0065

Chemist: HC

Prep Date/Time: 11-Dec-17 10:50

Prepared using: LCMS - SPE Extraction-LCMS

Balance ID: HRMS-8

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B7L0065-BLK1 (A)	NA	NA	(0.250) ✓	HC HN 12/11/17	HN 12/11/17	HC 12/12/17
☐	B7L0065-BS1	↓	↓	(0.250) ✓			
☐	B7L0065-BSD1	↓	↓	(0.250) ✓			
☐	1701874-01	280.68	27.35	0.25333 ✓			
☐	1701874-02	292.21	27.71	0.26450 ✓			
☐	1701874-03	276.79	27.26	0.24953 ✓			
☐	1701874-04	288.74	27.66	0.26108 ✓			
☐	1701874-05	282.54	27.71	0.25483 ✓			
☐	1701874-06	277.70	27.59	0.25011 ✓			
☐	1701874-07	279.56	28.17	0.25139 ✓			
☐	1701874-08	279.61	27.66	0.25195 ✓			
☐	1701874-09	273.31	27.57	0.24574 ✓			
☐	1701874-10	284.83	27.58	0.25725 ✓			
☐	1701874-11	285.39	27.00	0.25839 ✓			
☐	1701874-12	288.73	27.58	0.26115 ✓			
☐	1701874-13	281.27	27.07	0.25420 ✓			

SS/IS: <u>17L0515, 20mL (V2)</u> NS: <u>1712601, 10mL (V2)</u> IS/RS: <u>17L0516, 20mL (V2)</u> <u>WBF 12/11/17</u>	SPE Chem: <u>Strata-X 33um 200mg 6mL</u> Lot#: <u>517-003100</u> Ele SOLV: <u>MeOH</u> Lot#: <u>1685209324</u> Final Volume(s) <u>1mL</u>	Notes: (A) 1.25 grams Tri zma preservative added to QCs. <u>HB 12/11/17</u>
--	---	--

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Work Order 1701874

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0065

Chemist: 712

Prep Date/Time: 11-Dec-17 10:50

Prepared using: LCMS - SPE Extraction-LCMS

1500
712

BalanceID: HRM1-8

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	1701874-14	279.07	26.95	0.25212 ✓	712 HN 12/11/17	HN 12/11/17	712 VC 12/12/17
☐	1701874-15	278.38	27.76	0.25062 ✓	↓	↓	↓
☐	1701874-16	282.67	27.41	0.25526 ✓			
☐	1701874-17	283.70	27.92	0.25578 ✓			
☐	1701874-18	266.48	27.67	0.23881 ✓			

SS/IS: 17L0515, 20mL (V2)
 NS: 17I2601, 10mL (V2)
 IS/RS: 17L0516, 20mL (V2)
 148F
12/12/17

SPE Chem: Strata X 33um 200mg 62mL
 Lot#: 517-003100
 Elc SOLV: MeOH
 Lot#: I685209324
 Final Volume(s) 1mL

Notes:

Comments: Assume 1 g = 1 mL

Cen = Centrifuged
 Work Order 1701874

Batch: B7L0065

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701874-01	0.25333 ✓	NA	NA	1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-02	0.2645 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-03	0.24953 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-04	0.26108 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-05	0.25483 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-06	0.25011 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-07	0.25139 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-08	0.25195 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-09	0.24574 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-10	0.25725 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-11	0.25839 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-12	0.26115 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-13	0.2542 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-14	0.25212 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-15	0.25062 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-16	0.25526 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-17	0.25578 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701874-18	0.23881 ✓			1000	11-Dec-17 15:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
B7L0065-BLK1	0.25			1000	11-Dec-17 15:00	HAC				QC
B7L0065-BS1	0.25			1000	11-Dec-17 15:00	HAC	1712601	10		QC
B7L0065-BSD1	0.25			1000	11-Dec-17 15:00	HAC	1712601	10		QC

HC
12-12-17

SAMPLE DATA –EPA METHOD 537

Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-6.qld

Last Altered: Wednesday, December 13, 2017 15:45:45 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:50:05 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BLK1 LRB 0.25, Description: LRB, Name: 171213G1_6, Date: 13-Dec-2017, Time: 10:35:43

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.890e3		0.250			
2	2 PFOA	413 > 368.70	6.437e1	9.428e3		0.250	4.32	0.336	
3	3 PFOS	499.00 > 79.90		8.890e3		0.250			
4	4 13C2-PFHxA	315.0 > 269.80	4.333e3	9.428e3	0.443	0.250	3.38	41.5	104
5	5 13C2-PFDA	515.10 > 469.90	4.347e3	9.428e3	0.509	0.250	4.97	36.2	90.5
6	6 13C2-PFOA	414.90 > 369.70	9.428e3	9.428e3	1.000	0.250	4.32	40.0	100
7	7 13C4-PFOS	503.0 > 79.90	8.890e3	8.890e3	1.000	0.250	4.73	115	100

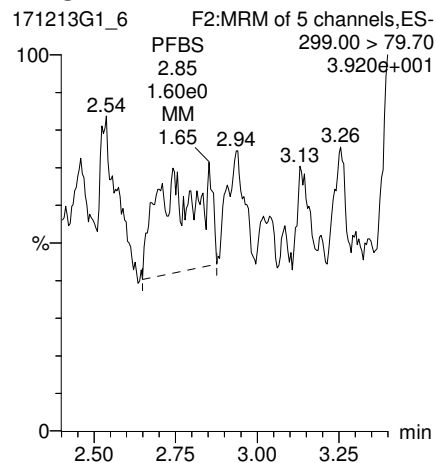
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Printed: Wednesday, December 13, 2017 15:50:05 Pacific Standard Time

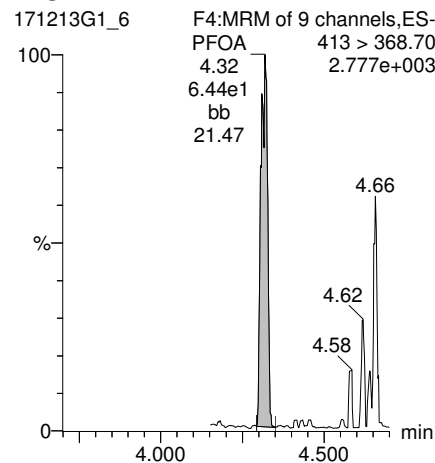
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BLK1 LRB 0.25, Description: LRB, Name: 171213G1_6, Date: 13-Dec-2017, Time: 10:35:43, Instrument: , Lab: , User:

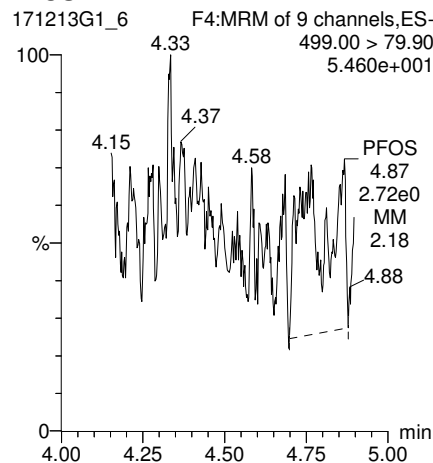
PFBS



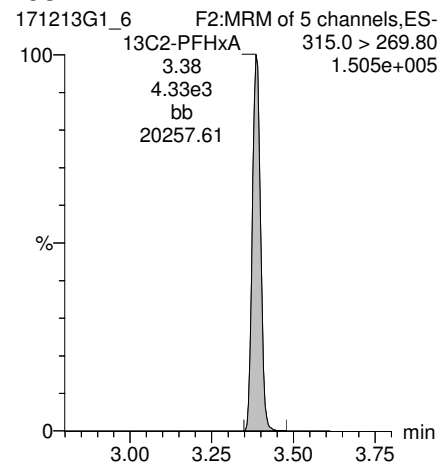
PFOA



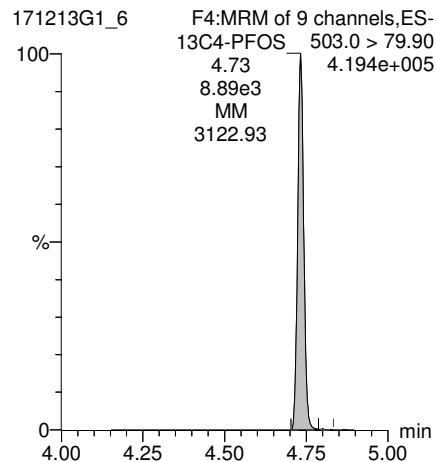
PFOS



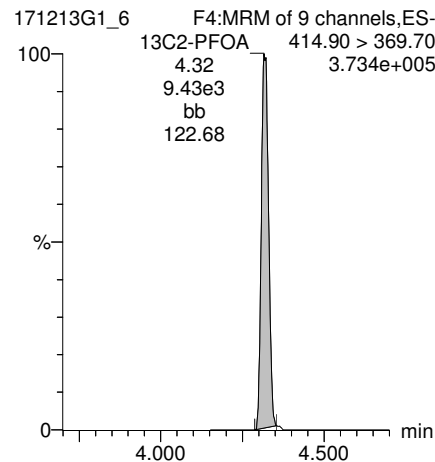
13C2-PFHxA



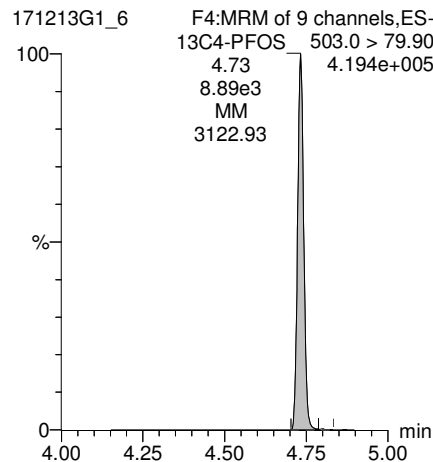
13C4-PFOS



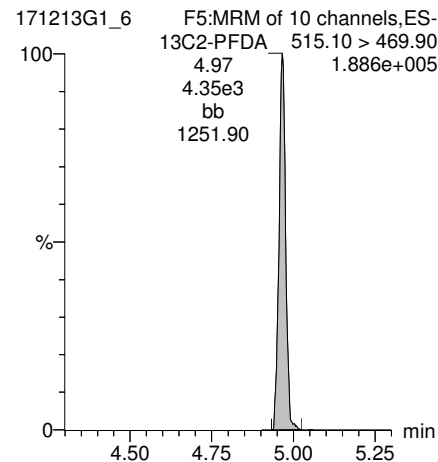
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-4.qld

Last Altered: Wednesday, December 13, 2017 15:39:51 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:50:32 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BS1 LFB 0.25, Description: LFB, Name: 171213G1_4, Date: 13-Dec-2017, Time: 10:10:50

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	2.242e3	8.794e3		0.250	3.04	36.5	103
2	2 PFOA	413 > 368.70	8.519e3	8.686e3		0.250	4.32	48.3	121
3	3 PFOS	499.00 > 79.90	3.787e3	8.794e3		0.250	4.73	41.1	111
4	4 13C2-PFHxA	315.0 > 269.80	4.399e3	8.686e3	0.443	0.250	3.38	45.7	114
5	5 13C2-PFDA	515.10 > 469.90	4.666e3	8.686e3	0.509	0.250	4.96	42.2	105
6	6 13C2-PFOA	414.90 > 369.70	8.686e3	8.686e3	1.000	0.250	4.32	40.0	100
7	7 13C4-PFOS	503.0 > 79.90	8.794e3	8.794e3	1.000	0.250	4.73	115	100

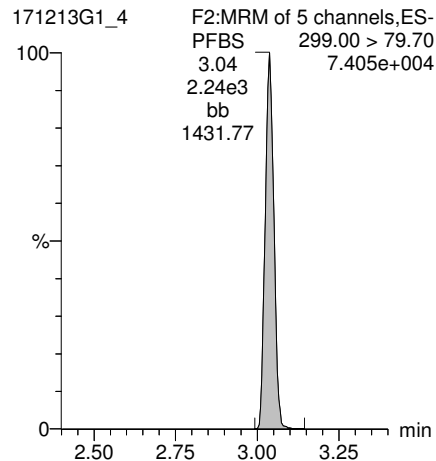
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-4.qld

Last Altered: Wednesday, December 13, 2017 15:39:51 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:50:32 Pacific Standard Time

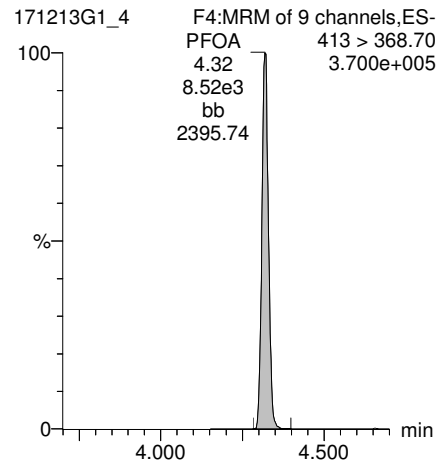
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BS1 LFB 0.25, Description: LFB, Name: 171213G1_4, Date: 13-Dec-2017, Time: 10:10:50, Instrument: , Lab: , User:

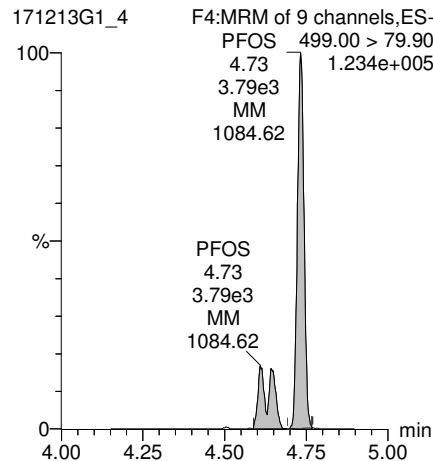
PFBS



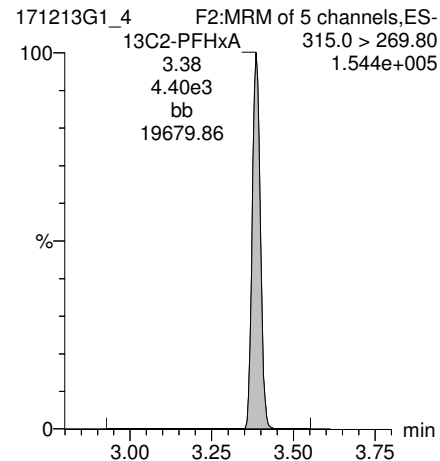
PFOA



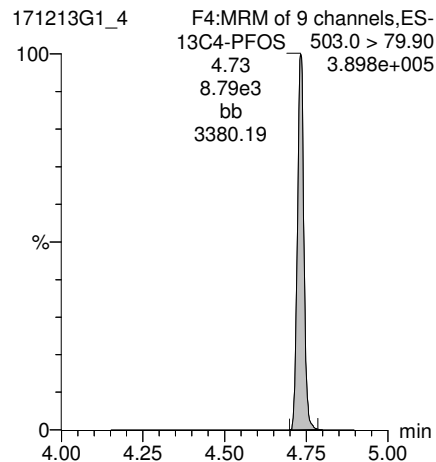
PFOS



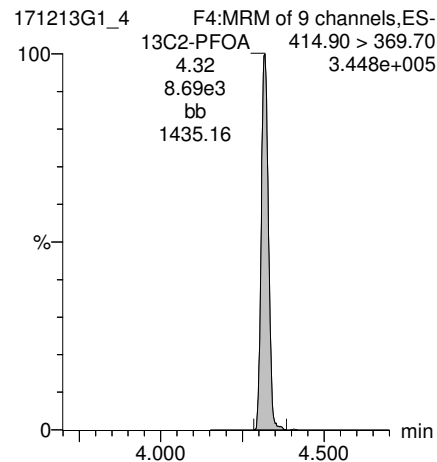
13C2-PFHxA



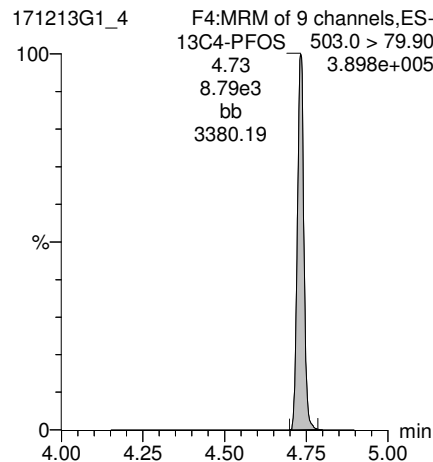
13C4-PFOS



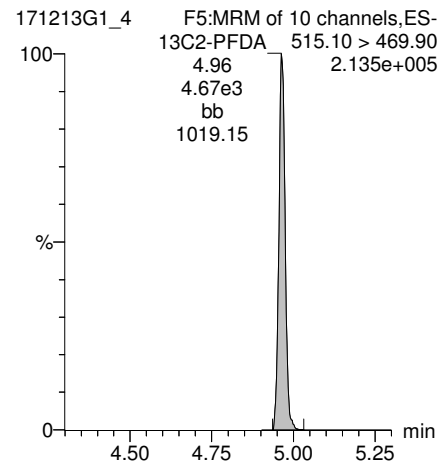
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-5.qld

Last Altered: Wednesday, December 13, 2017 15:44:15 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:50:17 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BSD1 LFB D 0.25, Description: LFB D, Name: 171213G1_5, Date: 13-Dec-2017, Time: 10:23:16

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	2.384e3	8.581e3		0.250	3.04	39.8	113
2	2 PFOA	413 > 368.70	8.644e3	9.178e3		0.250	4.32	46.4	116
3	3 PFOS	499.00 > 79.90	3.666e3	8.581e3		0.250	4.73	40.8	110
4	4 13C2-PFHxA	315.0 > 269.80	3.985e3	9.178e3	0.443	0.250	3.38	39.2	98.0
5	5 13C2-PFDA	515.10 > 469.90	3.602e3	9.178e3	0.509	0.250	4.97	30.8	77.1
6	6 13C2-PFOA	414.90 > 369.70	9.178e3	9.178e3	1.000	0.250	4.32	40.0	100
7	7 13C4-PFOS	503.0 > 79.90	8.581e3	8.581e3	1.000	0.250	4.73	115	100

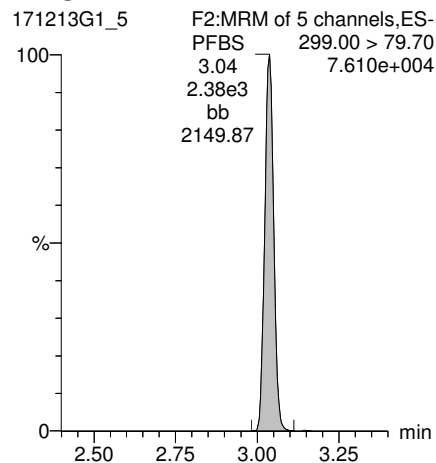
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Last Altered: Wednesday, December 13, 2017 15:44:15 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:50:17 Pacific Standard Time

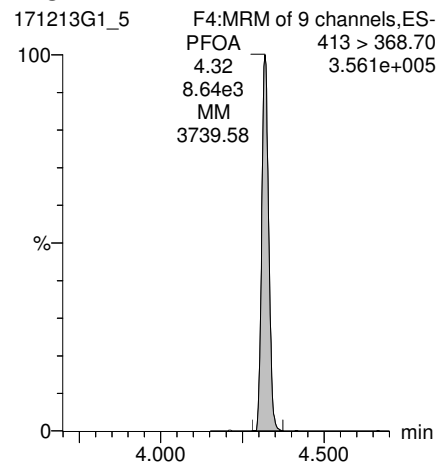
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: B7L0065-BSD1 LFB D 0.25, Description: LFB D, Name: 171213G1_5, Date: 13-Dec-2017, Time: 10:23:16, Instrument: , Lab: , User:

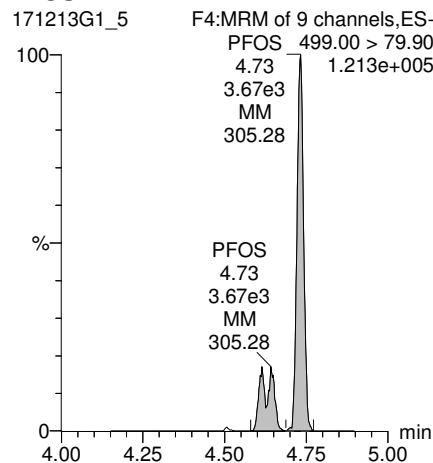
PFBS



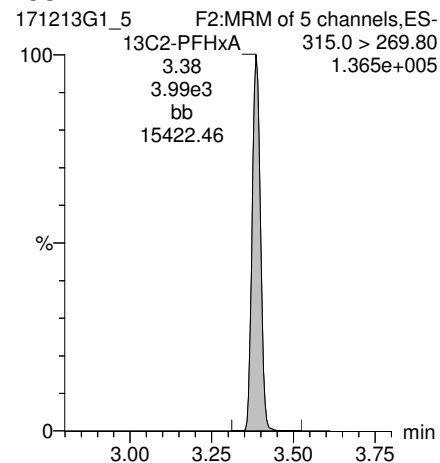
PFOA



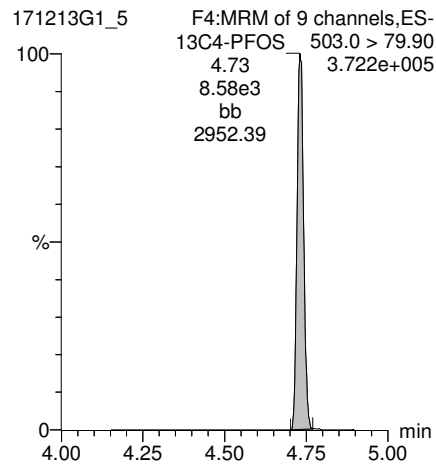
PFOS



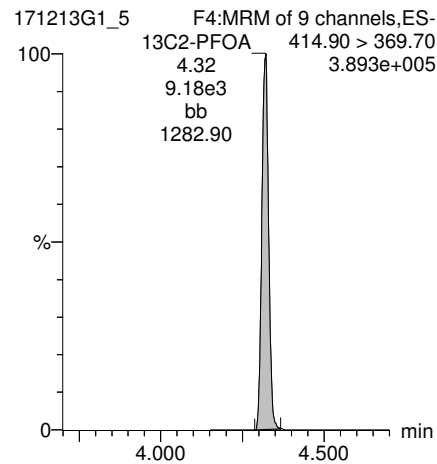
13C2-PFHxA



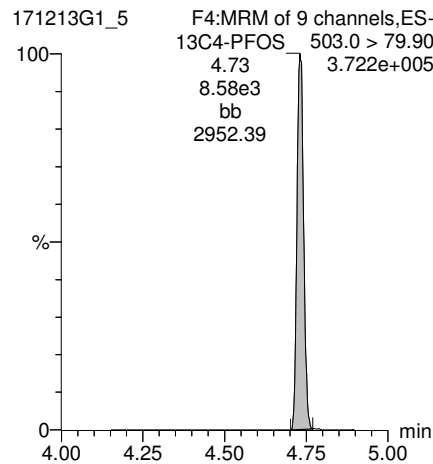
13C4-PFOS



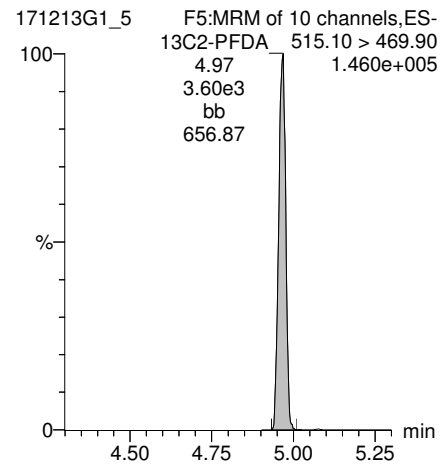
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-7.qld

Last Altered: Wednesday, December 13, 2017 15:46:58 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:49:47 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-01 CH-AT-1RW123-1217 0.25, Description: CH-AT-1RW123-1217, Name: 171213G1_7, Date: 13-Dec-2017, Time: 10:48:09

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.852e3		0.253			
2	2 PFOA	413 > 368.70	5.352e1	9.651e3		0.253	4.32	0.270	
3	3 PFOS	499.00 > 79.90		8.852e3		0.253			
4	4 13C2-PFHxA	315.0 > 269.80	4.338e3	9.651e3	0.443	0.253	3.38	40.1	101
5	5 13C2-PFDA	515.10 > 469.90	4.099e3	9.651e3	0.509	0.253	4.96	32.9	83.4
6	6 13C2-PFOA	414.90 > 369.70	9.651e3	9.651e3	1.000	0.253	4.32	39.5	100
7	7 13C4-PFOS	503.0 > 79.90	8.852e3	8.852e3	1.000	0.253	4.73	113	100

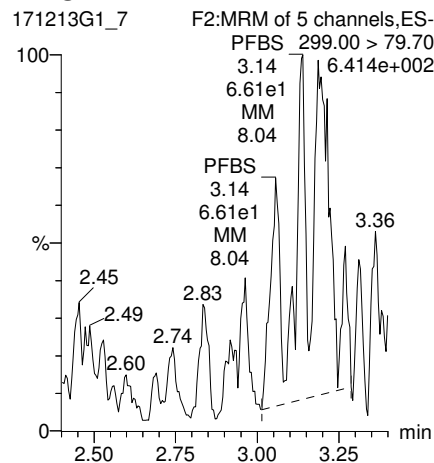
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Last Altered: Wednesday, December 13, 2017 15:46:58 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:49:47 Pacific Standard Time

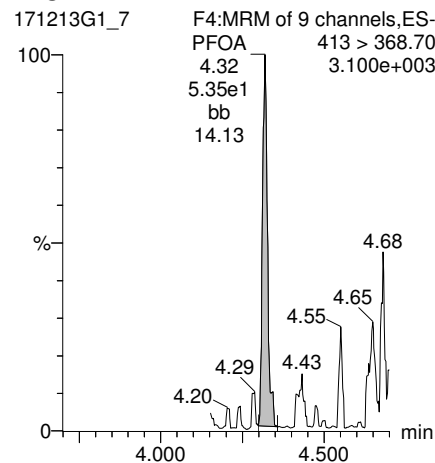
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-01 CH-AT-1RW123-1217 0.25, Description: CH-AT-1RW123-1217, Name: 171213G1_7, Date: 13-Dec-2017, Time: 10:48:09, Instrument: , Lab: , User:

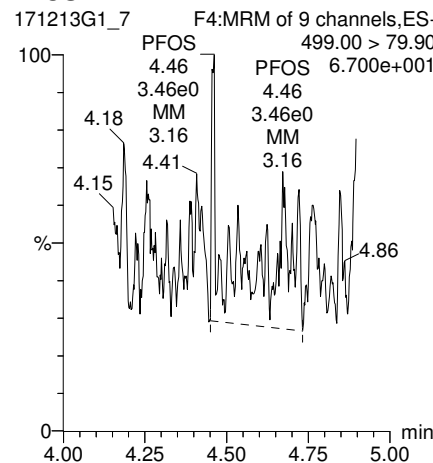
PFBS



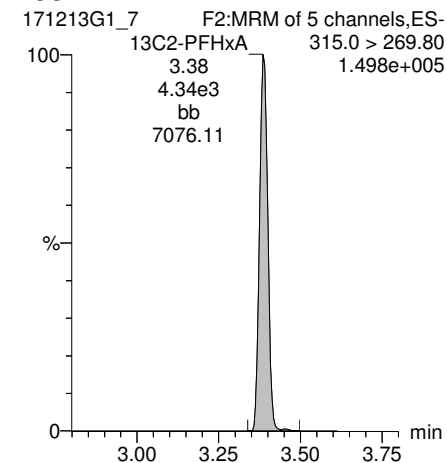
PFOA



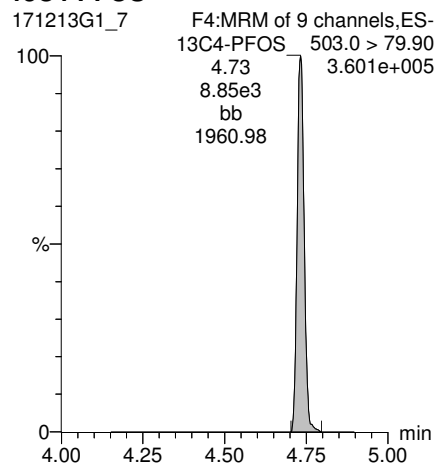
PFOS



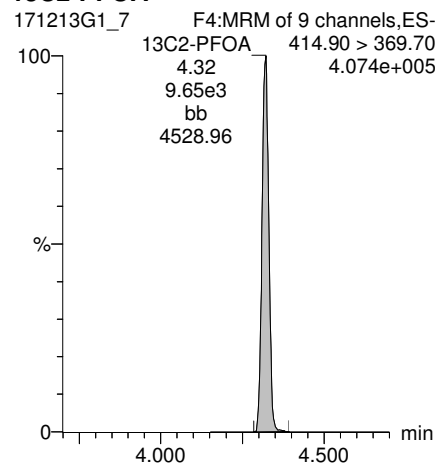
13C2-PFHxA



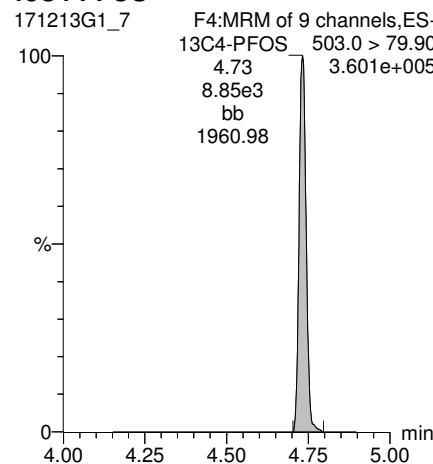
13C4-PFOS



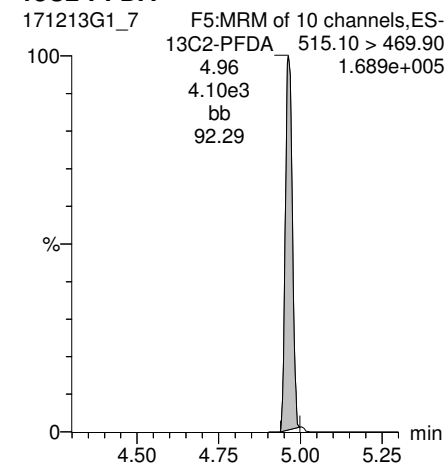
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-8.qld

Last Altered: Wednesday, December 13, 2017 15:48:17 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:49:09 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-02 CH-AT-1FB123-1217 0.25, Description: CH-AT-1FB123-1217, Name: 171213G1_8, Date: 13-Dec-2017, Time: 11:00:36

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.492e3		0.265			
2	2 PFOA	413 > 368.70	1.639e1	9.627e3		0.265	4.33	0.0793	
3	3 PFOS	499.00 > 79.90		8.492e3		0.265			
4	4 13C2-PFHxA	315.0 > 269.80	4.159e3	9.627e3	0.443	0.265	3.39	36.9	97.5
5	5 13C2-PFDA	515.10 > 469.90	4.207e3	9.627e3	0.509	0.265	4.96	32.4	85.8
6	6 13C2-PFOA	414.90 > 369.70	9.627e3	9.627e3	1.000	0.265	4.32	37.8	100
7	7 13C4-PFOS	503.0 > 79.90	8.492e3	8.492e3	1.000	0.265	4.73	109	100

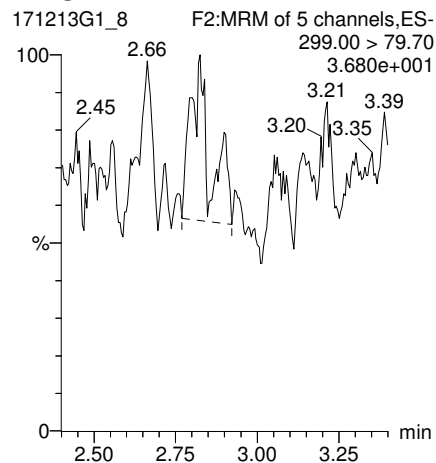
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-8.qld

Last Altered: Wednesday, December 13, 2017 15:48:17 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:49:09 Pacific Standard Time

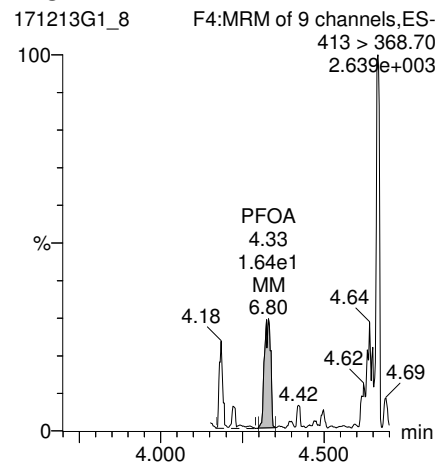
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-02 CH-AT-1FB123-1217 0.25, Description: CH-AT-1FB123-1217, Name: 171213G1_8, Date: 13-Dec-2017, Time: 11:00:36, Instrument: , Lab: , User:

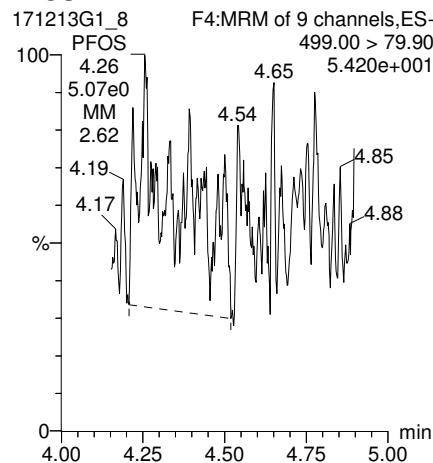
PFBS



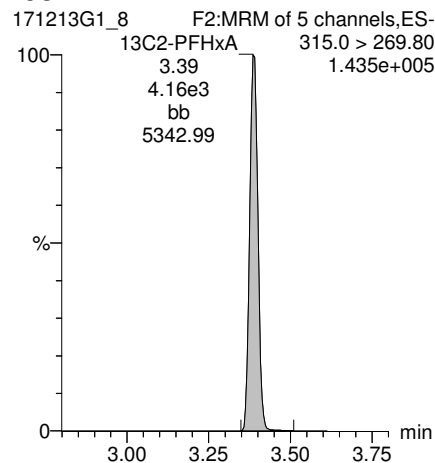
PFOA



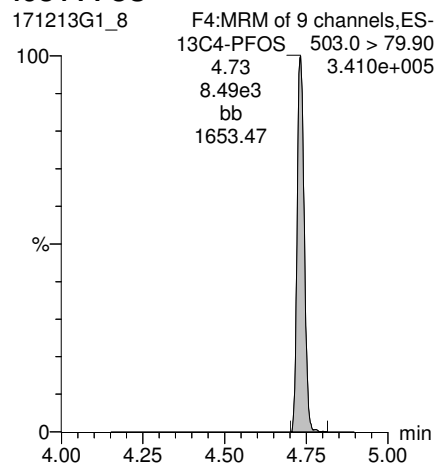
PFOS



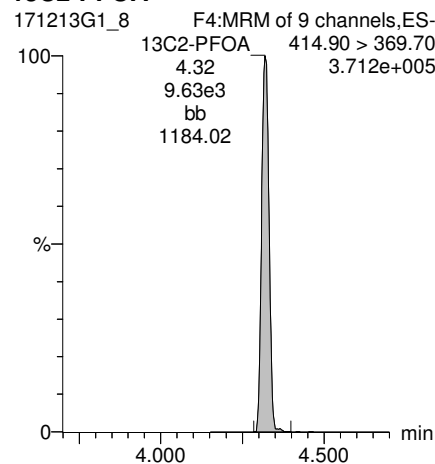
13C2-PFHxA



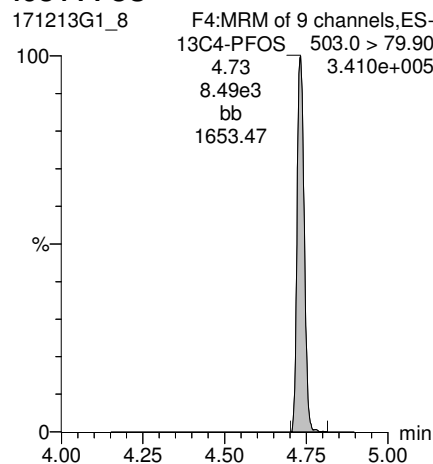
13C4-PFOS



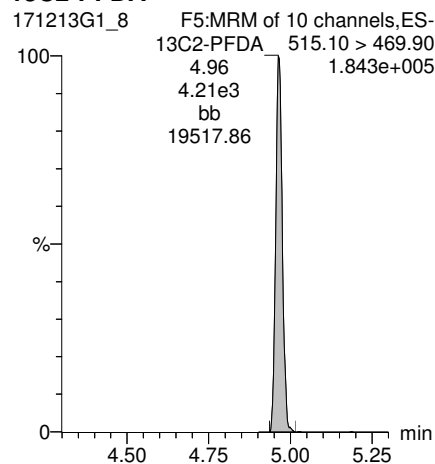
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-9.qld

Last Altered: Wednesday, December 13, 2017 15:51:10 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:51:36 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-03 CH-AT-1RW124-1217 0.25, Description: CH-AT-1RW124-1217, Name: 171213G1_9, Date: 13-Dec-2017, Time: 11:13:04

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		9.310e3		0.250			
2	2 PFOA	413 > 368.70	3.380e1	9.462e3		0.250	4.31	0.176	
3	3 PFOS	499.00 > 79.90		9.310e3		0.250			
4	4 13C2-PFHxA	315.0 > 269.80	4.281e3	9.462e3	0.443	0.250	3.39	40.9	102
5	5 13C2-PFDA	515.10 > 469.90	4.386e3	9.462e3	0.509	0.250	4.96	36.5	91.0
6	6 13C2-PFOA	414.90 > 369.70	9.462e3	9.462e3	1.000	0.250	4.32	40.1	100
7	7 13C4-PFOS	503.0 > 79.90	9.310e3	9.310e3	1.000	0.250	4.73	115	100

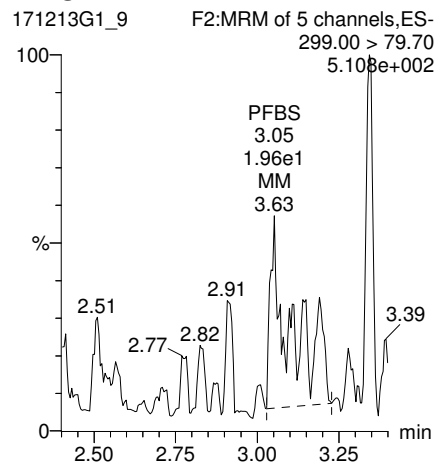
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Last Altered: Wednesday, December 13, 2017 15:51:10 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:51:36 Pacific Standard Time

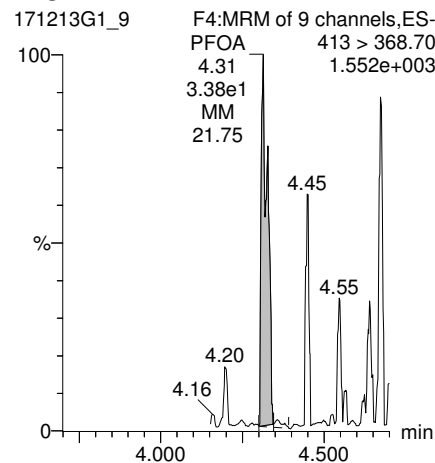
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-03 CH-AT-1RW124-1217 0.25, Description: CH-AT-1RW124-1217, Name: 171213G1_9, Date: 13-Dec-2017, Time: 11:13:04, Instrument: , Lab: , User:

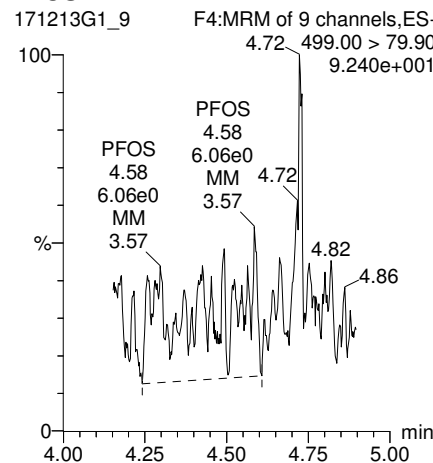
PFBS



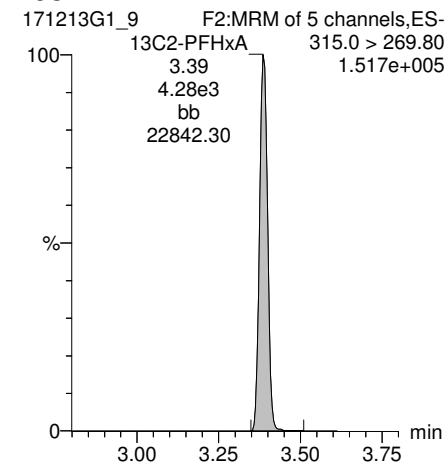
PFOA



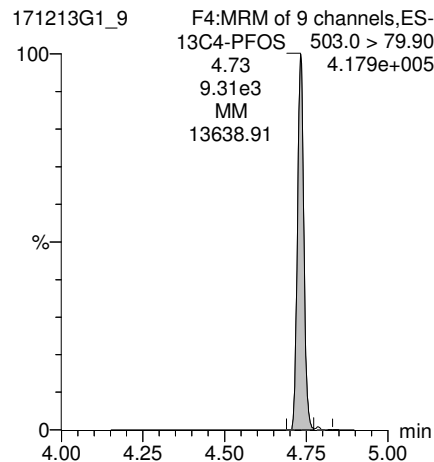
PFOS



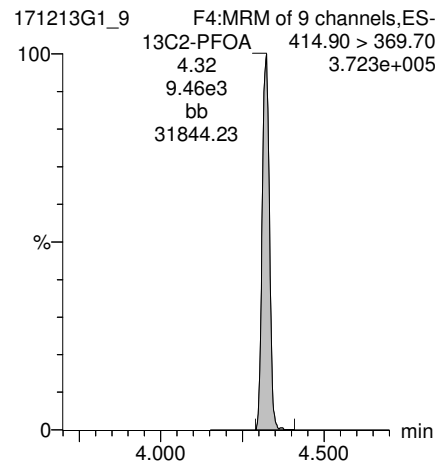
13C2-PFHxA



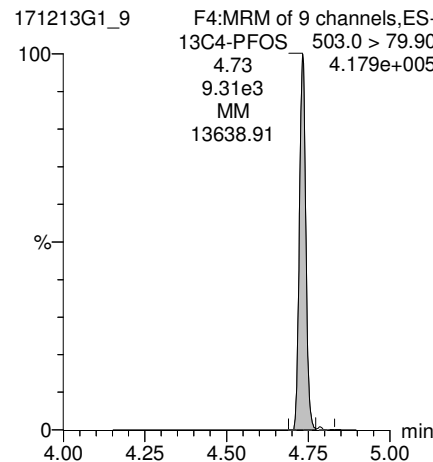
13C4-PFOS



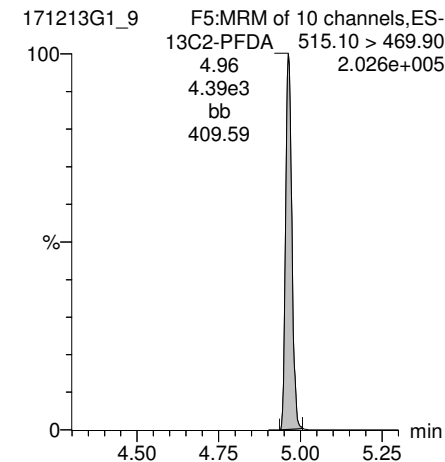
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-10.qld

Last Altered: Wednesday, December 13, 2017 15:52:22 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:52:43 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-04 CH-AT-1FB124-1217 0.25, Description: CH-AT-1FB124-1217, Name: 171213G1_10, Date: 13-Dec-2017, Time: 11:25:32

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.706e3		0.261			
2	2 PFOA	413 > 368.70	3.499e1	9.686e3		0.261	4.33	0.170	
3	3 PFOS	499.00 > 79.90		8.706e3		0.261			
4	4 13C2-PFHxA	315.0 > 269.80	3.956e3	9.686e3	0.443	0.261	3.39	35.3	92.2
5	5 13C2-PFDA	515.10 > 469.90	4.334e3	9.686e3	0.509	0.261	4.97	33.7	87.9
6	6 13C2-PFOA	414.90 > 369.70	9.686e3	9.686e3	1.000	0.261	4.32	38.3	100
7	7 13C4-PFOS	503.0 > 79.90	8.706e3	8.706e3	1.000	0.261	4.74	110	100

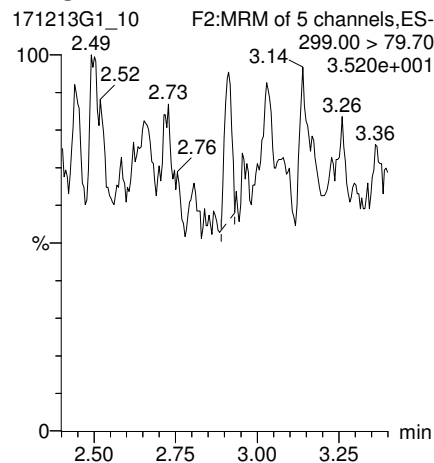
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-10.qld

Last Altered: Wednesday, December 13, 2017 15:52:22 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:52:43 Pacific Standard Time

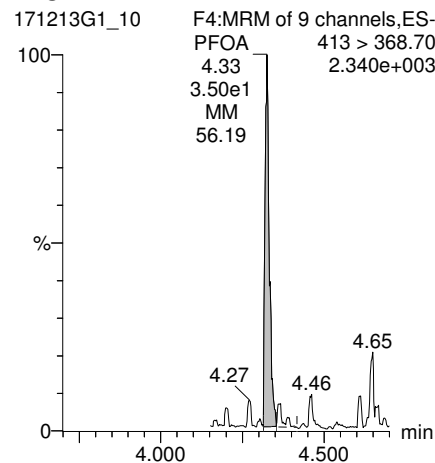
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-04 CH-AT-1FB124-1217 0.25, Description: CH-AT-1FB124-1217, Name: 171213G1_10, Date: 13-Dec-2017, Time: 11:25:32, Instrument: , Lab: , User:

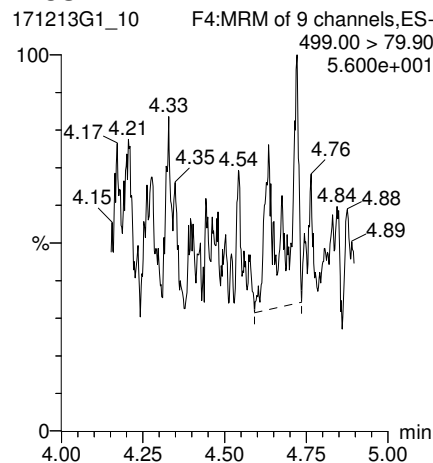
PFBS



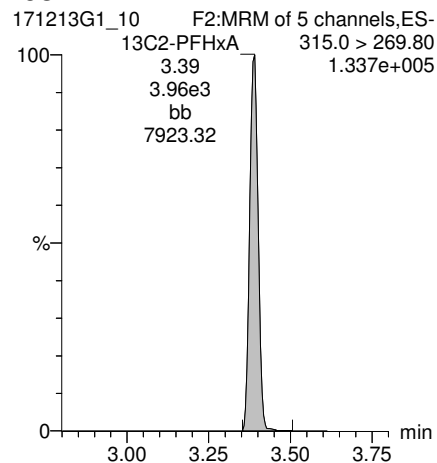
PFOA



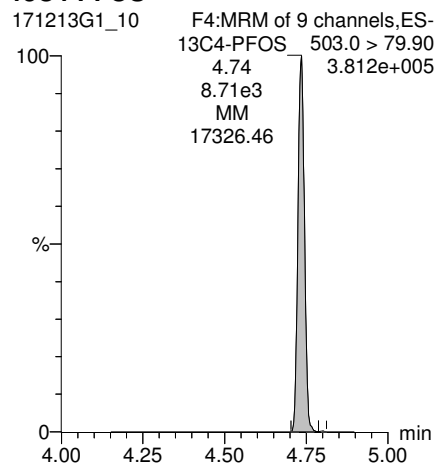
PFOS



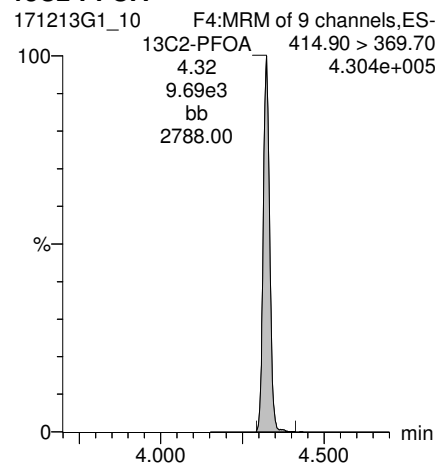
13C2-PFHxA



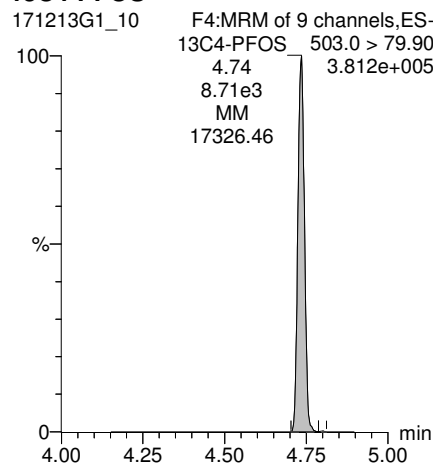
13C4-PFOS



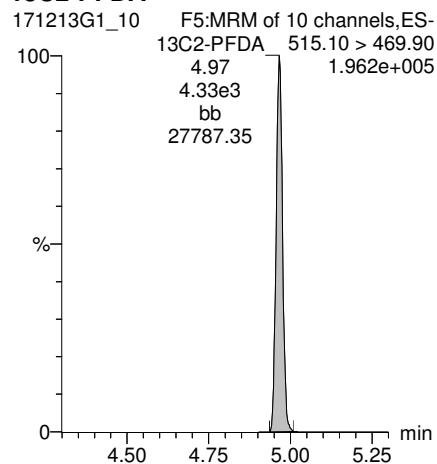
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-11.qld

Last Altered: Wednesday, December 13, 2017 15:53:34 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:54:23 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-05 CH-AT-1RW125-1217 0.25, Description: CH-AT-1RW125-1217, Name: 171213G1_11, Date: 13-Dec-2017, Time: 11:37:57

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.542e3		0.255			
2	2 PFOA	413 > 368.70	7.599e1	8.836e3		0.255	4.32	0.416	
3	3 PFOS	499.00 > 79.90		8.542e3		0.255			
4	4 13C2-PFHxA	315.0 > 269.80	3.872e3	8.836e3	0.443	0.255	3.38	38.8	98.9
5	5 13C2-PFDA	515.10 > 469.90	3.922e3	8.836e3	0.509	0.255	4.96	34.2	87.2
6	6 13C2-PFOA	414.90 > 369.70	8.836e3	8.836e3	1.000	0.255	4.32	39.2	100
7	7 13C4-PFOS	503.0 > 79.90	8.542e3	8.542e3	1.000	0.255	4.73	113	100

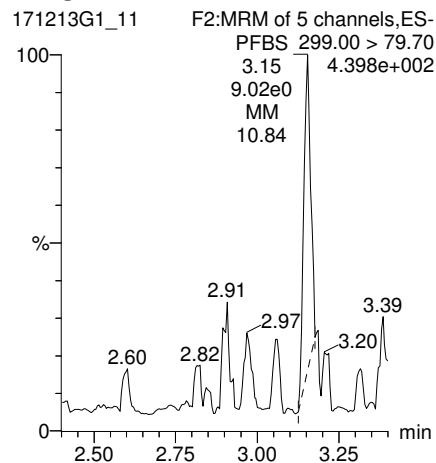
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Last Altered: Wednesday, December 13, 2017 15:53:34 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:54:23 Pacific Standard Time

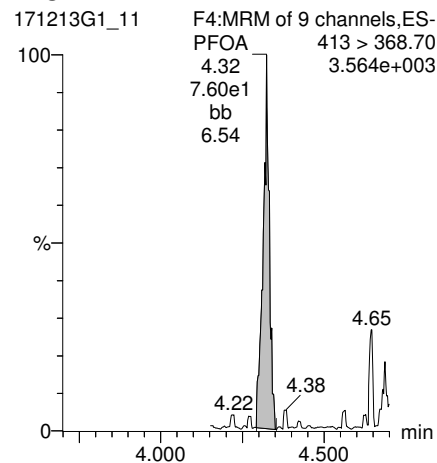
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-05 CH-AT-1RW125-1217 0.25, Description: CH-AT-1RW125-1217, Name: 171213G1_11, Date: 13-Dec-2017, Time: 11:37:57, Instrument: , Lab: , User:

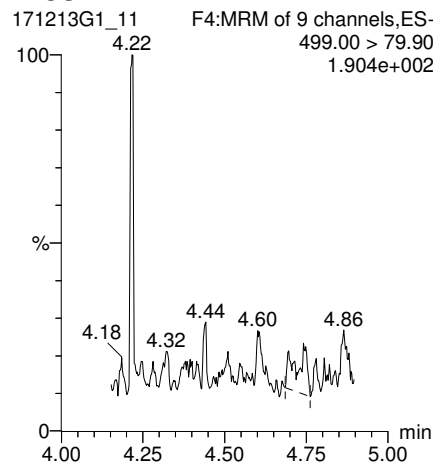
PFBS



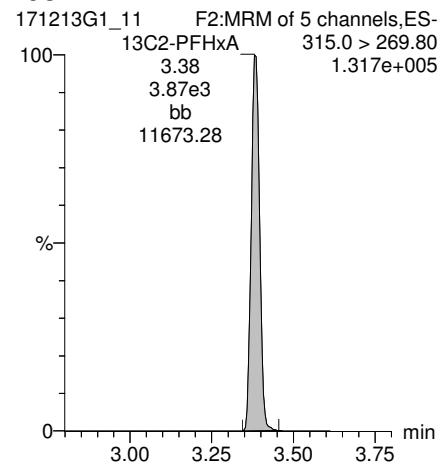
PFOA



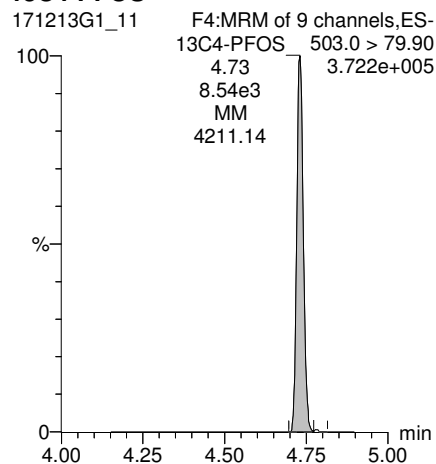
PFOS



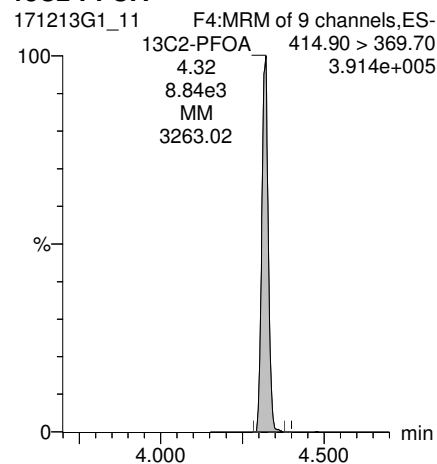
13C2-PFHxA



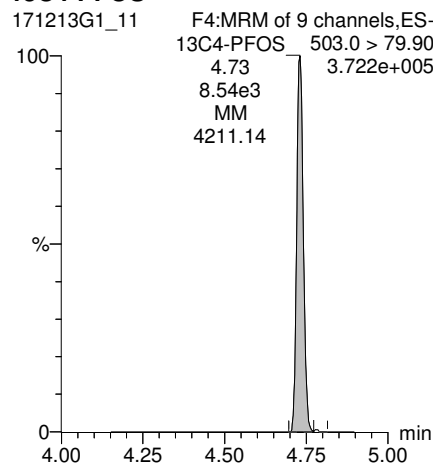
13C4-PFOS



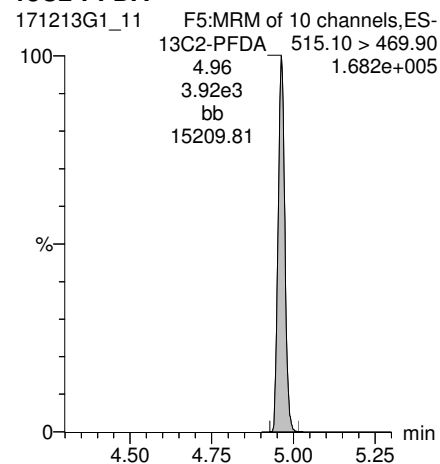
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-12.qld

Last Altered: Wednesday, December 13, 2017 16:03:31 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:03:55 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-06 CH-AT-1FB125-1217 0.25, Description: CH-AT-1FB125-1217, Name: 171213G1_12, Date: 13-Dec-2017, Time: 11:50:21

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.500e3		0.250			
2	2 PFOA	413 > 368.70	5.371e1	9.162e3		0.250	4.32	0.289	
3	3 PFOS	499.00 > 79.90		8.500e3		0.250			
4	4 13C2-PFHxA	315.0 > 269.80	4.017e3	9.162e3	0.443	0.250	3.39	39.6	99.0
5	5 13C2-PFDA	515.10 > 469.90	4.541e3	9.162e3	0.509	0.250	4.96	38.9	97.3
6	6 13C2-PFOA	414.90 > 369.70	9.162e3	9.162e3	1.000	0.250	4.32	40.0	100
7	7 13C4-PFOS	503.0 > 79.90	8.500e3	8.500e3	1.000	0.250	4.73	115	100

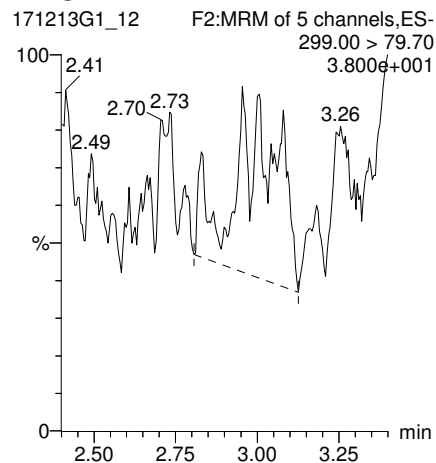
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Last Altered: Wednesday, December 13, 2017 16:03:31 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:03:55 Pacific Standard Time

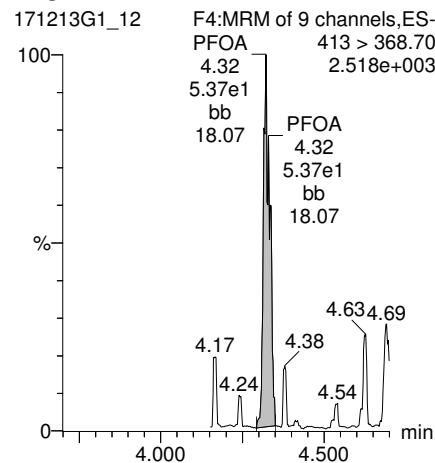
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-06 CH-AT-1FB125-1217 0.25, Description: CH-AT-1FB125-1217, Name: 171213G1_12, Date: 13-Dec-2017, Time: 11:50:21, Instrument: , Lab: , User:

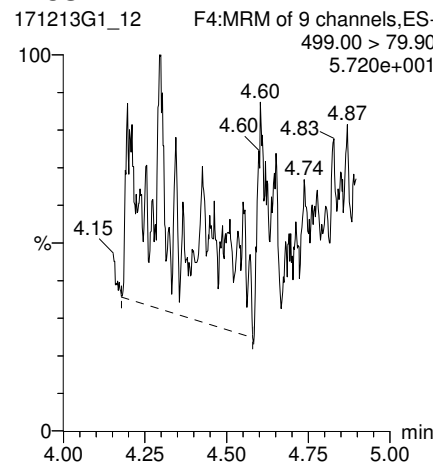
PFBS



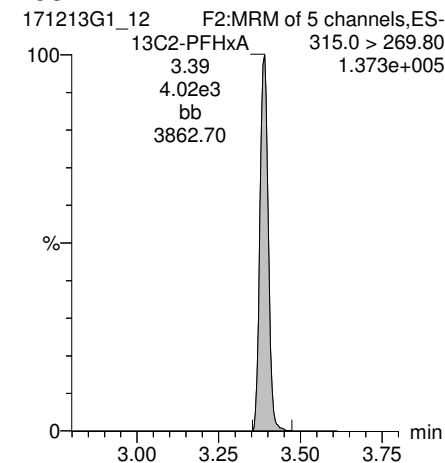
PFOA



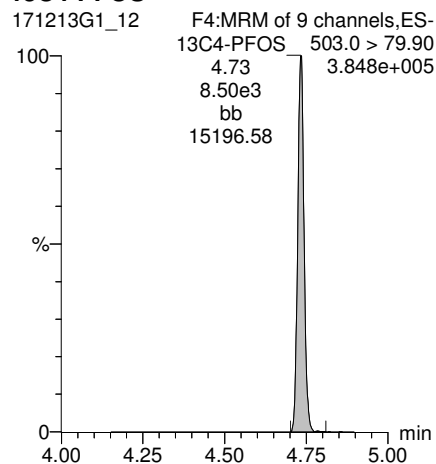
PFOS



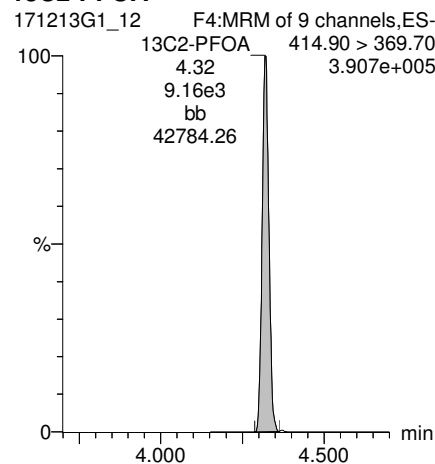
13C2-PFHxA



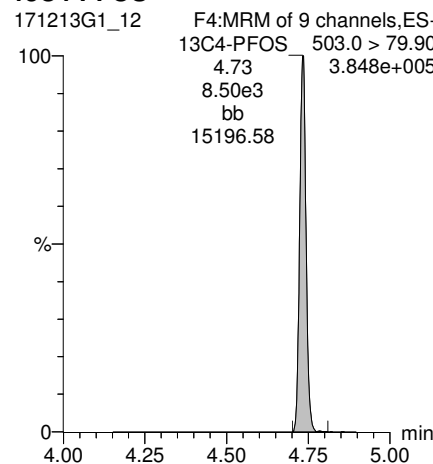
13C4-PFOS



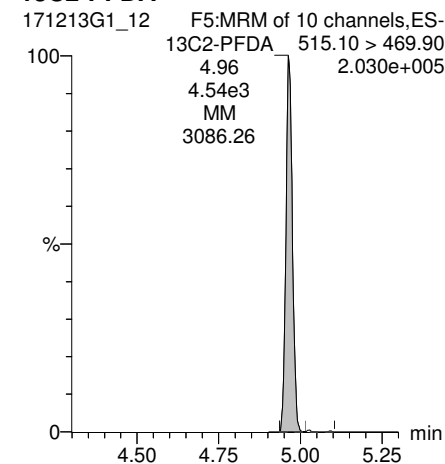
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-13.qld

Last Altered: Wednesday, December 13, 2017 16:07:28 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:07:42 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-07 CH-AT-1RW126-1217 0.25, Description: CH-AT-1RW126-1217, Name: 171213G1_13, Date: 13-Dec-2017, Time: 12:02:46

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		9.066e3		0.251			
2	2 PFOA	413 > 368.70	5.500e1	8.577e3		0.251	4.32	0.314	
3	3 PFOS	499.00 > 79.90		9.066e3		0.251			
4	4 13C2-PFHxA	315.0 > 269.80	3.764e3	8.577e3	0.443	0.251	3.39	39.4	99.1
5	5 13C2-PFDA	515.10 > 469.90	4.091e3	8.577e3	0.509	0.251	4.97	37.3	93.6
6	6 13C2-PFOA	414.90 > 369.70	8.577e3	8.577e3	1.000	0.251	4.32	39.8	100
7	7 13C4-PFOS	503.0 > 79.90	9.066e3	9.066e3	1.000	0.251	4.73	114	100

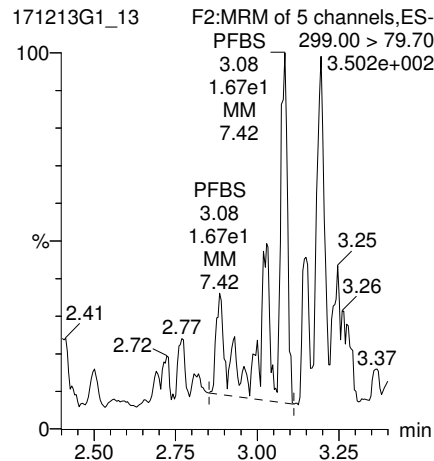
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-13.qld

Last Altered: Wednesday, December 13, 2017 16:07:28 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:07:42 Pacific Standard Time

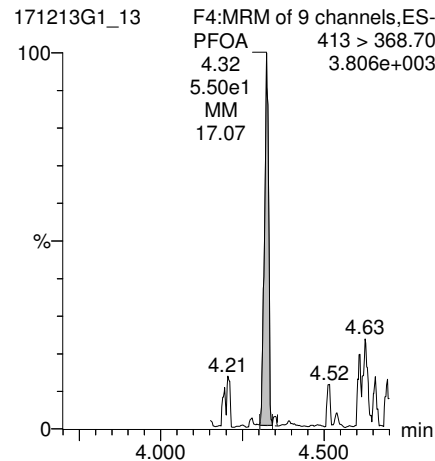
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-07 CH-AT-1RW126-1217 0.25, Description: CH-AT-1RW126-1217, Name: 171213G1_13, Date: 13-Dec-2017, Time: 12:02:46, Instrument: , Lab: , User:

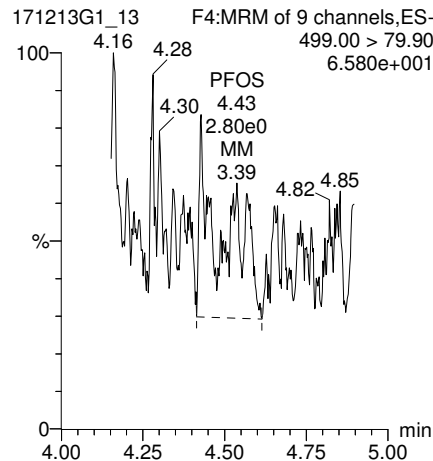
PFBS



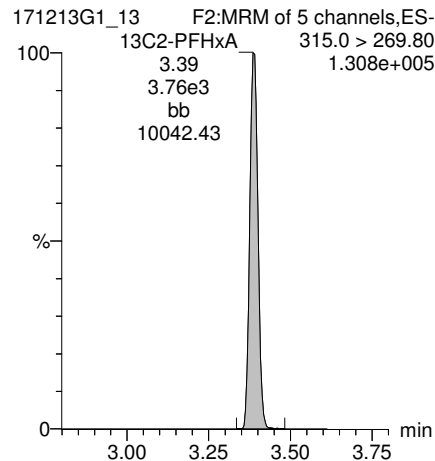
PFOA



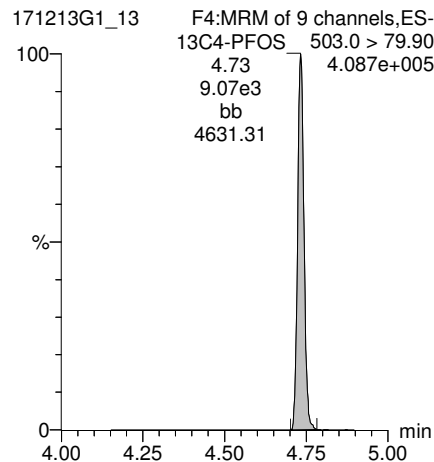
PFOS



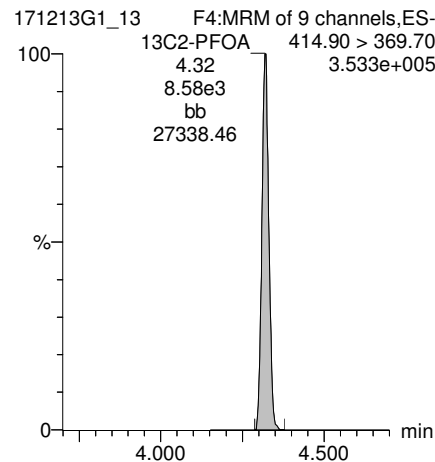
13C2-PFHxA



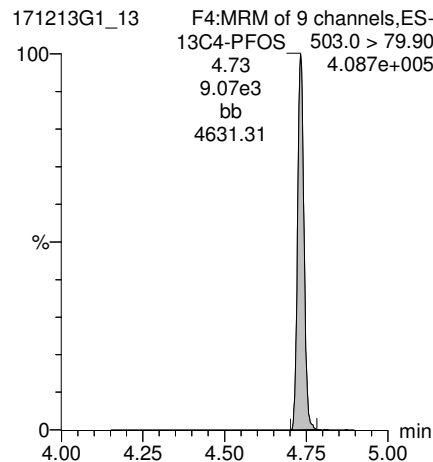
13C4-PFOS



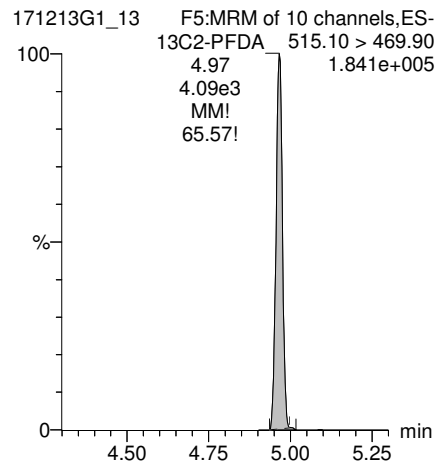
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-14.qld

Last Altered: Wednesday, December 13, 2017 16:08:37 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:08:58 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-08 CH-AT-1FB126-1217 0.25, Description: CH-AT-1FB126-1217, Name: 171213G1_14, Date: 13-Dec-2017, Time: 12:15:12

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.712e3		0.252			
2	2 PFOA	413 > 368.70	3.457e1	1.004e4		0.252	4.33	0.168	
3	3 PFOS	499.00 > 79.90	8.570e-1	8.712e3		0.252	4.73	0.00932	
4	4 13C2-PFHxA	315.0 > 269.80	4.005e3	1.004e4	0.443	0.252	3.39	35.7	90.0
5	5 13C2-PFDA	515.10 > 469.90	4.051e3	1.004e4	0.509	0.252	4.97	31.4	79.2
6	6 13C2-PFOA	414.90 > 369.70	1.004e4	1.004e4	1.000	0.252	4.32	39.7	100
7	7 13C4-PFOS	503.0 > 79.90	8.712e3	8.712e3	1.000	0.252	4.73	114	100

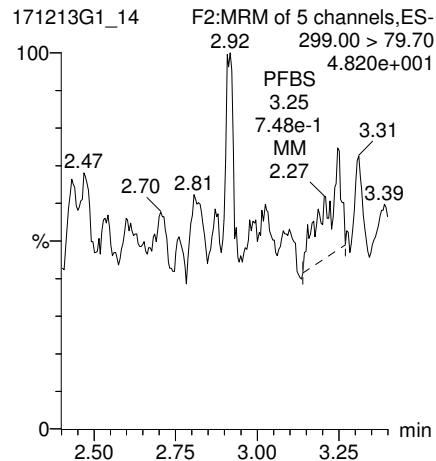
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Last Altered: Wednesday, December 13, 2017 16:08:37 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:08:58 Pacific Standard Time

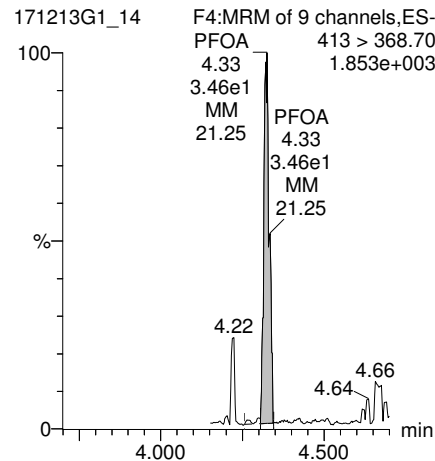
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-08 CH-AT-1FB126-1217 0.25, Description: CH-AT-1FB126-1217, Name: 171213G1_14, Date: 13-Dec-2017, Time: 12:15:12, Instrument: , Lab: , User:

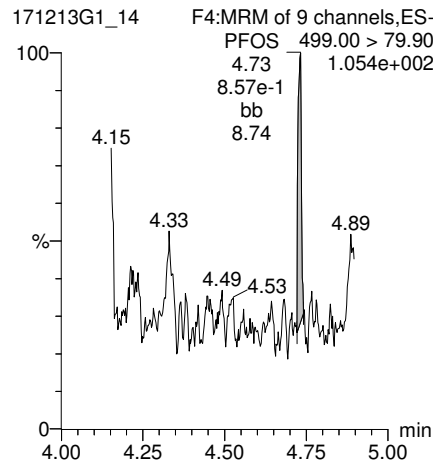
PFBS



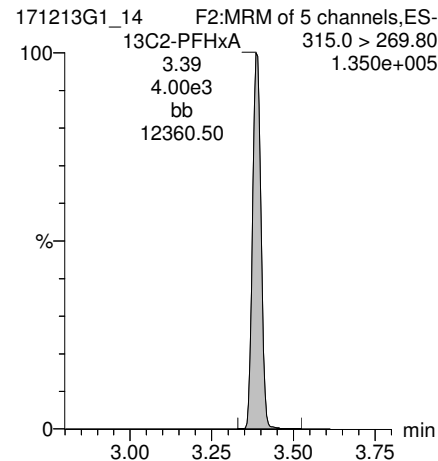
PFOA



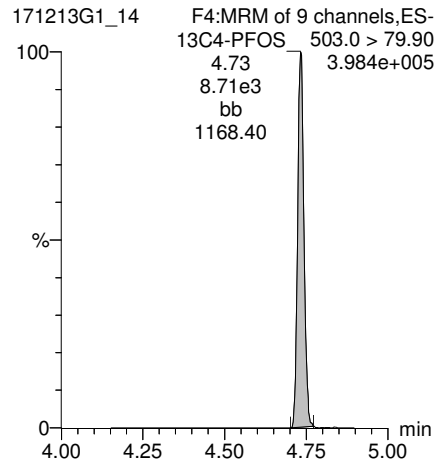
PFOS



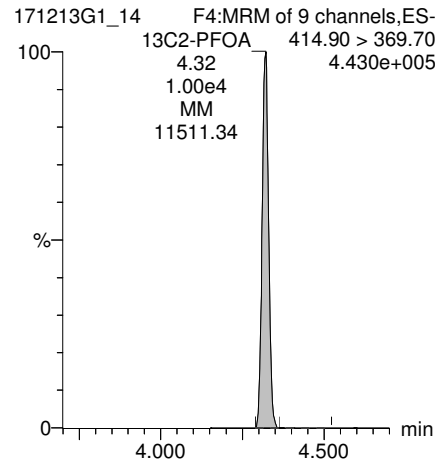
13C2-PFHxA



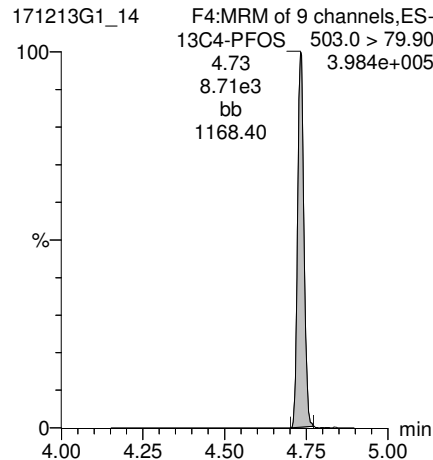
13C4-PFOS



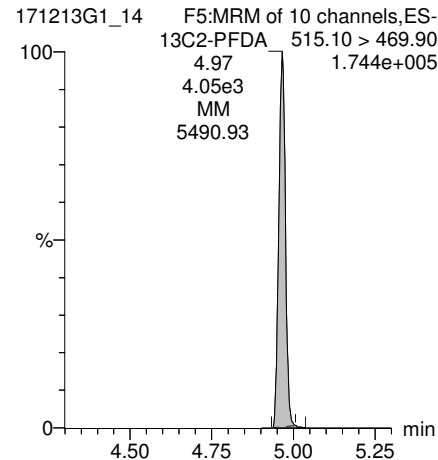
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-15.qld

Last Altered: Wednesday, December 13, 2017 16:09:30 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:09:53 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-09 CH-AT-1RW127-1217 0.25, Description: CH-AT-1RW127-1217, Name: 171213G1_15, Date: 13-Dec-2017, Time: 12:27:38

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.521e3		0.246			
2	2 PFOA	413 > 368.70	5.117e1	9.172e3		0.246	4.31	0.280	
3	3 PFOS	499.00 > 79.90		8.521e3		0.246			
4	4 13C2-PFHxA	315.0 > 269.80	4.230e3	9.172e3	0.443	0.246	3.39	42.4	104
5	5 13C2-PFDA	515.10 > 469.90	3.964e3	9.172e3	0.509	0.246	4.96	34.5	84.9
6	6 13C2-PFOA	414.90 > 369.70	9.172e3	9.172e3	1.000	0.246	4.32	40.7	100
7	7 13C4-PFOS	503.0 > 79.90	8.521e3	8.521e3	1.000	0.246	4.73	117	100

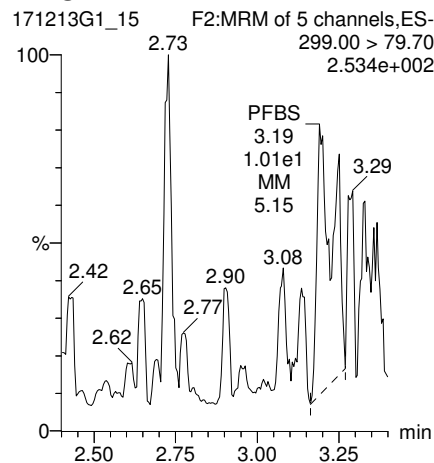
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-15.qld

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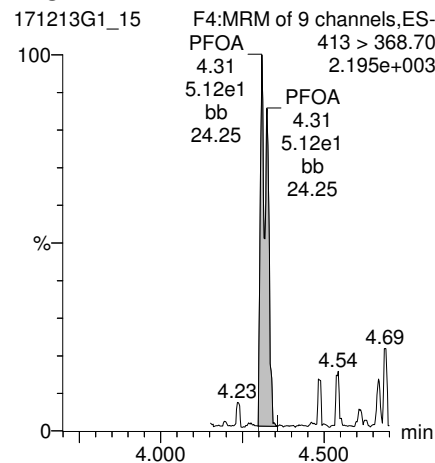
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ID: 1701874-09 CH-AT-1RW127-1217 0.25, Description: CH-AT-1RW127-1217, Name: 171213G1_15, Date: 13-Dec-2017, Time: 12:27:38, Instrument: , Lab: , User:

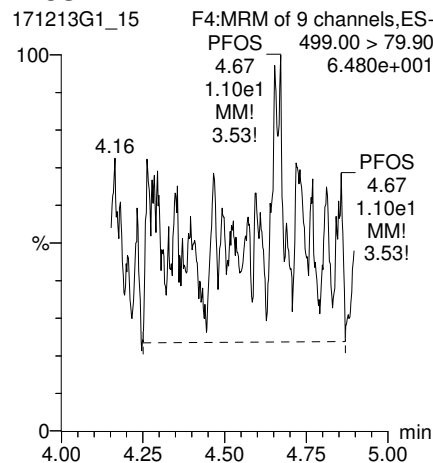
PFBS



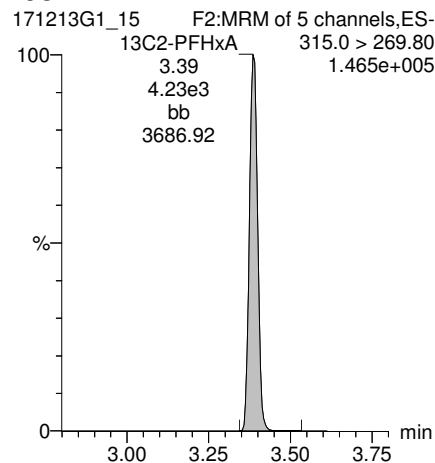
PFOA



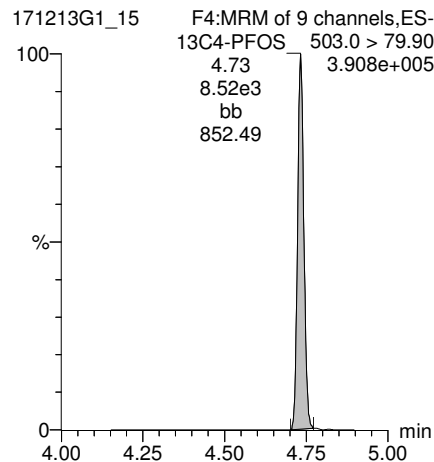
PFOS



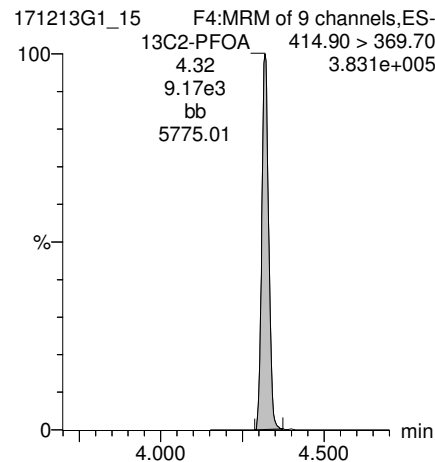
13C2-PFHxA



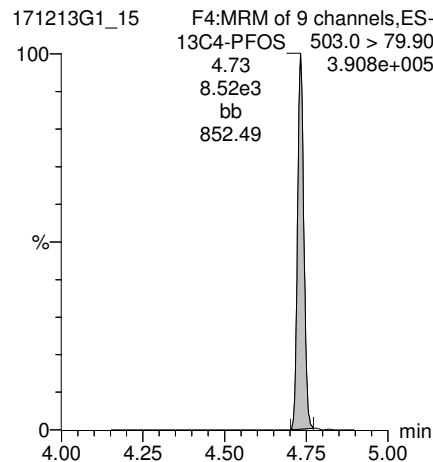
13C4-PFOS



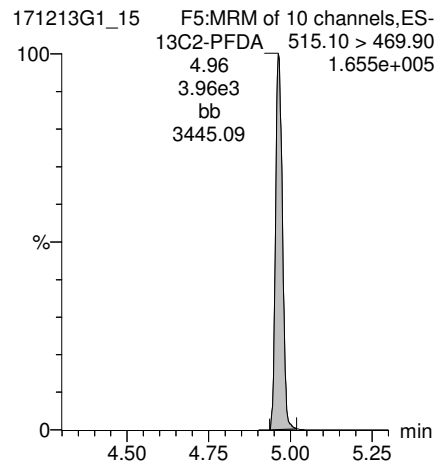
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-16.qld

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-10 CH-AT-1FB127-1217 0.25, Description: CH-AT-1FB127-1217, Name: 171213G1_16, Date: 13-Dec-2017, Time: 12:40:05

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.067e3		0.257			
2	2 PFOA	413 > 368.70	1.528e1	9.344e3		0.257	4.33	0.0783	
3	3 PFOS	499.00 > 79.90		8.067e3		0.257			
4	4 13C2-PFHxA	315.0 > 269.80	4.044e3	9.344e3	0.443	0.257	3.39	38.0	97.7
5	5 13C2-PFDA	515.10 > 469.90	4.026e3	9.344e3	0.509	0.257	4.97	32.9	84.6
6	6 13C2-PFOA	414.90 > 369.70	9.344e3	9.344e3	1.000	0.257	4.32	38.9	100
7	7 13C4-PFOS	503.0 > 79.90	8.067e3	8.067e3	1.000	0.257	4.73	112	100

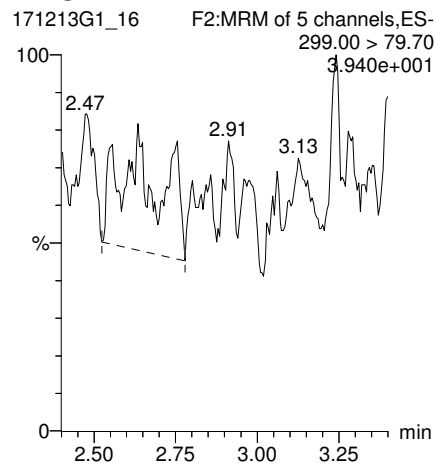
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Printed: Wednesday, December 13, 2017 16:10:55 Pacific Standard Time

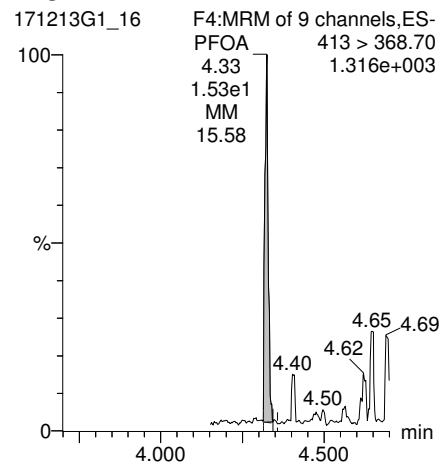
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ID: 1701874-10 CH-AT-1FB127-1217 0.25, Description: CH-AT-1FB127-1217, Name: 171213G1_16, Date: 13-Dec-2017, Time: 12:40:05, Instrument: , Lab: , User:

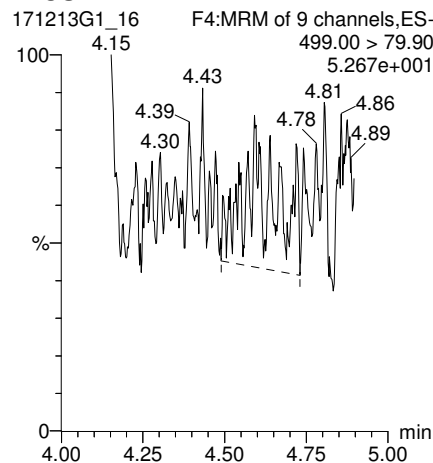
PFBS



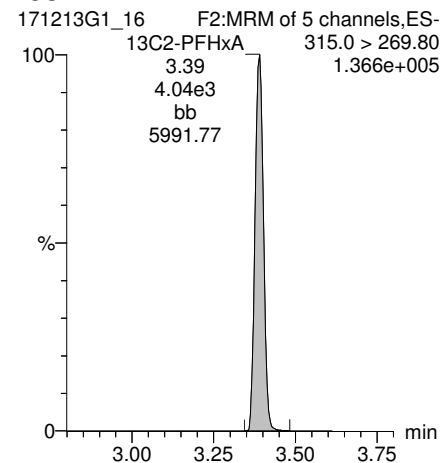
PFOA



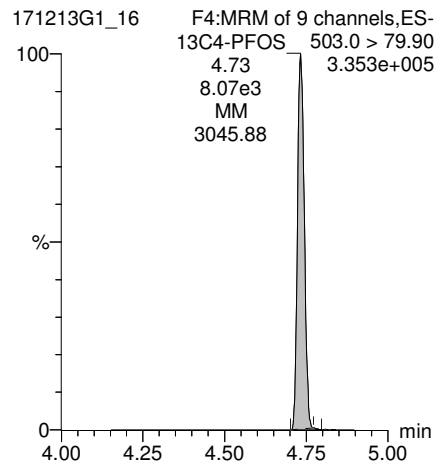
PFOS



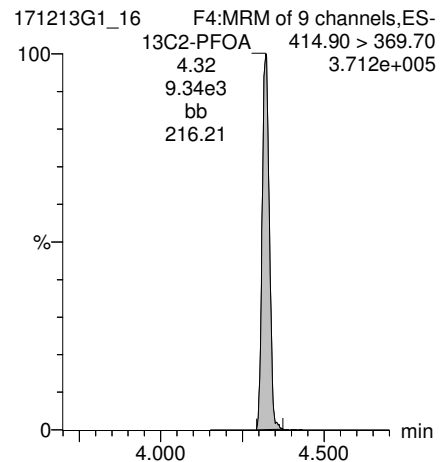
13C2-PFHxA



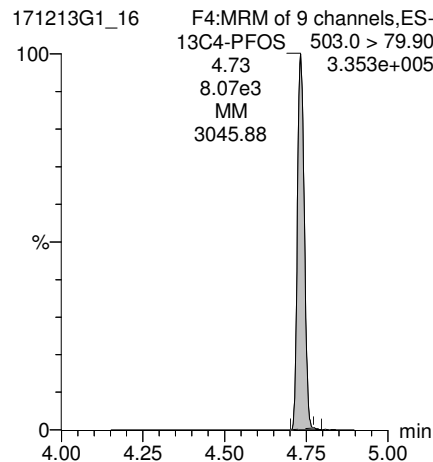
13C4-PFOS



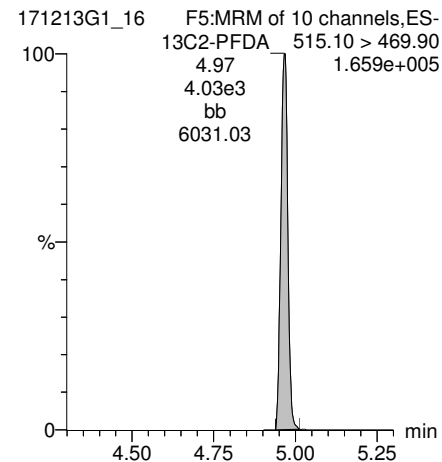
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-17.qld

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Printed: Wednesday, December 13, 2017 16:12:07 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-11 CH-AT-1RW128-1217 0.25, Description: CH-AT-1RW128-1217, Name: 171213G1_17, Date: 13-Dec-2017, Time: 12:52:32

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	5.129e0	8.603e3		0.258	3.04	0.0827	
2	2 PFOA	413 > 368.70	6.336e1	9.265e3		0.258	4.32	0.326	
3	3 PFOS	499.00 > 79.90		8.603e3		0.258			
4	4 13C2-PFHxA	315.0 > 269.80	4.077e3	9.265e3	0.443	0.258	3.39	38.4	99.3
5	5 13C2-PFDA	515.10 > 469.90	4.092e3	9.265e3	0.509	0.258	4.97	33.6	86.7
6	6 13C2-PFOA	414.90 > 369.70	9.265e3	9.265e3	1.000	0.258	4.32	38.7	100
7	7 13C4-PFOS	503.0 > 79.90	8.603e3	8.603e3	1.000	0.258	4.73	111	100

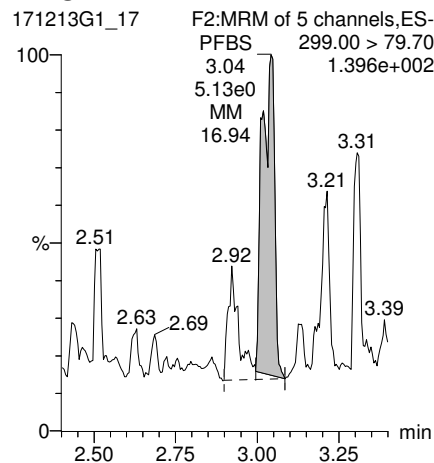
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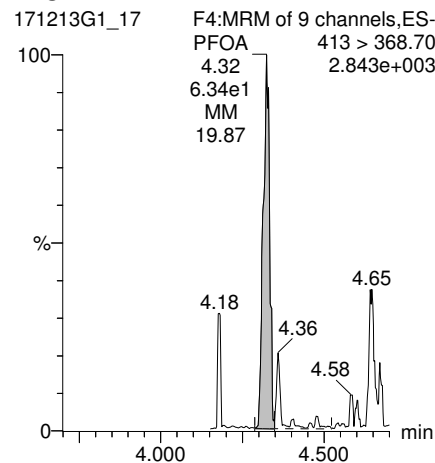
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-11 CH-AT-1RW128-1217 0.25, Description: CH-AT-1RW128-1217, Name: 171213G1_17, Date: 13-Dec-2017, Time: 12:52:32, Instrument: , Lab: , User:

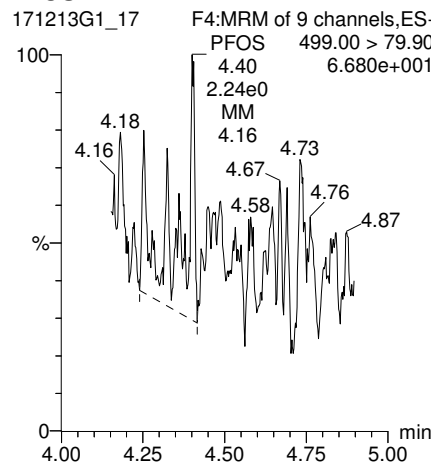
PFBS



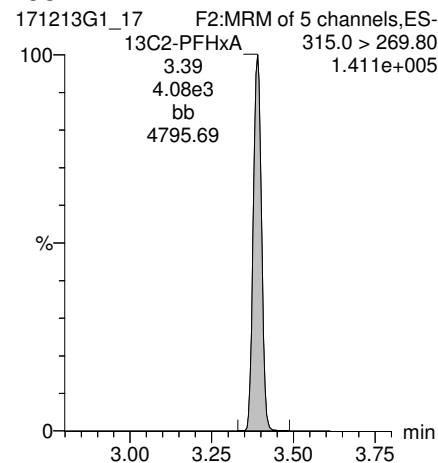
PFOA



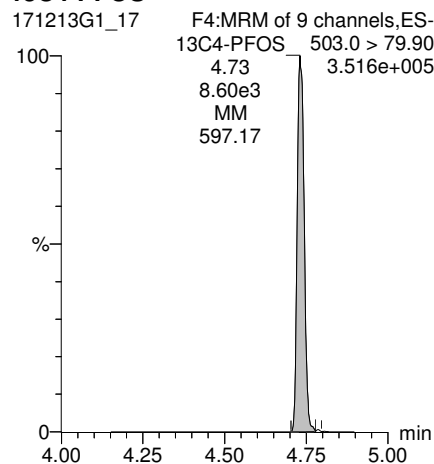
PFOS



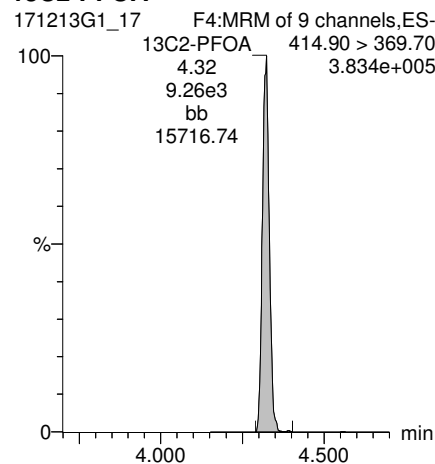
13C2-PFHxA



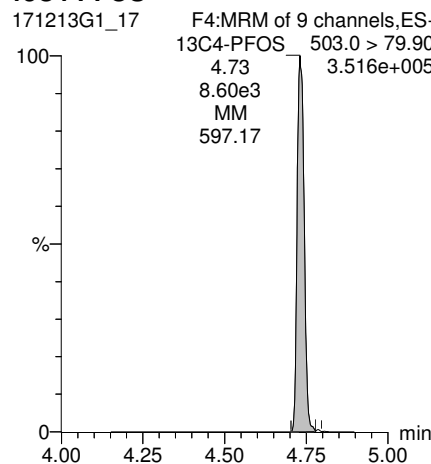
13C4-PFOS



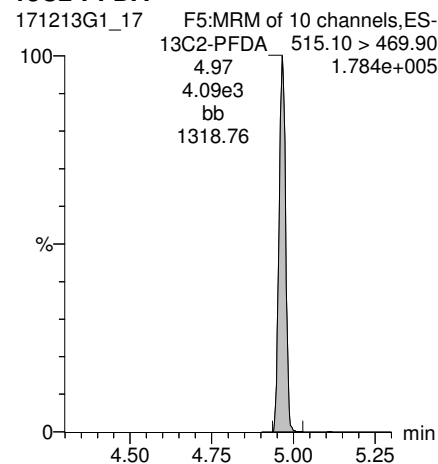
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-18.qld

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Printed: Wednesday, December 13, 2017 16:13:40 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-12 CH-AT-1FB128-1217 0.25, Description: CH-AT-1FB128-1217, Name: 171213G1_18, Date: 13-Dec-2017, Time: 13:05:00

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.217e3		0.261			
2	2 PFOA	413 > 368.70	8.033e0	8.292e3		0.261	4.32	0.0457	
3	3 PFOS	499.00 > 79.90		8.217e3		0.261			
4	4 13C2-PFHxA	315.0 > 269.80	3.760e3	8.292e3	0.443	0.261	3.39	39.2	102
5	5 13C2-PFDA	515.10 > 469.90	4.046e3	8.292e3	0.509	0.261	4.96	36.7	95.8
6	6 13C2-PFOA	414.90 > 369.70	8.292e3	8.292e3	1.000	0.261	4.32	38.3	100
7	7 13C4-PFOS	503.0 > 79.90	8.217e3	8.217e3	1.000	0.261	4.73	110	100

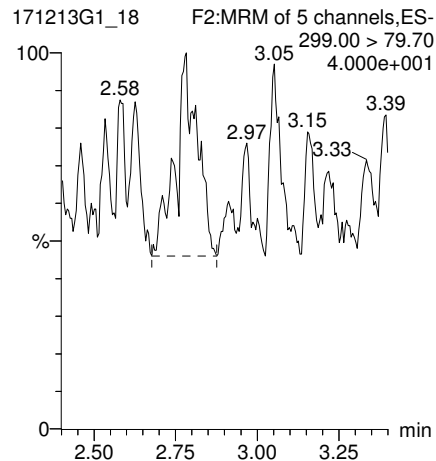
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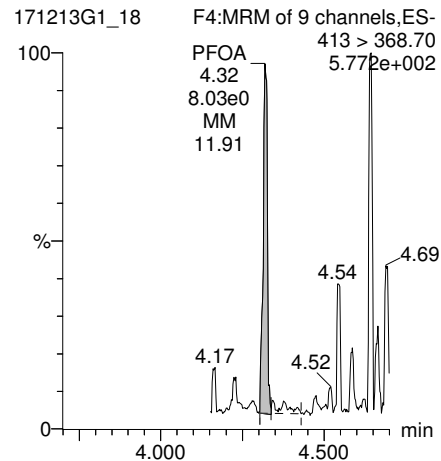
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ID: 1701874-12 CH-AT-1FB128-1217 0.25, Description: CH-AT-1FB128-1217, Name: 171213G1_18, Date: 13-Dec-2017, Time: 13:05:00, Instrument: , Lab: , User:

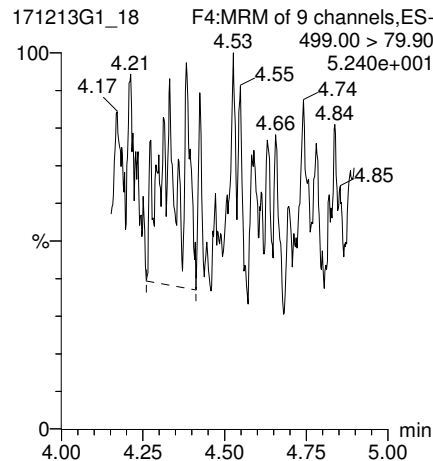
PFBS



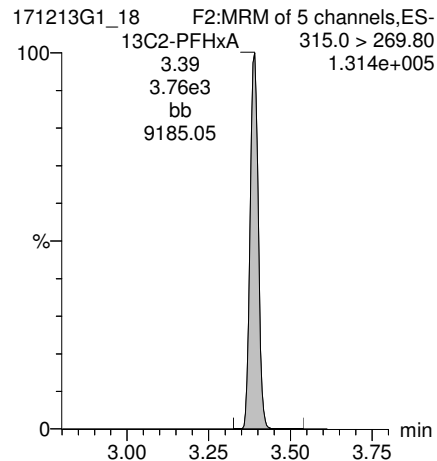
PFOA



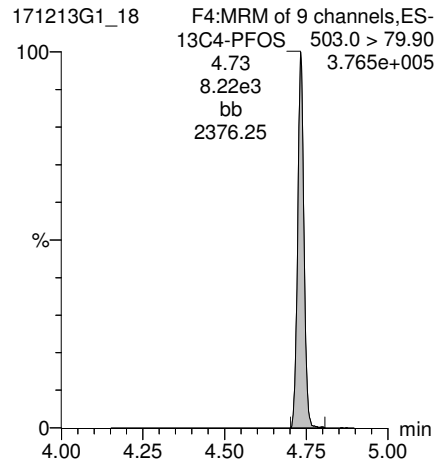
PFOS



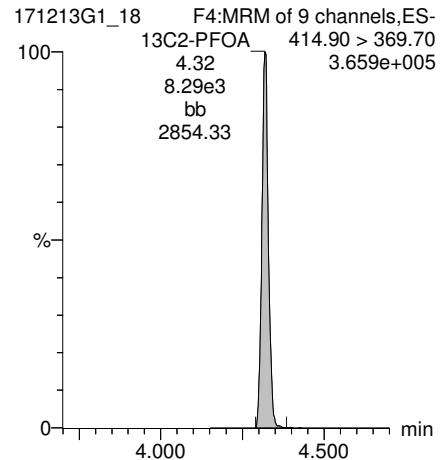
13C2-PFHxA



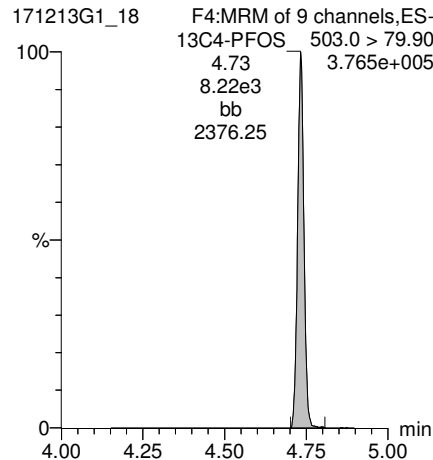
13C4-PFOS



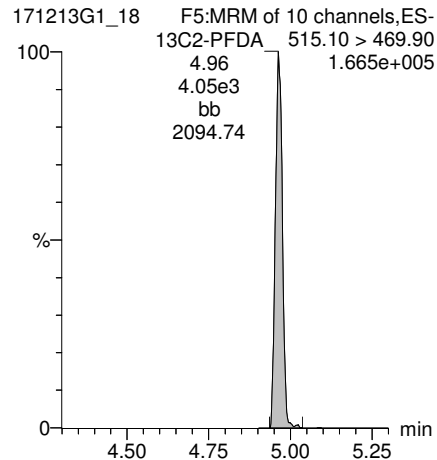
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-19.qld

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-13 CH-AT-1RW129-1217 0.25, Description: CH-AT-1RW129-1217, Name: 171213G1_19, Date: 13-Dec-2017, Time: 13:17:25

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.838e3		0.254			
2	2 PFOA	413 > 368.70	3.292e1	8.445e3		0.254	4.33	0.189	
3	3 PFOS	499.00 > 79.90		7.838e3		0.254			
4	4 13C2-PFHxA	315.0 > 269.80	3.905e3	8.445e3	0.443	0.254	3.39	41.1	104
5	5 13C2-PFDA	515.10 > 469.90	3.772e3	8.445e3	0.509	0.254	4.97	34.5	87.7
6	6 13C2-PFOA	414.90 > 369.70	8.445e3	8.445e3	1.000	0.254	4.32	39.3	100
7	7 13C4-PFOS	503.0 > 79.90	7.838e3	7.838e3	1.000	0.254	4.74	113	100

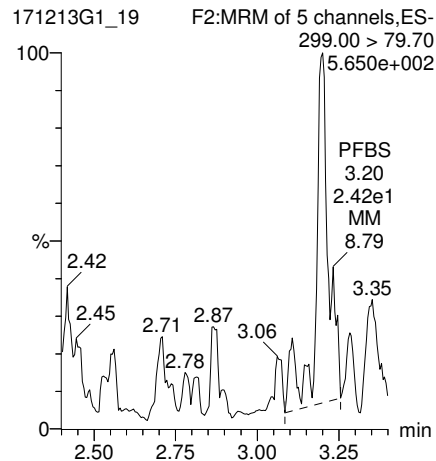
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Printed: Wednesday, December 13, 2017 16:15:08 Pacific Standard Time

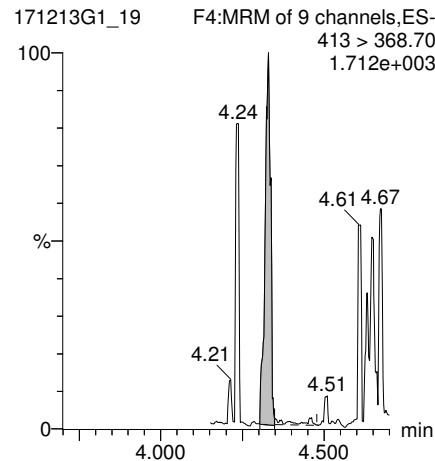
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-13 CH-AT-1RW129-1217 0.25, Description: CH-AT-1RW129-1217, Name: 171213G1_19, Date: 13-Dec-2017, Time: 13:17:25, Instrument: , Lab: , User:

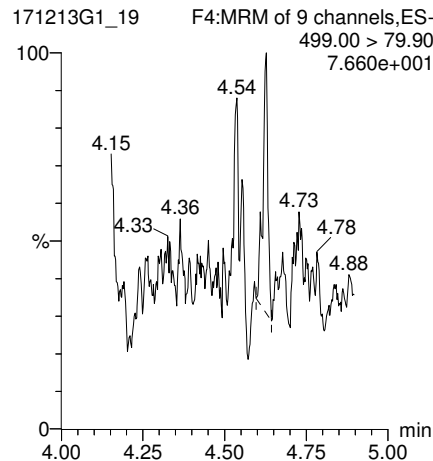
PFBS



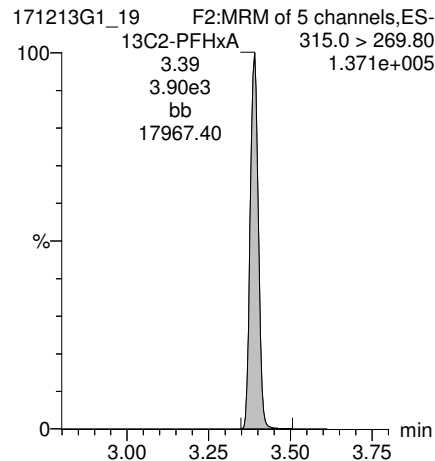
PFOA



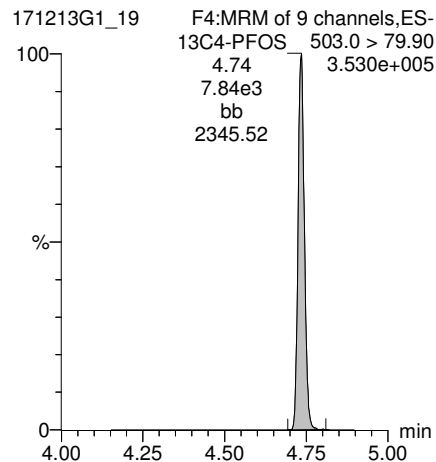
PFOS



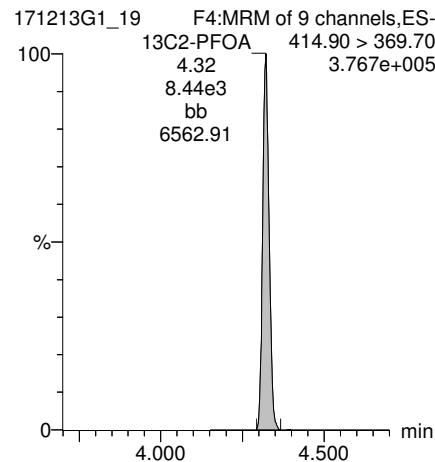
13C2-PFHxA



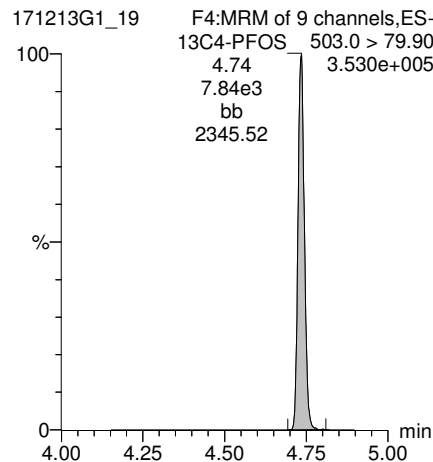
13C4-PFOS



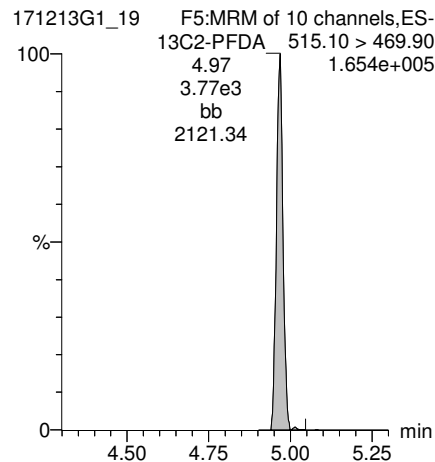
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-20.qld

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-14 CH-AT-1FB129-1217 0.25, Description: CH-AT-1FB129-1217, Name: 171213G1_20, Date: 13-Dec-2017, Time: 13:29:50

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	2.300e-2	9.517e3		0.252	2.73	0.000344	
2	2 PFOA	413 > 368.70	6.313e1	9.152e3		0.252	4.33	0.337	
3	3 PFOS	499.00 > 79.90		9.517e3		0.252			
4	4 13C2-PFHxA	315.0 > 269.80	4.085e3	9.152e3	0.443	0.252	3.39	40.0	101
5	5 13C2-PFDA	515.10 > 469.90	4.459e3	9.152e3	0.509	0.252	4.97	37.9	95.7
6	6 13C2-PFOA	414.90 > 369.70	9.152e3	9.152e3	1.000	0.252	4.32	39.7	100
7	7 13C4-PFOS	503.0 > 79.90	9.517e3	9.517e3	1.000	0.252	4.73	114	100

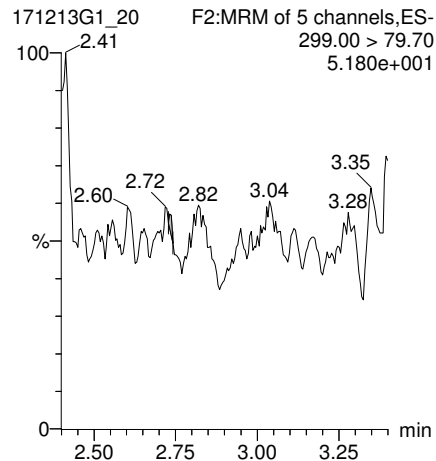
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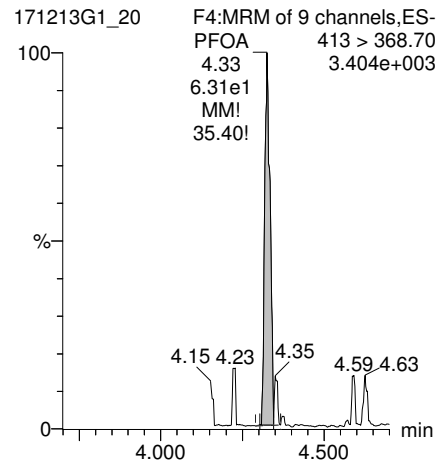
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-14 CH-AT-1FB129-1217 0.25, Description: CH-AT-1FB129-1217, Name: 171213G1_20, Date: 13-Dec-2017, Time: 13:29:50, Instrument: , Lab: , User:

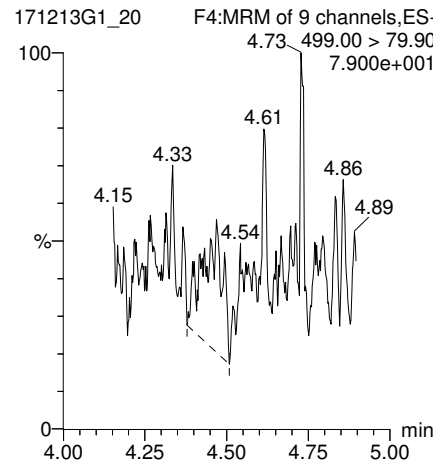
PFBS



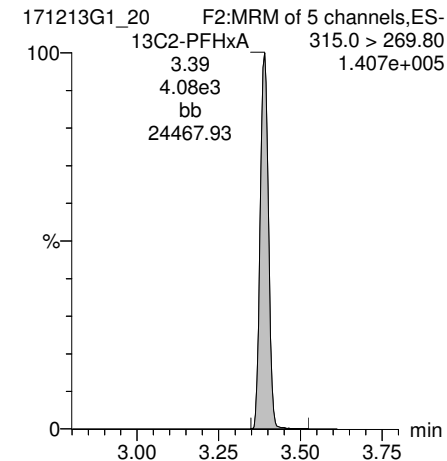
PFOA



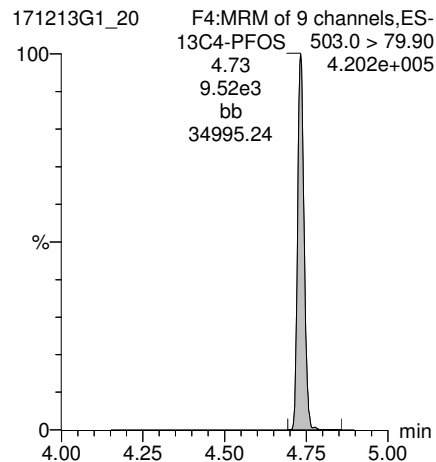
PFOS



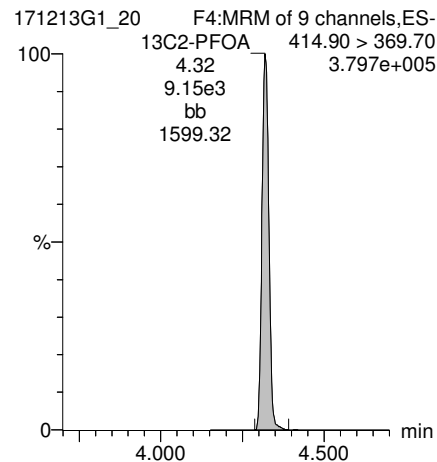
13C2-PFHxA



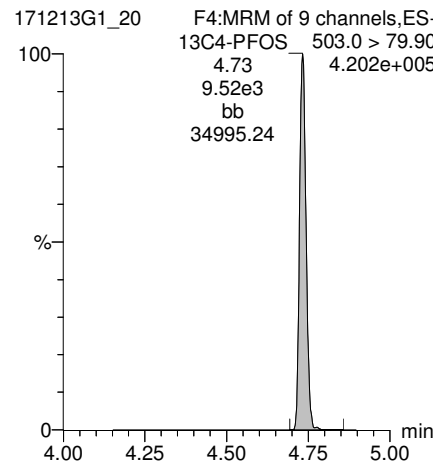
13C4-PFOS



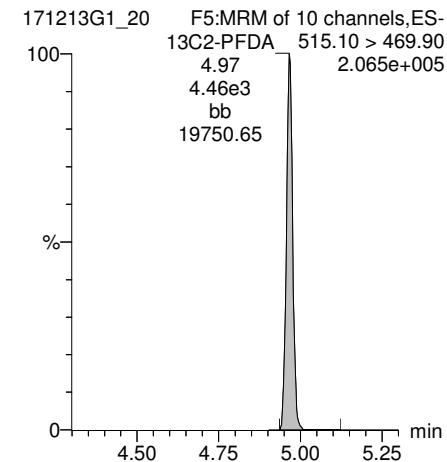
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-21.qld

Last Altered: Wednesday, December 13, 2017 16:17:42 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:18:01 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-15 CH-AT-1RW130-1217 0.25, Description: CH-AT-1RW130-1217, Name: 171213G1_21, Date: 13-Dec-2017, Time: 13:42:15

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		9.104e3		0.251			
2	2 PFOA	413 > 368.70	5.560e1	9.264e3		0.251	4.31	0.295	
3	3 PFOS	499.00 > 79.90		9.104e3		0.251			
4	4 13C2-PFHxA	315.0 > 269.80	4.454e3	9.264e3	0.443	0.251	3.39	43.3	109
5	5 13C2-PFDA	515.10 > 469.90	3.893e3	9.264e3	0.509	0.251	4.97	32.9	82.5
6	6 13C2-PFOA	414.90 > 369.70	9.264e3	9.264e3	1.000	0.251	4.32	39.9	100
7	7 13C4-PFOS	503.0 > 79.90	9.104e3	9.104e3	1.000	0.251	4.73	115	100

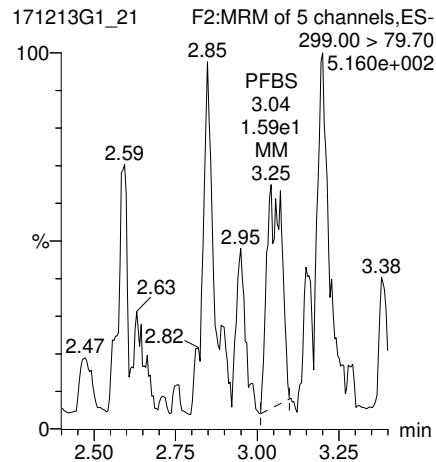
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-21.qld

Last Altered: Wednesday, December 13, 2017 16:17:42 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:18:01 Pacific Standard Time

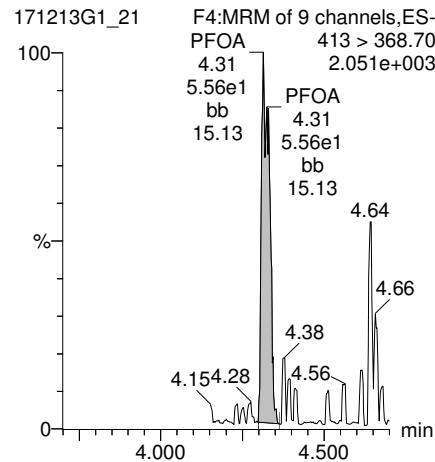
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-15 CH-AT-1RW130-1217 0.25, Description: CH-AT-1RW130-1217, Name: 171213G1_21, Date: 13-Dec-2017, Time: 13:42:15, Instrument: , Lab: , User:

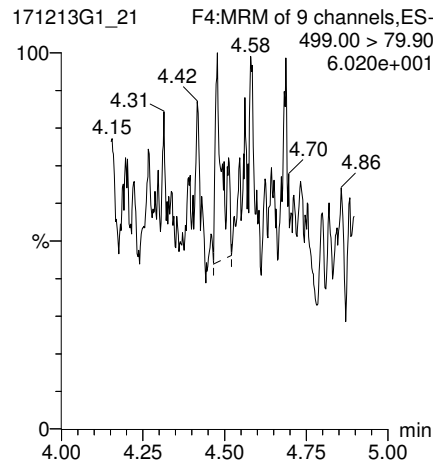
PFBS



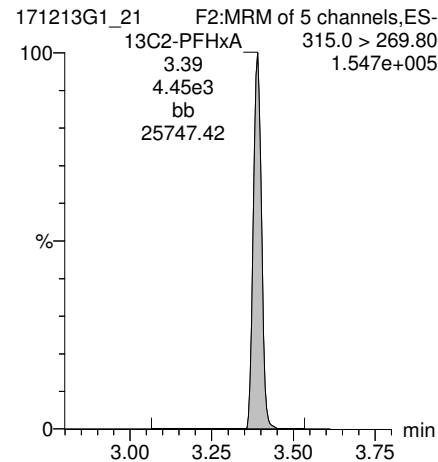
PFOA



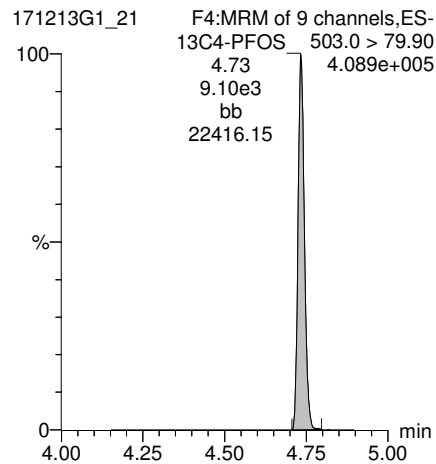
PFOS



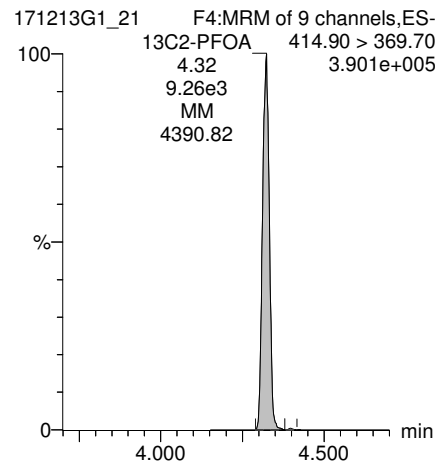
13C2-PFHxA



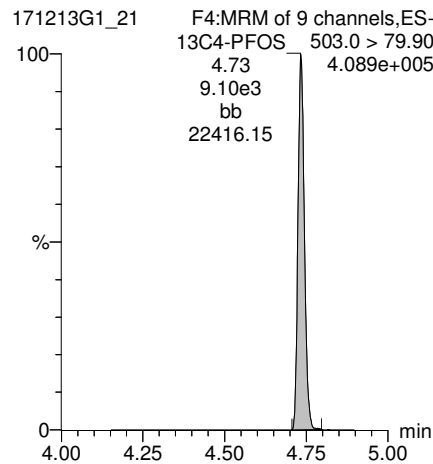
13C4-PFOS



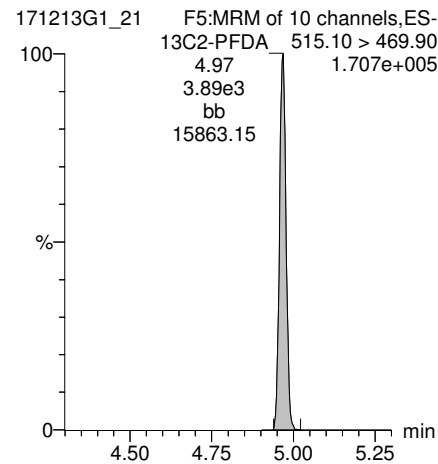
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-22.qld

Last Altered: Wednesday, December 13, 2017 16:18:30 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:18:49 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-16 CH-AT-1FB130-1217 0.25, Description: CH-AT-1FB130-1217, Name: 171213G1_22, Date: 13-Dec-2017, Time: 13:54:41

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.695e3		0.255			
2	2 PFOA	413 > 368.70	1.277e1	8.800e3		0.255	4.33	0.0700	
3	3 PFOS	499.00 > 79.90	4.312e0	8.695e3		0.255	4.74	0.0464	
4	4 13C2-PFHxA	315.0 > 269.80	3.898e3	8.800e3	0.443	0.255	3.39	39.2	100
5	5 13C2-PFDA	515.10 > 469.90	3.911e3	8.800e3	0.509	0.255	4.97	34.2	87.3
6	6 13C2-PFOA	414.90 > 369.70	8.800e3	8.800e3	1.000	0.255	4.33	39.2	100
7	7 13C4-PFOS	503.0 > 79.90	8.695e3	8.695e3	1.000	0.255	4.74	112	100

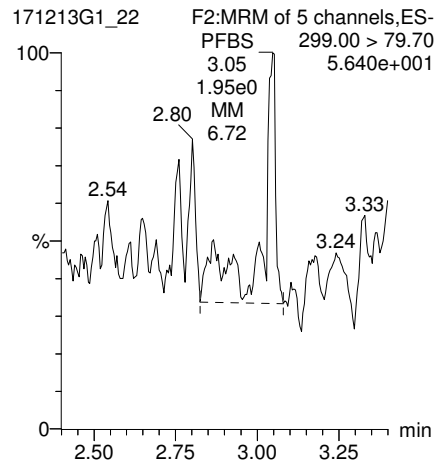
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Last Altered: Wednesday, December 13, 2017 16:18:30 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:18:49 Pacific Standard Time

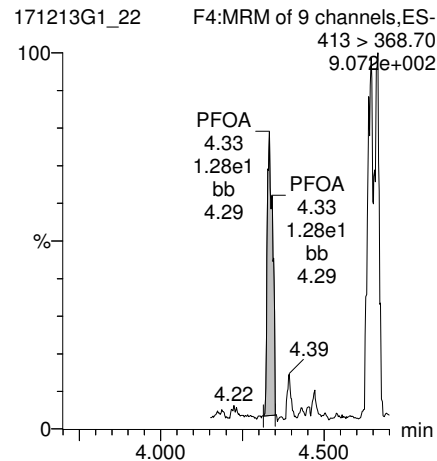
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-16 CH-AT-1FB130-1217 0.25, Description: CH-AT-1FB130-1217, Name: 171213G1_22, Date: 13-Dec-2017, Time: 13:54:41, Instrument: , Lab: , User:

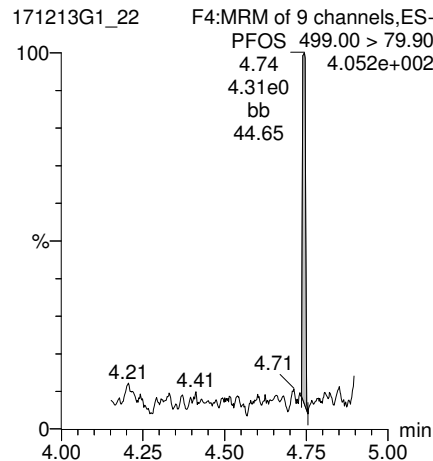
PFBS



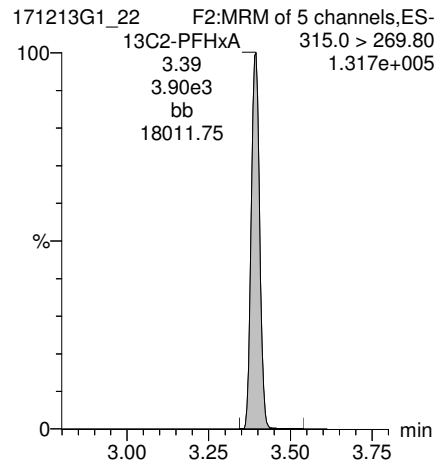
PFOA



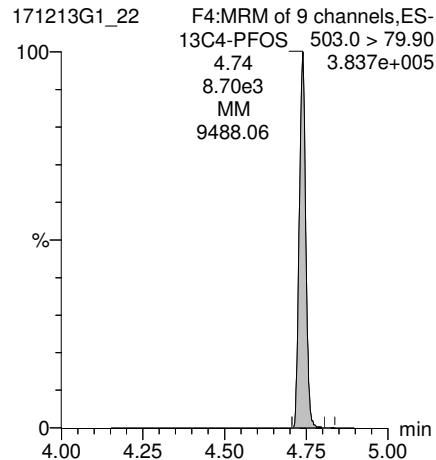
PFOS



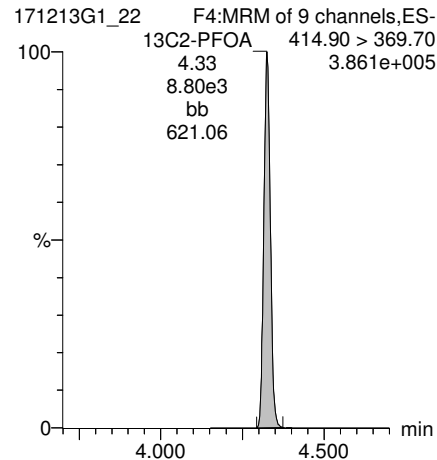
13C2-PFHxA



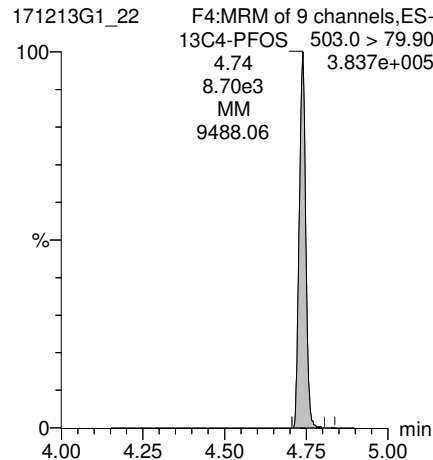
13C4-PFOS



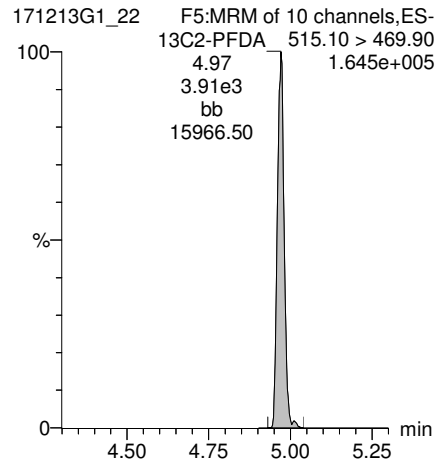
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-23.qld

Last Altered: Wednesday, December 13, 2017 16:19:14 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:19:40 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-17 CH-AT-1RW132-1217 0.25, Description: CH-AT-1RW132-1217, Name: 171213G1_23, Date: 13-Dec-2017, Time: 14:07:07

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.742e3		0.256			
2	2 PFOA	413 > 368.70	2.404e1	8.893e3		0.256	4.32	0.130	
3	3 PFOS	499.00 > 79.90		7.742e3		0.256			
4	4 13C2-PFHxA	315.0 > 269.80	3.969e3	8.893e3	0.443	0.256	3.39	39.4	101
5	5 13C2-PFDA	515.10 > 469.90	4.045e3	8.893e3	0.509	0.256	4.97	34.9	89.3
6	6 13C2-PFOA	414.90 > 369.70	8.893e3	8.893e3	1.000	0.256	4.32	39.1	100
7	7 13C4-PFOS	503.0 > 79.90	7.742e3	7.742e3	1.000	0.256	4.74	112	100

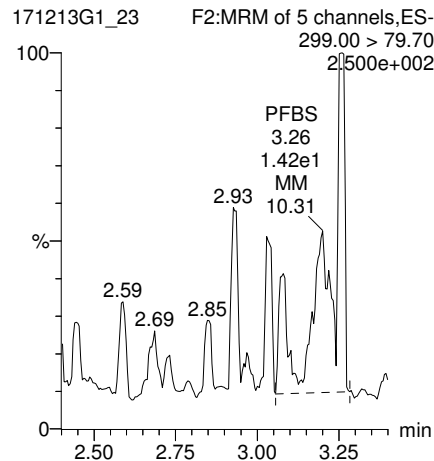
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-23.qld

Last Altered: Wednesday, December 13, 2017 16:19:14 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:19:40 Pacific Standard Time

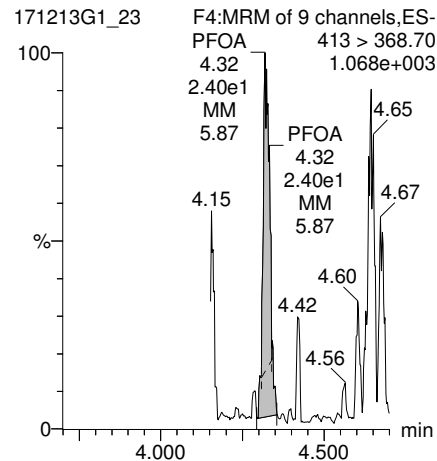
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-17 CH-AT-1RW132-1217 0.25, Description: CH-AT-1RW132-1217, Name: 171213G1_23, Date: 13-Dec-2017, Time: 14:07:07, Instrument: , Lab: , User:

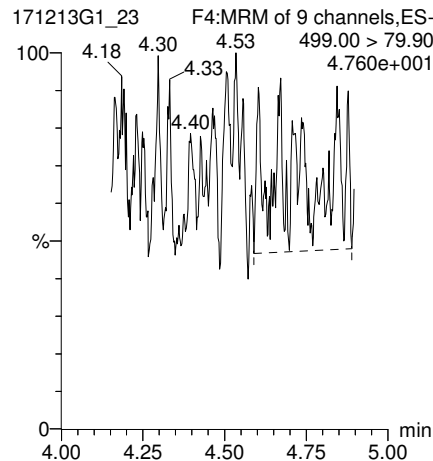
PFBS



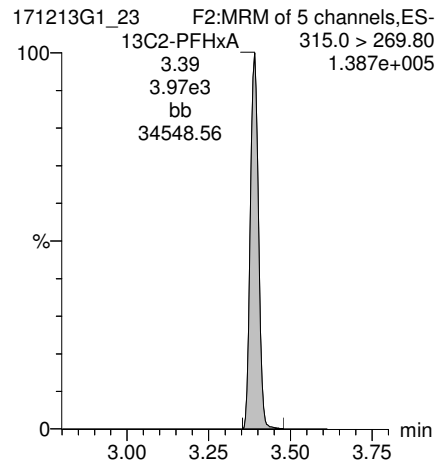
PFOA



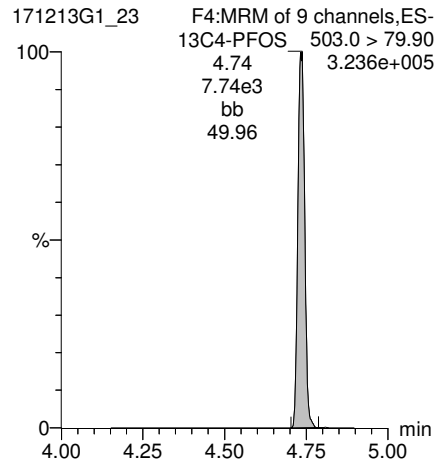
PFOS



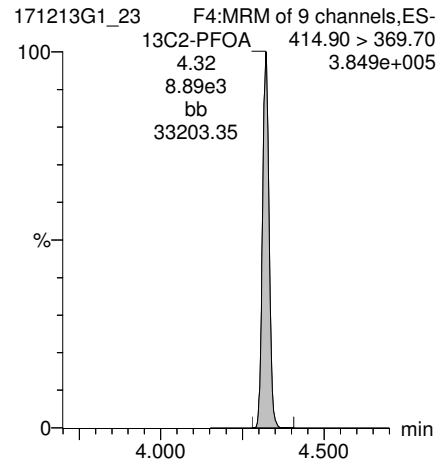
13C2-PFHxA



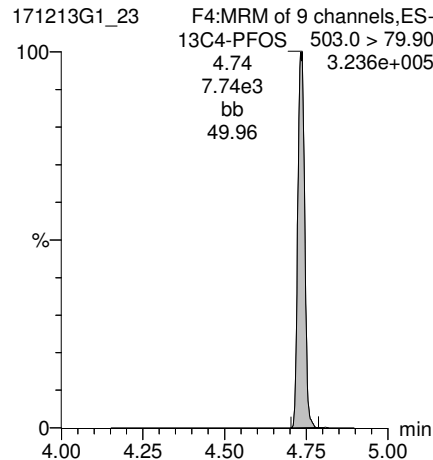
13C4-PFOS



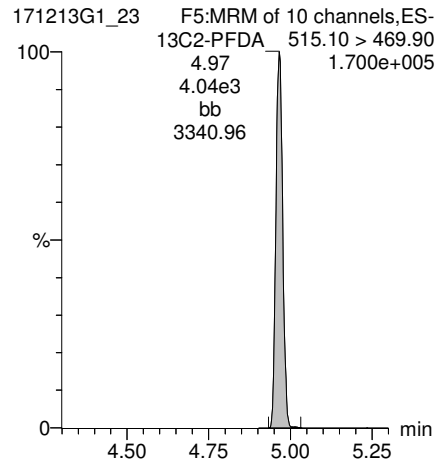
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-24.qld

Last Altered: Wednesday, December 13, 2017 16:20:11 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:20:34 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-18 CH-AT-1FB132-1217 0.25, Description: CH-AT-1FB132-1217, Name: 171213G1_24, Date: 13-Dec-2017, Time: 14:19:33

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.266e3		0.239			
2	2 PFOA	413 > 368.70	1.460e1	8.772e3		0.239	4.33	0.0859	
3	3 PFOS	499.00 > 79.90		8.266e3		0.239			
4	4 13C2-PFHxA	315.0 > 269.80	3.845e3	8.772e3	0.443	0.239	3.39	41.4	99.0
5	5 13C2-PFDA	515.10 > 469.90	4.083e3	8.772e3	0.509	0.239	4.97	38.3	91.4
6	6 13C2-PFOA	414.90 > 369.70	8.772e3	8.772e3	1.000	0.239	4.32	41.9	100
7	7 13C4-PFOS	503.0 > 79.90	8.266e3	8.266e3	1.000	0.239	4.74	120	100

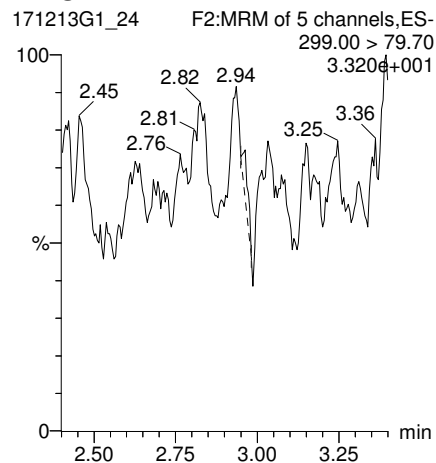
Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-24.qld

Last Altered: Wednesday, December 13, 2017 16:20:11 Pacific Standard Time
Printed: Wednesday, December 13, 2017 16:20:34 Pacific Standard Time

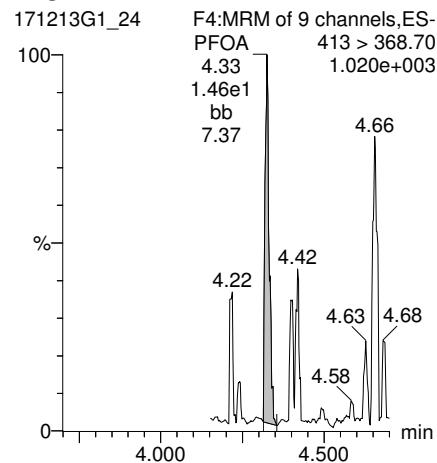
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: 1701874-18 CH-AT-1FB132-1217 0.25, Description: CH-AT-1FB132-1217, Name: 171213G1_24, Date: 13-Dec-2017, Time: 14:19:33, Instrument: , Lab: , User:

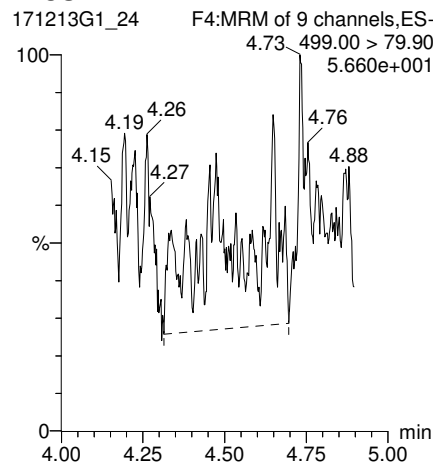
PFBS



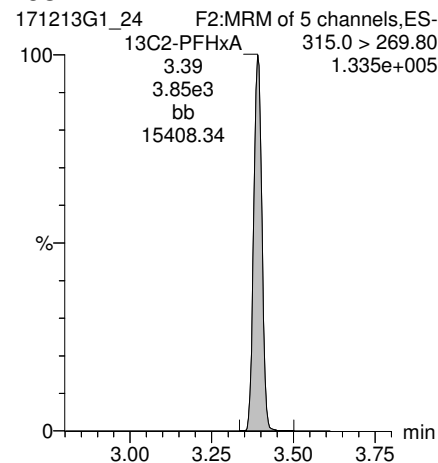
PFOA



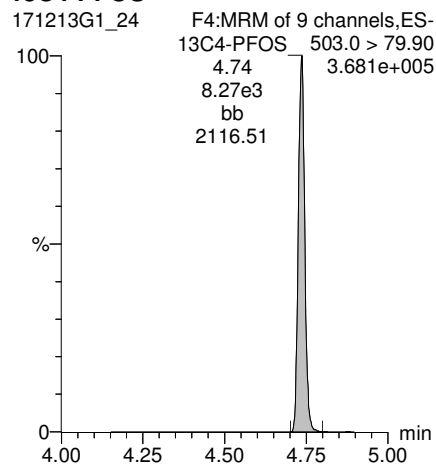
PFOS



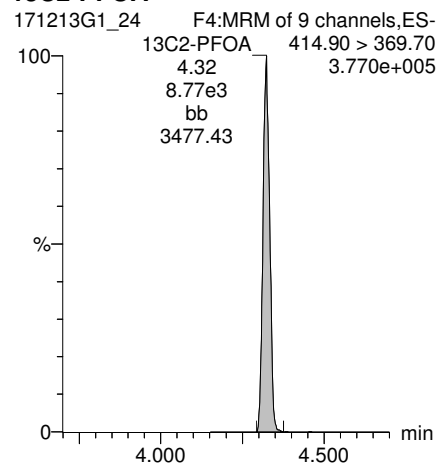
13C2-PFHxA



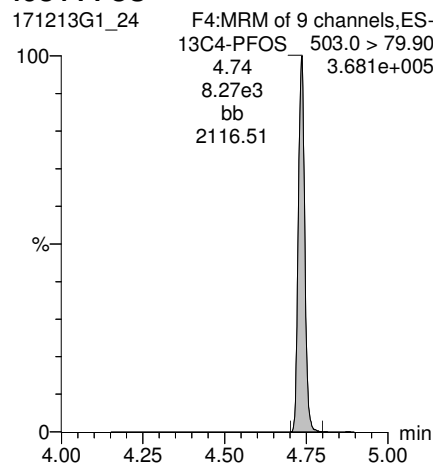
13C4-PFOS



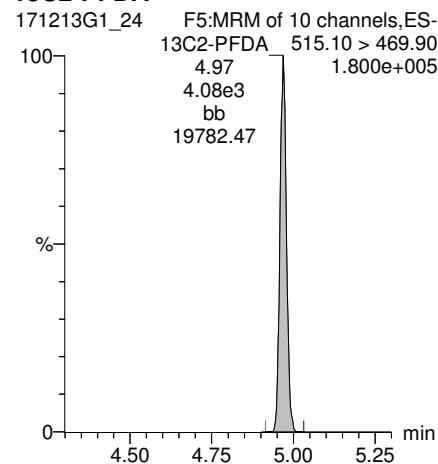
13C2-PFOA



13C4-PFOS



13C2-PFDA



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

IS Area

Ical

Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical area	Area %	
1	ST171213G1-1 PFC CS-1 537 17K3024	171213G1_Analyte			4.31	11373.99	11373.99	12372.36	91.93061
2	IPA	171213G1_Analyte			4.25	0.478	0.478	12372.36	0.003863
3	B7L0065-BS1 LFB 0.25	171213G1_Analyte			4.32	8701.148	8701.148	12372.36	70.32731
4	B7L0065-BSD1 LFB 0.25	171213G1_Analyte			4.32	9177.66	9177.66	12372.36	74.17873
5	B7L0065-BLK1 LRB 0.25	171213G1_Analyte			4.32	9428.498	9428.498	12372.36	76.20614
6	1701874-01 CH-AT-1RW123-1217 0.25	171213G1_Analyte			4.32	9650.605	9650.605	12372.36	78.00133
7	1701874-02 CH-AT-1FB123-1217 0.25	171213G1_Analyte			4.32	9627.344	9627.344	12372.36	77.81332
8	1701874-03 CH-AT-1RW124-1217 0.25	171213G1_Analyte			4.32	9461.7	9461.7	12372.36	76.4745
9	1701874-04 CH-AT-1FB124-1217 0.25	171213G1_Analyte			4.32	9686.286	9686.286	12372.36	78.28972
10	1701874-05 CH-AT-1RW125-1217 0.25	171213G1_Analyte			4.32	8835.772	8835.772	12372.36	71.41541
11	1701874-06 CH-AT-1FB125-1217 0.25	171213G1_Analyte			4.32	9162.32	9162.32	12372.36	74.05475
12	1701874-07 CH-AT-1RW126-1217 0.25	171213G1_Analyte			4.32	8577.367	8577.367	12372.36	69.32685
13	1701874-08 CH-AT-1FB126-1217 0.25	171213G1_Analyte			4.32	10053.36	10053.36	12372.36	81.25662
14	1701874-09 CH-AT-1RW127-1217 0.25	171213G1_Analyte			4.32	9172.195	9172.195	12372.36	74.13456
15	1701874-10 CH-AT-1FB127-1217 0.25	171213G1_Analyte			4.32	9344.267	9344.267	12372.36	75.52534
16	1701874-11 CH-AT-1RW128-1217 0.25	171213G1_Analyte			4.32	9264.837	9264.837	12372.36	74.88334
17	1701874-12 CH-AT-1FB128-1217 0.25	171213G1_Analyte			4.32	8291.57	8291.57	12372.36	67.01688
18	1701874-13 CH-AT-1RW129-1217 0.25	171213G1_Analyte			4.32	8444.933	8444.933	12372.36	68.25644
19	1701874-14 CH-AT-1FB129-1217 0.25	171213G1_Analyte			4.32	9152.449	9152.449	12372.36	73.97497
20	1701874-15 CH-AT-1RW130-1217 0.25	171213G1_Analyte			4.32	9291.483	9291.483	12372.36	75.09871
21	1701874-16 CH-AT-1FB130-1217 0.25	171213G1_Analyte			4.33	8800.156	8800.156	12372.36	71.12755
22	1701874-17 CH-AT-1RW132-1217 0.25	171213G1_Analyte			4.32	8892.849	8892.849	12372.36	71.87674
23	1701874-18 CH-AT-1FB132-1217 0.25	171213G1_Analyte			4.32	8772.408	8772.408	12372.36	70.90327
24	IPA	171213G1_Analyte			4.37	1.689	1.689	12372.36	0.013651
25	ST171212G2-10 PFC CS3 17K3027	171213G1_Analyte			4.32	9931.081	9931.081	12372.36	80.26828

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	ST171213G1-1 PFC CS-1 537 17K3024	171213G1_Analyte			4.73	11071.66	11071.66	13322.56 83.10462
2	IPA	171213G1_Analyte			4.48	2.289	2.289	13322.56 0.017181
3	B7L0065-BS1 LFB 0.25	171213G1_Analyte			4.73	8794.311	8794.311	13322.56 66.01067
4	B7L0065-BSD1 LFB 0.25	171213G1_Analyte			4.73	8580.786	8580.786	13322.56 64.40794
5	B7L0065-BLK1 LRB 0.25	171213G1_Analyte			4.73	8923.427	8923.427	13322.56 66.97982
6	1701874-01 CH-AT-1RW123-1217 0.25	171213G1_Analyte			4.73	8851.785	8851.785	13322.56 66.44207
7	1701874-02 CH-AT-1FB123-1217 0.25	171213G1_Analyte			4.73	8491.773	8491.773	13322.56 63.7398
8	1701874-03 CH-AT-1RW124-1217 0.25	171213G1_Analyte			4.73	9374.688	9374.688	13322.56 70.36702
9	1701874-04 CH-AT-1FB124-1217 0.25	171213G1_Analyte			4.74	8722.721	8722.721	13322.56 65.47331
10	1701874-05 CH-AT-1RW125-1217 0.25	171213G1_Analyte			4.73	8578.227	8578.227	13322.56 64.38873
11	1701874-06 CH-AT-1FB125-1217 0.25	171213G1_Analyte			4.73	8500.051	8500.051	13322.56 63.80193
12	1701874-07 CH-AT-1RW126-1217 0.25	171213G1_Analyte			4.73	9066.089	9066.089	13322.56 68.05065
13	1701874-08 CH-AT-1FB126-1217 0.25	171213G1_Analyte			4.73	8712.138	8712.138	13322.56 65.39387
14	1701874-09 CH-AT-1RW127-1217 0.25	171213G1_Analyte			4.73	8520.913	8520.913	13322.56 63.95853
15	1701874-10 CH-AT-1FB127-1217 0.25	171213G1_Analyte			4.73	7979.963	7979.963	13322.56 59.89812
16	1701874-11 CH-AT-1RW128-1217 0.25	171213G1_Analyte			4.73	8616.483	8616.483	13322.56 64.67588
17	1701874-12 CH-AT-1FB128-1217 0.25	171213G1_Analyte			4.73	8217.151	8217.151	13322.56 61.67847
18	1701874-13 CH-AT-1RW129-1217 0.25	171213G1_Analyte			4.74	7838.179	7838.179	13322.56 58.83388
19	1701874-14 CH-AT-1FB129-1217 0.25	171213G1_Analyte			4.73	9516.574	9516.574	13322.56 71.43202
20	1701874-15 CH-AT-1RW130-1217 0.25	171213G1_Analyte			4.73	9104.277	9104.277	13322.56 68.33729
21	1701874-16 CH-AT-1FB130-1217 0.25	171213G1_Analyte			4.74	8706.646	8706.646	13322.56 65.35265
22	1701874-17 CH-AT-1RW132-1217 0.25	171213G1_Analyte			4.74	7742.291	7742.291	13322.56 58.11414
23	1701874-18 CH-AT-1FB132-1217 0.25	171213G1_Analyte			4.74	8265.59	8265.59	13322.56 62.04205
24	IPA	171213G1_Analyte			4.67	3.141	3.141	13322.56 0.023577
25	ST171212G2-10 PFC CS3 17K3027	171213G1_Analyte			4.74	9301.97	9301.97	13322.56 69.82119

ccals

Compound 6: 13C2-PFOA

ST171213G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal area	Area%
1	ST171213G1-1 PFC CS-1 537 17K3024	171213G1_Analyte			4.31	11373.99	11373.99	100

2 IPA	171213G1_Analyte	4.25	0.478	0.478	11373.99	0.004203
3 B7L0065-BS1 LFB 0.25	171213G1_Analyte	4.32	8701.148	8701.148	11373.99	76.50043
4 B7L0065-BSD1 LFBD 0.25	171213G1_Analyte	4.32	9177.66	9177.66	11373.99	80.68992
5 B7L0065-BLK1 LRB 0.25	171213G1_Analyte	4.32	9428.498	9428.498	11373.99	82.89528
6 1701874-01 CH-AT-1RW123-1217 0.25	171213G1_Analyte	4.32	9650.605	9650.605	11373.99	84.84805
7 1701874-02 CH-AT-1FB123-1217 0.25	171213G1_Analyte	4.32	9627.344	9627.344	11373.99	84.64354
8 1701874-03 CH-AT-1RW124-1217 0.25	171213G1_Analyte	4.32	9461.7	9461.7	11373.99	83.1872
9 1701874-04 CH-AT-1FB124-1217 0.25	171213G1_Analyte	4.32	9686.286	9686.286	11373.99	85.16175
10 1701874-05 CH-AT-1RW125-1217 0.25	171213G1_Analyte	4.32	8835.772	8835.772	11373.99	77.68404
11 1701874-06 CH-AT-1FB125-1217 0.25	171213G1_Analyte	4.32	9162.32	9162.32	11373.99	80.55505
12 1701874-07 CH-AT-1RW126-1217 0.25	171213G1_Analyte	4.32	8577.367	8577.367	11373.99	75.41215
13 1701874-08 CH-AT-1FB126-1217 0.25	171213G1_Analyte	4.32	10053.36	10053.36	11373.99	88.38907
14 1701874-09 CH-AT-1RW127-1217 0.25	171213G1_Analyte	4.32	9172.195	9172.195	11373.99	80.64187
15 1701874-10 CH-AT-1FB127-1217 0.25	171213G1_Analyte	4.32	9344.267	9344.267	11373.99	82.15473
16 1701874-11 CH-AT-1RW128-1217 0.25	171213G1_Analyte	4.32	9264.837	9264.837	11373.99	81.45638
17 1701874-12 CH-AT-1FB128-1217 0.25	171213G1_Analyte	4.32	8291.57	8291.57	11373.99	72.89942
18 1701874-13 CH-AT-1RW129-1217 0.25	171213G1_Analyte	4.32	8444.933	8444.933	11373.99	74.24779
19 1701874-14 CH-AT-1FB129-1217 0.25	171213G1_Analyte	4.32	9152.449	9152.449	11373.99	80.46826
20 1701874-15 CH-AT-1RW130-1217 0.25	171213G1_Analyte	4.32	9291.483	9291.483	11373.99	81.69065
21 1701874-16 CH-AT-1FB130-1217 0.25	171213G1_Analyte	4.33	8800.156	8800.156	11373.99	77.37091
22 1701874-17 CH-AT-1RW132-1217 0.25	171213G1_Analyte	4.32	8892.849	8892.849	11373.99	78.18586
23 1701874-18 CH-AT-1FB132-1217 0.25	171213G1_Analyte	4.32	8772.408	8772.408	11373.99	77.12695
24 IPA	171213G1_Analyte	4.37	1.689	1.689	11373.99	0.01485
25 ST171212G2-10 PFC CS3 17K3027	171213G1_Analyte	4.32	9931.081	9931.081	11373.99	87.31399

Compound 7: 13C4-PFOS

ST171213G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %	
1 ST171213G1-1 PFC CS-1 537 17K3024	171213G1_Analyte				4.73	11071.66	11071.66	11071.66	100
2 IPA	171213G1_Analyte				4.48	2.289	2.289	11071.66	0.020674
3 B7L0065-BS1 LFB 0.25	171213G1_Analyte				4.73	8794.311	8794.311	11071.66	79.4308
4 B7L0065-BSD1 LFBD 0.25	171213G1_Analyte				4.73	8580.786	8580.786	11071.66	77.50223
5 B7L0065-BLK1 LRB 0.25	171213G1_Analyte				4.73	8923.427	8923.427	11071.66	80.59699
6 1701874-01 CH-AT-1RW123-1217 0.25	171213G1_Analyte				4.73	8851.785	8851.785	11071.66	79.94991

7	1701874-02 CH-AT-1FB123-1217 0.25	171213G1_Analyte	4.73	8491.773	8491.773	11071.66	76.69826
8	1701874-03 CH-AT-1RW124-1217 0.25	171213G1_Analyte	4.73	9374.688	9374.688	11071.66	84.67281
9	1701874-04 CH-AT-1FB124-1217 0.25	171213G1_Analyte	4.74	8722.721	8722.721	11071.66	78.7842
10	1701874-05 CH-AT-1RW125-1217 0.25	171213G1_Analyte	4.73	8578.227	8578.227	11071.66	77.47912
11	1701874-06 CH-AT-1FB125-1217 0.25	171213G1_Analyte	4.73	8500.051	8500.051	11071.66	76.77303
12	1701874-07 CH-AT-1RW126-1217 0.25	171213G1_Analyte	4.73	9066.089	9066.089	11071.66	81.88552
13	1701874-08 CH-AT-1FB126-1217 0.25	171213G1_Analyte	4.73	8712.138	8712.138	11071.66	78.68861
14	1701874-09 CH-AT-1RW127-1217 0.25	171213G1_Analyte	4.73	8520.913	8520.913	11071.66	76.96146
15	1701874-10 CH-AT-1FB127-1217 0.25	171213G1_Analyte	4.73	7979.963	7979.963	11071.66	72.07556
16	1701874-11 CH-AT-1RW128-1217 0.25	171213G1_Analyte	4.73	8616.483	8616.483	11071.66	77.82465
17	1701874-12 CH-AT-1FB128-1217 0.25	171213G1_Analyte	4.73	8217.151	8217.151	11071.66	74.21786
18	1701874-13 CH-AT-1RW129-1217 0.25	171213G1_Analyte	4.74	7838.179	7838.179	11071.66	70.79496
19	1701874-14 CH-AT-1FB129-1217 0.25	171213G1_Analyte	4.73	9516.574	9516.574	11071.66	85.95433
20	1701874-15 CH-AT-1RW130-1217 0.25	171213G1_Analyte	4.73	9104.277	9104.277	11071.66	82.23044
21	1701874-16 CH-AT-1FB130-1217 0.25	171213G1_Analyte	4.74	8706.646	8706.646	11071.66	78.63901
22	1701874-17 CH-AT-1RW132-1217 0.25	171213G1_Analyte	4.74	7761.782	7761.782	11071.66	70.10493
23	1701874-18 CH-AT-1FB132-1217 0.25	171213G1_Analyte	4.74	8265.59	8265.59	11071.66	74.65536
24	IPA	171213G1_Analyte	4.67	3.141	3.141	11071.66	0.02837
25	ST171212G2-10 PFC CS3 17K3027	171213G1_Analyte	4.74	9301.97	9301.97	11071.66	84.01601

Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-2.qld

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Printed: Wednesday, December 13, 2017 15:02:14 Pacific Standard Time

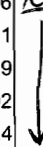
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: ST171213G1-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024, Name: 171213G1_2, Date: 13-Dec-2017, Time: 09:45:55

	#.Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	5.788e2	1.107e4		1.00	3.02	1.87	106
2	2 PFOA	413 > 368.70	2.057e3	1.140e4		1.00	4.31	2.22	111
3	3 PFOS	499.00 > 79.90	7.803e2	1.107e4		1.00	4.73	1.68	90.9
4	4 13C2-PFHxA	315.0 > 269.80	5.166e3	1.140e4	0.443	1.00	3.38	10.2	102
5	5 13C2-PFDA	515.10 > 469.90	5.710e3	1.140e4	0.509	1.00	4.96	9.84	98.4
6	6 13C2-PFOA	414.90 > 369.70	1.140e4	1.140e4	1.000	1.00	4.31	10.0	100
7	7 13C4-PFOS	503.0 > 79.90	1.107e4	1.107e4	1.000	1.00	4.73	28.7	100

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Dataset: Untitled

Last Altered: Wednesday, December 13, 2017 15:08:09 Pacific Standard Time
Printed: Wednesday, December 13, 2017 15:08:28 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171213G1_1	IPA	13-Dec-17	09:32:57
2	171213G1_2	ST171213G1-1 PFC CS-1 537 17K3024	13-Dec-17	09:45:55
3	171213G1_3	IPA	13-Dec-17	09:58:19
4	171213G1_4	B7L0065-BS1 LFB 0.25	13-Dec-17	10:10:50
5	171213G1_5	B7L0065-BSD1 LFBD 0.25	13-Dec-17	10:23:16
6	171213G1_6	B7L0065-BLK1 LRB 0.25	13-Dec-17	10:35:43
7	171213G1_7	1701874-01 CH-AT-1RW123-1217 0.25	13-Dec-17	10:48:09
8	171213G1_8	1701874-02 CH-AT-1FB123-1217 0.25	13-Dec-17	11:00:36
9	171213G1_9	1701874-03 CH-AT-1RW124-1217 0.25	13-Dec-17	11:13:04
10	171213G1_10	1701874-04 CH-AT-1FB124-1217 0.25	13-Dec-17	11:25:32
11	171213G1_11	1701874-05 CH-AT-1RW125-1217 0.25	13-Dec-17	11:37:57
12	171213G1_12	1701874-06 CH-AT-1FB125-1217 0.25	13-Dec-17	11:50:21
13	171213G1_13	1701874-07 CH-AT-1RW126-1217 0.25	13-Dec-17	12:02:46
14	171213G1_14	1701874-08 CH-AT-1FB126-1217 0.25	13-Dec-17	12:15:12
15	171213G1_15	1701874-09 CH-AT-1RW127-1217 0.25	13-Dec-17	12:27:38
16	171213G1_16	1701874-10 CH-AT-1FB127-1217 0.25	13-Dec-17	12:40:05
17	171213G1_17	1701874-11 CH-AT-1RW128-1217 0.25	13-Dec-17	12:52:32
18	171213G1_18	1701874-12 CH-AT-1FB128-1217 0.25	13-Dec-17	13:05:00
19	171213G1_19	1701874-13 CH-AT-1RW129-1217 0.25	13-Dec-17	13:17:25
20	171213G1_20	1701874-14 CH-AT-1FB129-1217 0.25	13-Dec-17	13:29:50
21	171213G1_21	1701874-15 CH-AT-1RW130-1217 0.25	13-Dec-17	13:42:15
22	171213G1_22	1701874-16 CH-AT-1FB130-1217 0.25	13-Dec-17	13:54:41
23	171213G1_23	1701874-17 CH-AT-1RW132-1217 0.25	13-Dec-17	14:07:07
24	171213G1_24	1701874-18 CH-AT-1FB132-1217 0.25	13-Dec-17	14:19:33
25	171213G1_25	IPA	13-Dec-17	14:32:00
26	171213G1_26	ST171213G1-2 PFC CS3 17K3027	13-Dec-17	14:44:27
27	171213G1_27	IPA	13-Dec-17	14:56:52

LC Calibration Standards Review Checklist 021

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
ST171213G1-1	LMH	☒	☒	☒	☒	☒	☒	☒
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Calibration ID: <u> </u>	LMH	☐	☐	☐	☐	☐	☐	☐
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Calibration ID: <u> </u>	LMH	☐	☐	☐	☐	☐	☐	☐
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Calibration ID: <u> </u>	LMH	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By: JA- 12/13/2017
Initials/Date

Comments: DW L3

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Last Altered: Wednesday, December 13, 2017 15:01:20 Pacific Standard Time

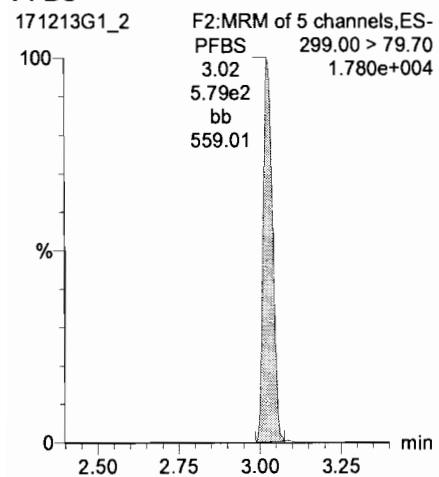
Printed: Wednesday, December 13, 2017 15:02:14 Pacific Standard Time

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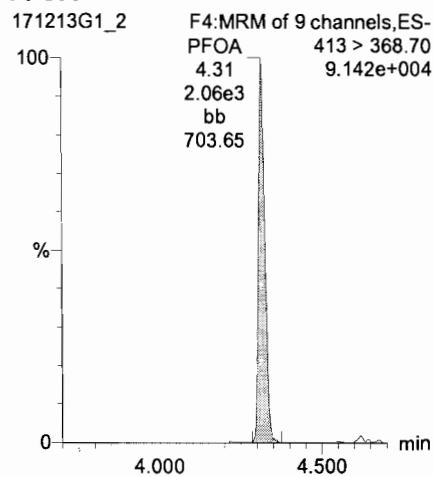
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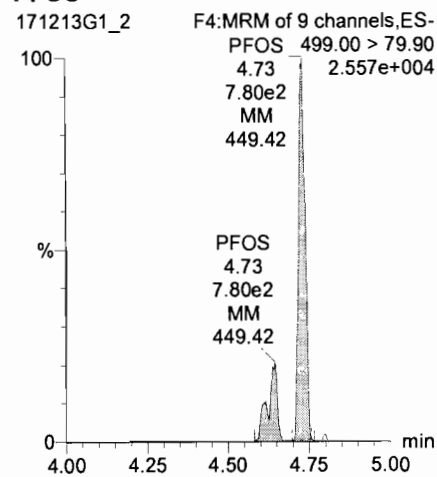
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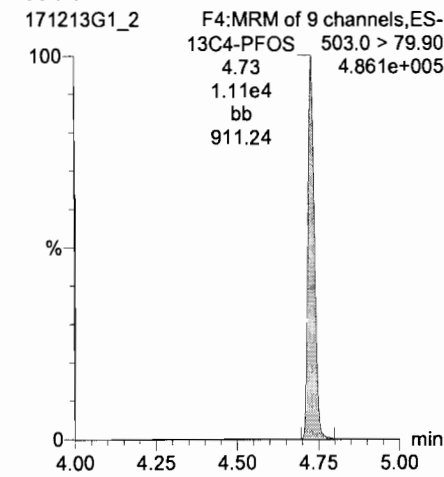
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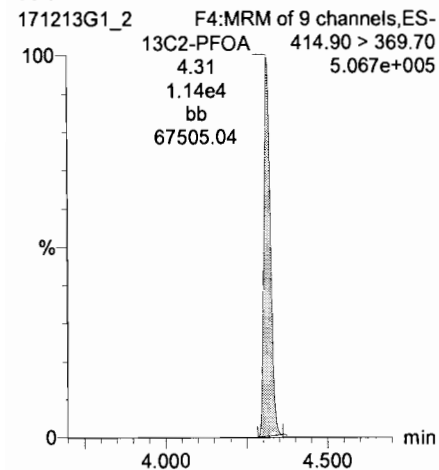
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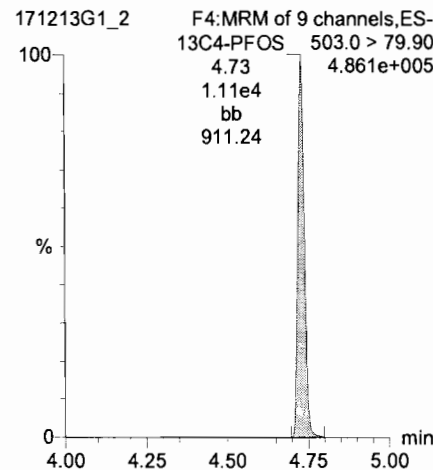
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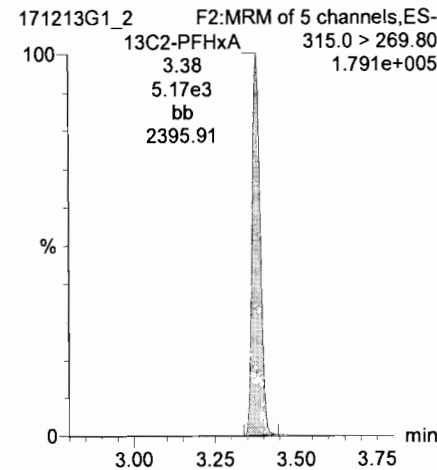
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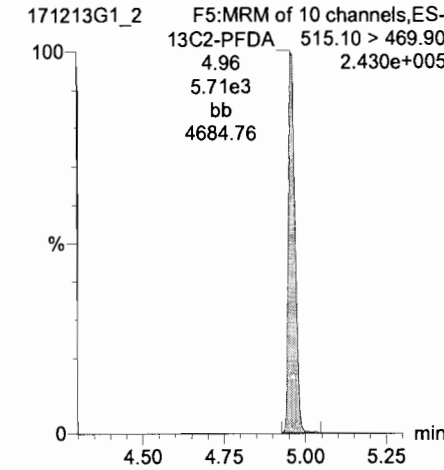
13C4-PFOS



13C2-PFHxA



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171213G1\171213G1-26.qld

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Printed: Wednesday, December 13, 2017 15:07:23 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

ID: ST171213G1-2 PFC CS3 17K3027, Description: PFC CS3 17K3027, Name: 171213G1_26, Date: 13-Dec-2017, Time: 14:44:27

	#.Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	1.206e4	9.302e3		1.00	3.04	46.5	105
2	2 PFOA	413 > 368.70	4.142e4	9.931e3		1.00	4.32	51.4	103
3	3 PFOS	499.00 > 79.90	1.746e4	9.302e3		1.00	4.74	44.8	96.9
4	4 13C2-PFHxA	315.0 > 269.80	4.627e3	9.931e3	0.443	1.00	3.39	10.5	105
5	5 13C2-PFDA	515.10 > 469.90	5.234e3	9.931e3	0.509	1.00	4.97	10.3	103
6	6 13C2-PFOA	414.90 > 369.70	9.931e3	9.931e3	1.000	1.00	4.32	10.0	100
7	7 13C4-PFOS	503.0 > 79.90	9.302e3	9.302e3	1.000	1.00	4.74	28.7	100

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Dataset: Untitled

Last Altered: Wednesday, December 13, 2017 15:08:09 Pacific Standard Time

Printed: Wednesday, December 13, 2017 15:08:28 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171213G1_1	IPA	13-Dec-17	09:32:57
2	171213G1_2	ST171213G1-1 PFC CS-1 537 17K3024	13-Dec-17	09:45:55
3	171213G1_3	IPA	13-Dec-17	09:58:19
4	171213G1_4	B7L0065-BS1 LFB 0.25	13-Dec-17	10:10:50
5	171213G1_5	B7L0065-BSD1 LFB 0.25	13-Dec-17	10:23:16
6	171213G1_6	B7L0065-BLK1 LRB 0.25	13-Dec-17	10:35:43
7	171213G1_7	1701874-01 CH-AT-1RW123-1217 0.25	13-Dec-17	10:48:09
8	171213G1_8	1701874-02 CH-AT-1FB123-1217 0.25	13-Dec-17	11:00:36
9	171213G1_9	1701874-03 CH-AT-1RW124-1217 0.25	13-Dec-17	11:13:04
10	171213G1_10	1701874-04 CH-AT-1FB124-1217 0.25	13-Dec-17	11:25:32
11	171213G1_11	1701874-05 CH-AT-1RW125-1217 0.25	13-Dec-17	11:37:57
12	171213G1_12	1701874-06 CH-AT-1FB125-1217 0.25	13-Dec-17	11:50:21
13	171213G1_13	1701874-07 CH-AT-1RW126-1217 0.25	13-Dec-17	12:02:46
14	171213G1_14	1701874-08 CH-AT-1FB126-1217 0.25	13-Dec-17	12:15:12
15	171213G1_15	1701874-09 CH-AT-1RW127-1217 0.25	13-Dec-17	12:27:38
16	171213G1_16	1701874-10 CH-AT-1FB127-1217 0.25	13-Dec-17	12:40:05
17	171213G1_17	1701874-11 CH-AT-1RW128-1217 0.25	13-Dec-17	12:52:32
18	171213G1_18	1701874-12 CH-AT-1FB128-1217 0.25	13-Dec-17	13:05:00
19	171213G1_19	1701874-13 CH-AT-1RW129-1217 0.25	13-Dec-17	13:17:25
20	171213G1_20	1701874-14 CH-AT-1FB129-1217 0.25	13-Dec-17	13:29:50
21	171213G1_21	1701874-15 CH-AT-1RW130-1217 0.25	13-Dec-17	13:42:15
22	171213G1_22	1701874-16 CH-AT-1FB130-1217 0.25	13-Dec-17	13:54:41
23	171213G1_23	1701874-17 CH-AT-1RW132-1217 0.25	13-Dec-17	14:07:07
24	171213G1_24	1701874-18 CH-AT-1FB132-1217 0.25	13-Dec-17	14:19:33
25	171213G1_25	IPA	13-Dec-17	14:32:00
26	171213G1_26	ST171213G1-2 PFC CS3 17K3027	13-Dec-17	14:44:27
27	171213G1_27	IPA	13-Dec-17	14:56:52

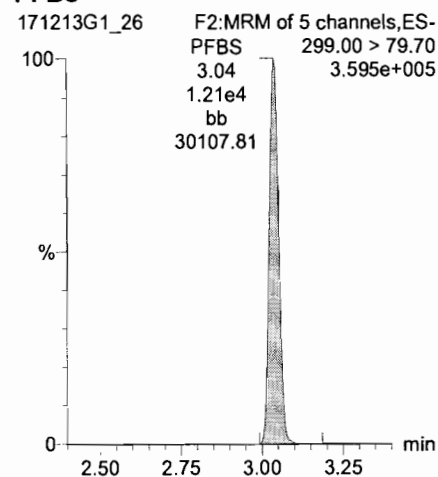
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Printed: Wednesday, December 13, 2017 15:07:23 Pacific Standard Time

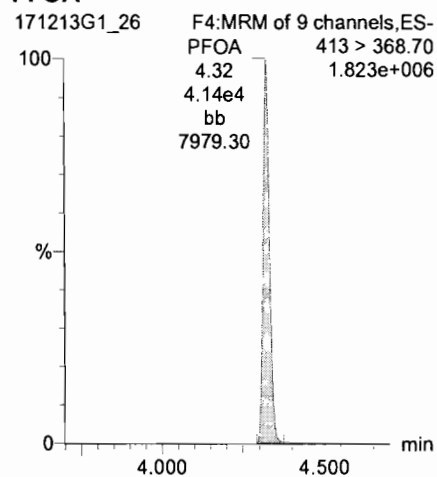
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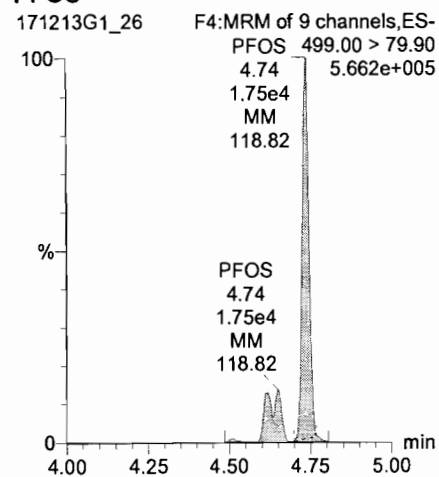
PFBS



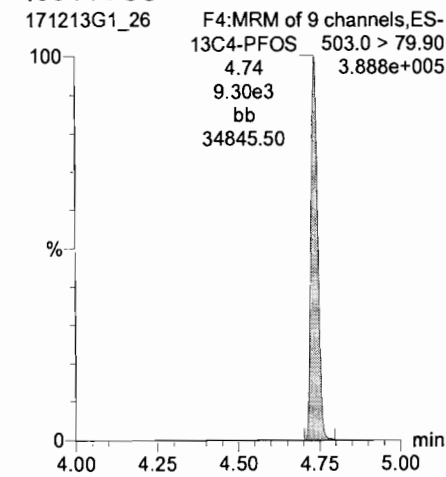
PFOA



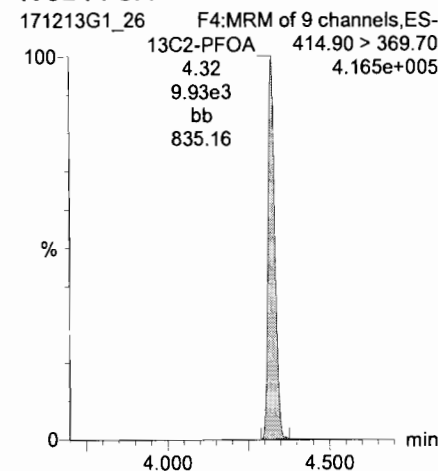
PFOS



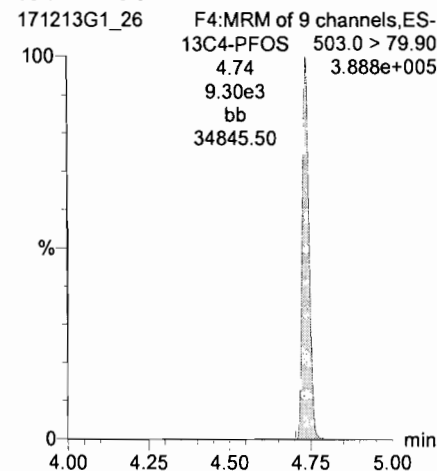
13C4-PFOS



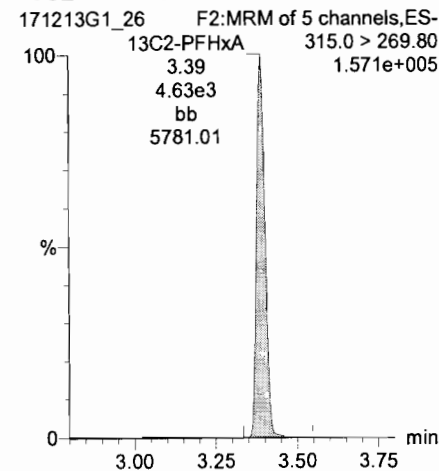
13C2-PFOA



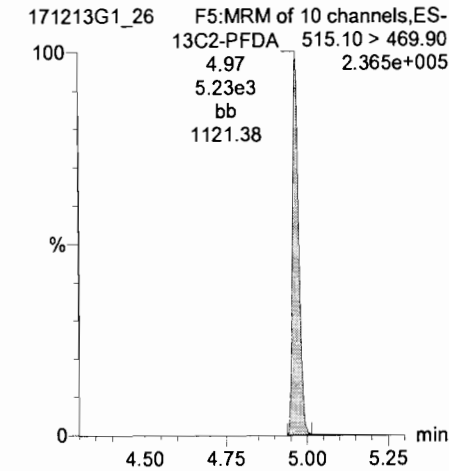
13C4-PFOS



13C2-PFHxA



13C2-PFDA



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

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time

Printed: Monday, December 11, 2017 10:37:29 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

Coefficient of Determination: $R^2 = 0.994837$

Calibration curve: $0.800672 * x$

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

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

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	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171208G2_2	Standard	0.443	3.02	134.074	11857.967	0.325	0.4	-8.4	NO	0.995	NO	MMX
2	2 171208G2_3	Standard	0.885	3.01	428.832	15349.467	0.802	1.0	13.2	NO	0.995	NO	bbX
3	3 171208G2_4	Standard	1.770	3.01	759.007	14402.649	1.512	1.9	6.7	NO	0.995	NO	bb
4	4 171208G2_5	Standard	4.420	3.01	1983.680	14516.459	3.922	4.9	10.8	NO	0.995	NO	MM
5	5 171208G2_6	Standard	8.850	3.01	2903.323	11953.820	6.971	8.7	-1.6	NO	0.995	NO	bb
6	6 171208G2_7	Standard	22.100	3.01	8898.488	13445.892	18.994	23.7	7.3	NO	0.995	NO	bb
7	7 171208G2_8	Standard	44.200	3.01	14447.786	12293.957	33.728	42.1	-4.7	NO	0.995	NO	bb
8	8 171208G2_9	Standard	66.300	3.01	21148.451	10786.034	56.273	70.3	6.0	NO	0.995	NO	bbX
9	9 171208G2_10	Standard	88.400	3.01	29888.051	12003.273	71.463	89.3	1.0	NO	0.995	NO	bbX

Compound name: PFOA

Coefficient of Determination: $R^2 = 0.997893$

Calibration curve: $0.811837 * x$

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 171208G2_2	Standard	0.500	4.33	504.601	11571.904	0.436	0.5	7.4	NO	0.998	NO	bbX
2	2 171208G2_3	Standard	1.000	4.31	1289.415	14038.166	0.919	1.1	13.1	NO	0.998	NO	bbX
3	3 171208G2_4	Standard	2.000	4.31	2044.709	12600.569	1.623	2.0	-0.1	NO	0.998	NO	bb
4	4 171208G2_5	Standard	5.000	4.31	5935.702	13262.253	4.476	5.5	10.3	NO	0.998	NO	bd
5	5 171208G2_6	Standard	10.000	4.31	8915.754	12044.611	7.402	9.1	-8.8	NO	0.998	NO	bd
6	6 171208G2_7	Standard	25.000	4.31	25977.795	12740.901	20.389	25.1	0.5	NO	0.998	NO	bd
7	7 171208G2_8	Standard	50.000	4.31	45749.875	11213.454	40.799	50.3	0.5	NO	0.998	NO	bd
8	8 171208G2_9	Standard	75.000	4.31	60947.063	9546.963	63.839	78.6	4.8	NO	0.998	NO	bdX
9	9 171208G2_10	Standard	100.000	4.31	85445.031	11090.062	77.046	94.9	-5.1	NO	0.998	NO	bbX

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: PFOS

Coefficient of Determination: $R^2 = 0.998516$

Calibration curve: $1.20278 * x$

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 171208G2_2	Standard	0.464	4.73	185.089	11857.967	0.448	0.4	-19.7	NO	0.999	NO	MMX
2	2 171208G2_3	Standard	0.925	4.73	617.089	15349.467	1.154	1.0	3.7	NO	0.999	NO	MMX
3	3 171208G2_4	Standard	1.850	4.72	889.150	14402.649	1.772	1.5	-20.4	NO	0.999	NO	MM
4	4 171208G2_5	Standard	4.625	4.73	2773.974	14516.459	5.484	4.6	-1.4	NO	0.999	NO	MM
5	5 171208G2_6	Standard	9.250	4.73	4524.466	11953.820	10.863	9.0	-2.4	NO	0.999	NO	MM
6	6 171208G2_7	Standard	23.100	4.73	13079.806	13445.892	27.919	23.2	0.5	NO	0.999	NO	MM
7	7 171208G2_8	Standard	46.200	4.72	24086.246	12293.957	56.229	46.7	1.2	NO	0.999	NO	MM
8	8 171208G2_9	Standard	69.300	4.72	33750.160	10786.034	89.804	74.7	7.7	NO	0.999	NO	MMX
9	9 171208G2_10	Standard	92.400	4.72	47716.457	12003.273	114.091	94.9	2.7	NO	0.999	NO	MMX

Compound name: 13C2-PFHxA

Response Factor: 0.44294

RRF SD: 0.0227764, Relative SD: 5.14209

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 171208G2_2	Standard	10.000	3.38	4801.410	11571.904	4.149	9.4	-6.3	NO		NO	bbX
2	2 171208G2_3	Standard	10.000	3.37	6735.231	14038.166	4.798	10.8	8.3	NO		NO	bbX
3	3 171208G2_4	Standard	10.000	3.36	5697.994	12600.569	4.522	10.2	2.1	NO		NO	bb
4	4 171208G2_5	Standard	10.000	3.37	6341.437	13262.253	4.782	10.8	8.0	NO		NO	bb
5	5 171208G2_6	Standard	10.000	3.36	5086.919	12044.611	4.223	9.5	-4.7	NO		NO	bd
6	6 171208G2_7	Standard	10.000	3.36	5434.637	12740.901	4.266	9.6	-3.7	NO		NO	bb
7	7 171208G2_8	Standard	10.000	3.36	4882.918	11213.454	4.355	9.8	-1.7	NO		NO	bb
8	8 171208G2_9	Standard	10.000	3.36	4706.410	9546.963	4.930	11.1	11.3	NO		NO	bdX
9	9 171208G2_10	Standard	10.000	3.36	4749.668	11090.062	4.283	9.7	-3.3	NO		NO	bdX

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: 13C2-PFDA

Response Factor: 0.509254

RRF SD: 0.0328522, Relative SD: 6.45105

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 171208G2_2	Standard	10.000	4.97	5579.112	11571.904	4.821	9.5	-5.3	NO		NO	bdX
2	2 171208G2_3	Standard	10.000	4.96	8625.498	14038.166	6.144	12.1	20.7	NO		NO	bbX
3	3 171208G2_4	Standard	10.000	4.96	6581.716	12600.569	5.223	10.3	2.6	NO		NO	bb
4	4 171208G2_5	Standard	10.000	4.96	7244.836	13262.253	5.463	10.7	7.3	NO		NO	bb
5	5 171208G2_6	Standard	10.000	4.96	5507.656	12044.611	4.573	9.0	-10.2	NO		NO	bb
6	6 171208G2_7	Standard	10.000	4.96	6576.478	12740.901	5.162	10.1	1.4	NO		NO	bb
7	7 171208G2_8	Standard	10.000	4.96	5654.003	11213.454	5.042	9.9	-1.0	NO		NO	bb
8	8 171208G2_9	Standard	10.000	4.96	5376.028	9546.963	5.631	11.1	10.6	NO		NO	bbX
9	9 171208G2_10	Standard	10.000	4.96	5314.285	11090.062	4.792	9.4	-5.9	NO		NO	bbX

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 171208G2_2	Standard	10.000	4.33	11571.904	11571.904	10.000	10.0	0.0	NO		NO	bbX
2	2 171208G2_3	Standard	10.000	4.31	14038.166	14038.166	10.000	10.0	0.0	NO		NO	bbX
3	3 171208G2_4	Standard	10.000	4.31	12600.569	12600.569	10.000	10.0	0.0	NO		NO	bb
4	4 171208G2_5	Standard	10.000	4.31	13262.253	13262.253	10.000	10.0	0.0	NO		NO	bb
5	5 171208G2_6	Standard	10.000	4.31	12044.611	12044.611	10.000	10.0	0.0	NO		NO	bd
6	6 171208G2_7	Standard	10.000	4.31	12740.901	12740.901	10.000	10.0	0.0	NO		NO	bd
7	7 171208G2_8	Standard	10.000	4.31	11213.454	11213.454	10.000	10.0	0.0	NO		NO	bb
8	8 171208G2_9	Standard	10.000	4.31	9546.963	9546.963	10.000	10.0	0.0	NO		NO	bbX
9	9 171208G2_10	Standard	10.000	4.31	11090.062	11090.062	10.000	10.0	0.0	NO		NO	bdX

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time

Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

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 171208G2_2	Standard	28.700	4.74	11857.967	11857.967	28.700	28.7	0.0	NO		NO	bdX
2	2 171208G2_3	Standard	28.700	4.73	15349.467	15349.467	28.700	28.7	0.0	NO		NO	bbX
3	3 171208G2_4	Standard	28.700	4.72	14402.649	14402.649	28.700	28.7	0.0	NO		NO	bd
4	4 171208G2_5	Standard	28.700	4.73	14516.459	14516.459	28.700	28.7	0.0	NO		NO	bd
5	5 171208G2_6	Standard	28.700	4.72	11953.820	11953.820	28.700	28.7	0.0	NO		NO	MM
6	6 171208G2_7	Standard	28.700	4.72	13445.892	13445.892	28.700	28.7	0.0	NO		NO	bb
7	7 171208G2_8	Standard	28.700	4.72	12293.957	12293.957	28.700	28.7	0.0	NO		NO	bd
8	8 171208G2_9	Standard	28.700	4.72	10786.034	10786.034	28.700	28.7	0.0	NO		NO	bbX
9	9 171208G2_10	Standard	28.700	4.72	12003.273	12003.273	28.700	28.7	0.0	NO		NO	bbX

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Last Altered: Monday, December 11, 2017 10:39:34 Pacific Standard Time

Printed: Monday, December 11, 2017 10:40:25 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

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3	171208G2_3	ST171208G2-2 PFC CS-2 537 17K3023	08-Dec-17	16:21:40
4	171208G2_4	ST171208G2-3 PFC CS-1 537 17K3024	08-Dec-17	16:34:04
5	171208G2_5	ST171208G2-4 PFC CS0 537 17K3025	08-Dec-17	16:46:29
6	171208G2_6	ST171208G2-5 PFC CS1 537 17K3026	08-Dec-17	16:58:55
7	171208G2_7	ST171208G2-6 PFC CS2 537 17K3033	08-Dec-17	17:11:21
8	171208G2_8	ST171208G2-7 PFC CS3 537 17K3027	08-Dec-17	17:23:47
9	171208G2_9	ST171208G2-8 PFC CS4 537 17K3028	08-Dec-17	17:36:15
10	171208G2_10	ST171208G2-9 PFC CS5 537 17K3029	08-Dec-17	17:48:42
11	171208G2_11	IPA	08-Dec-17	18:01:06
12	171208G2_12	ICV171208G2-1 PFC ICV 537 17K3030	08-Dec-17	18:13:34
13	171208G2_13	IPA	08-Dec-17	18:25:58

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time

Printed: Monday, December 11, 2017 10:36:23 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

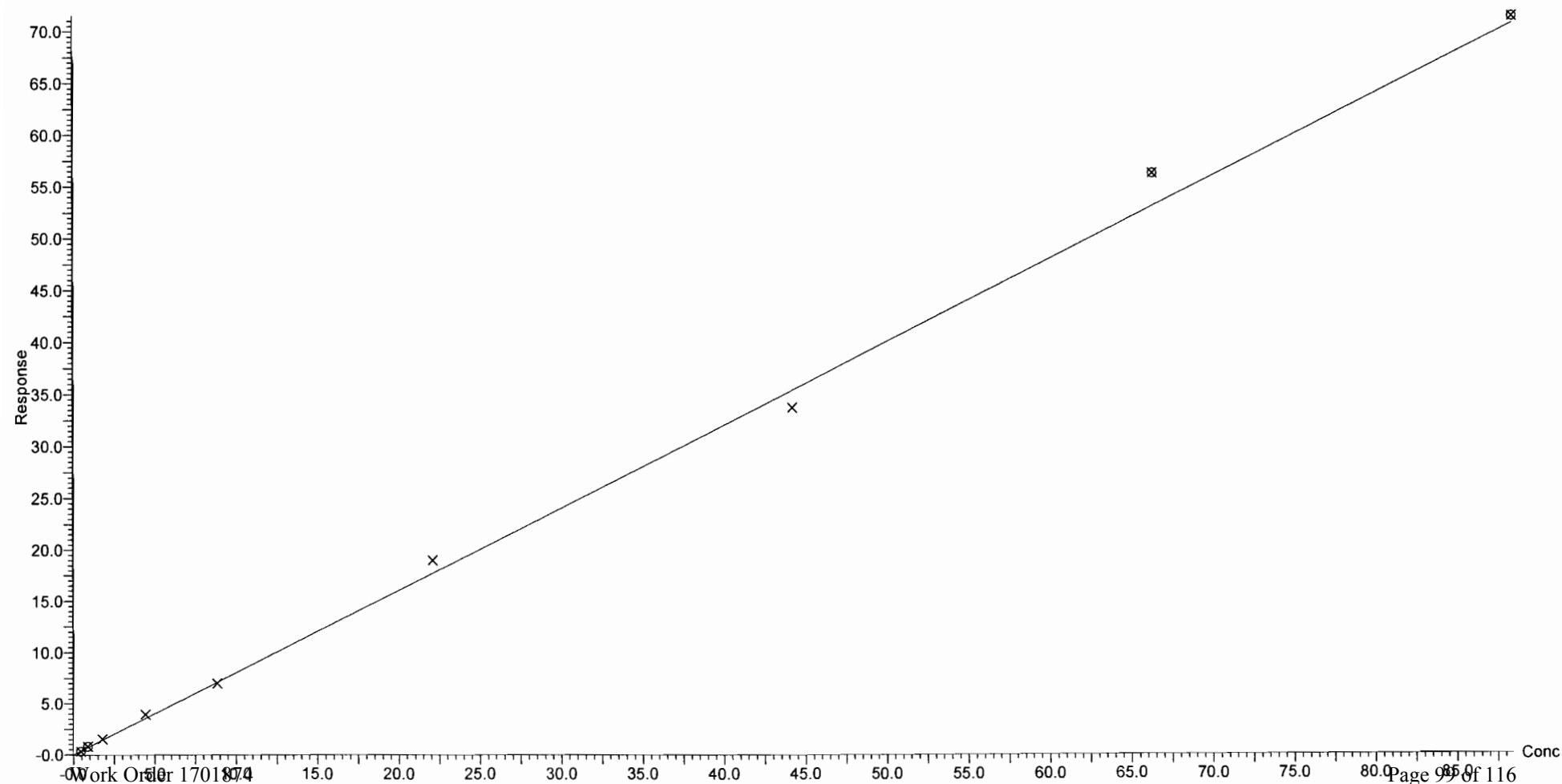
Compound name: PFBS

Coefficient of Determination: $R^2 = 0.994837$

Calibration curve: $0.800672 * x$

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\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time

Printed: Monday, December 11, 2017 10:36:23 Pacific Standard Time

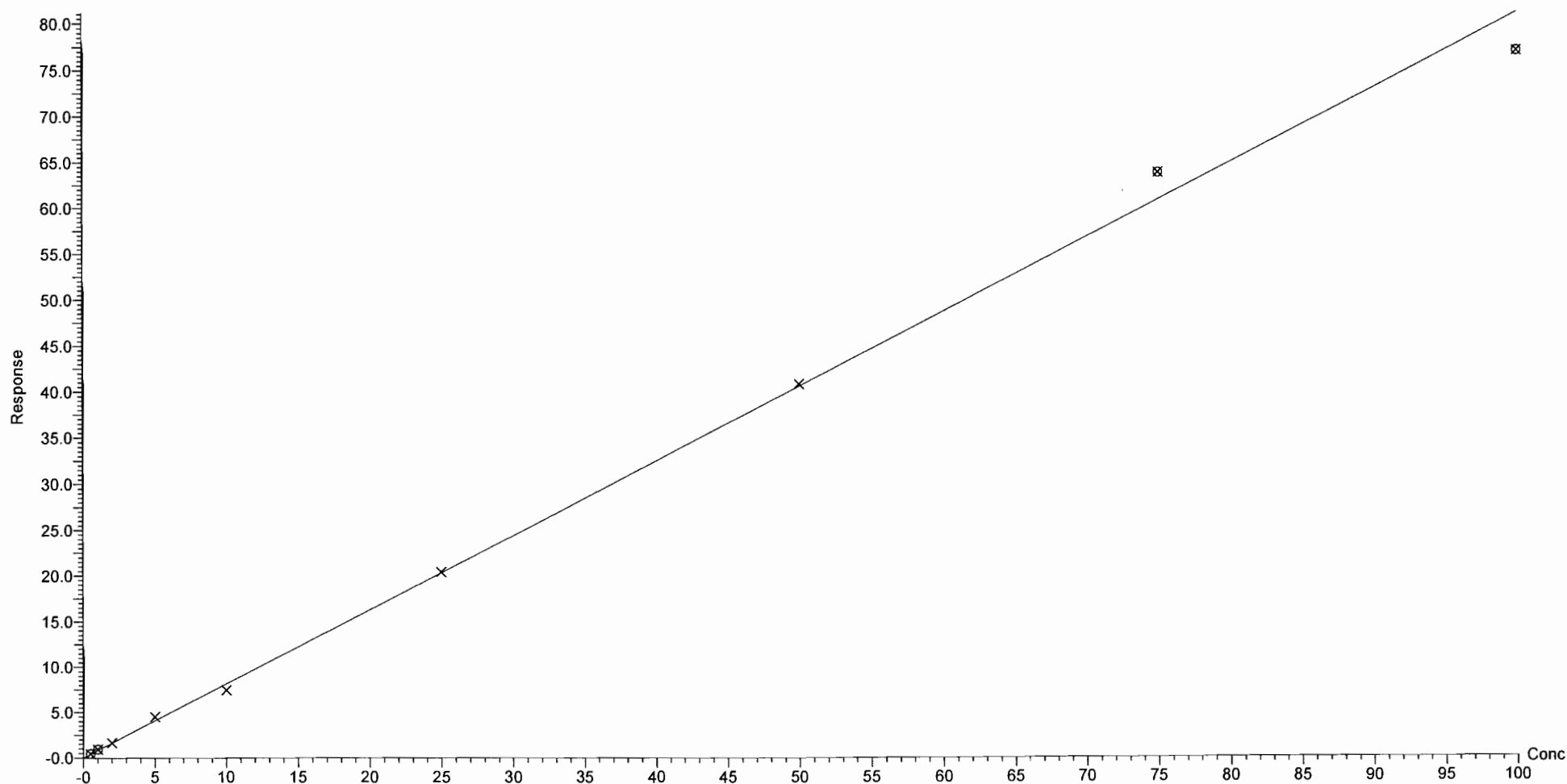
Compound name: PFOA

Coefficient of Determination: $R^2 = 0.997893$

Calibration curve: $0.811837 * x$

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

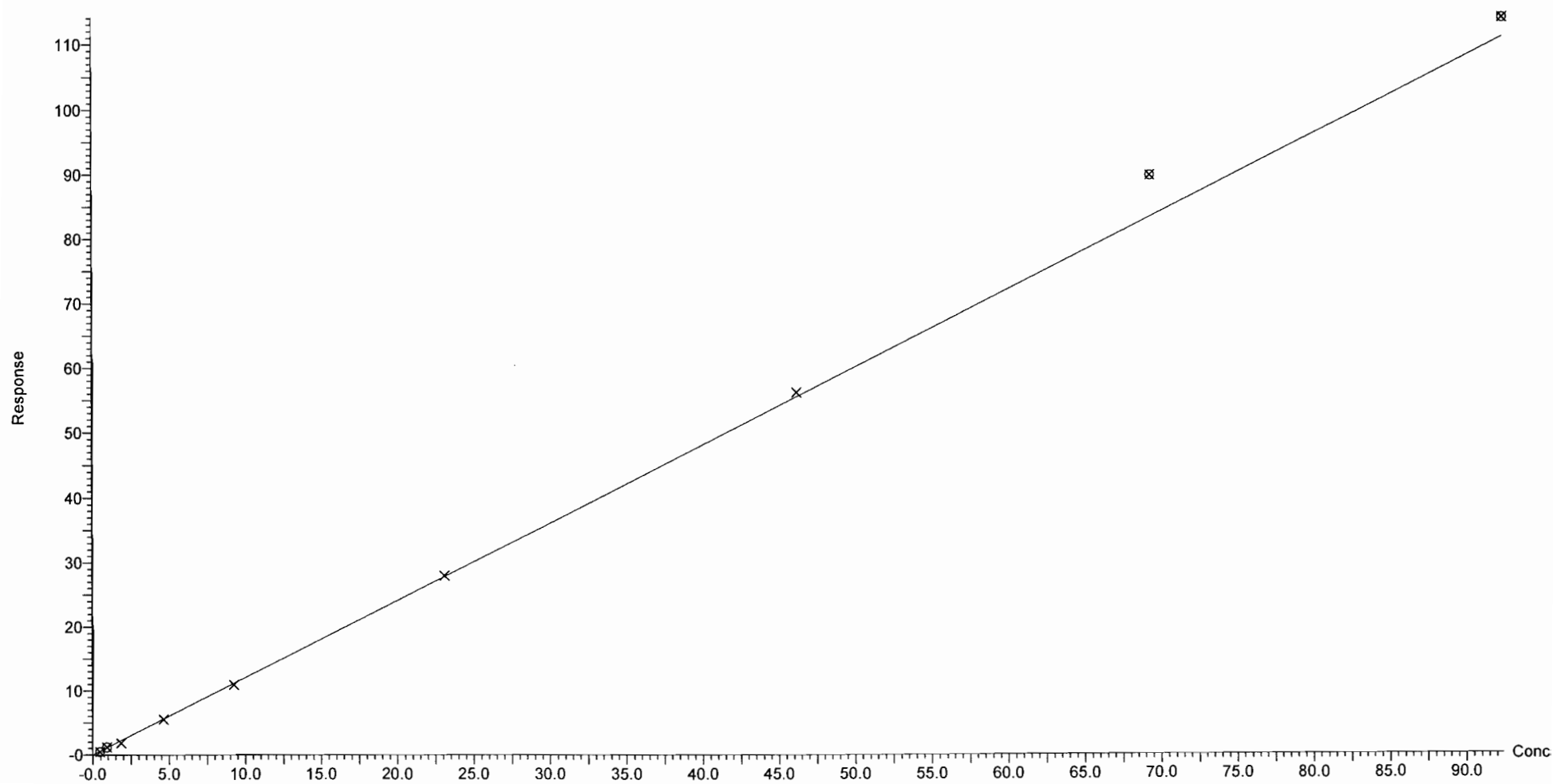
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Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:36:23 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: $R^2 = 0.998516$
Calibration curve: $1.20278 * x$
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

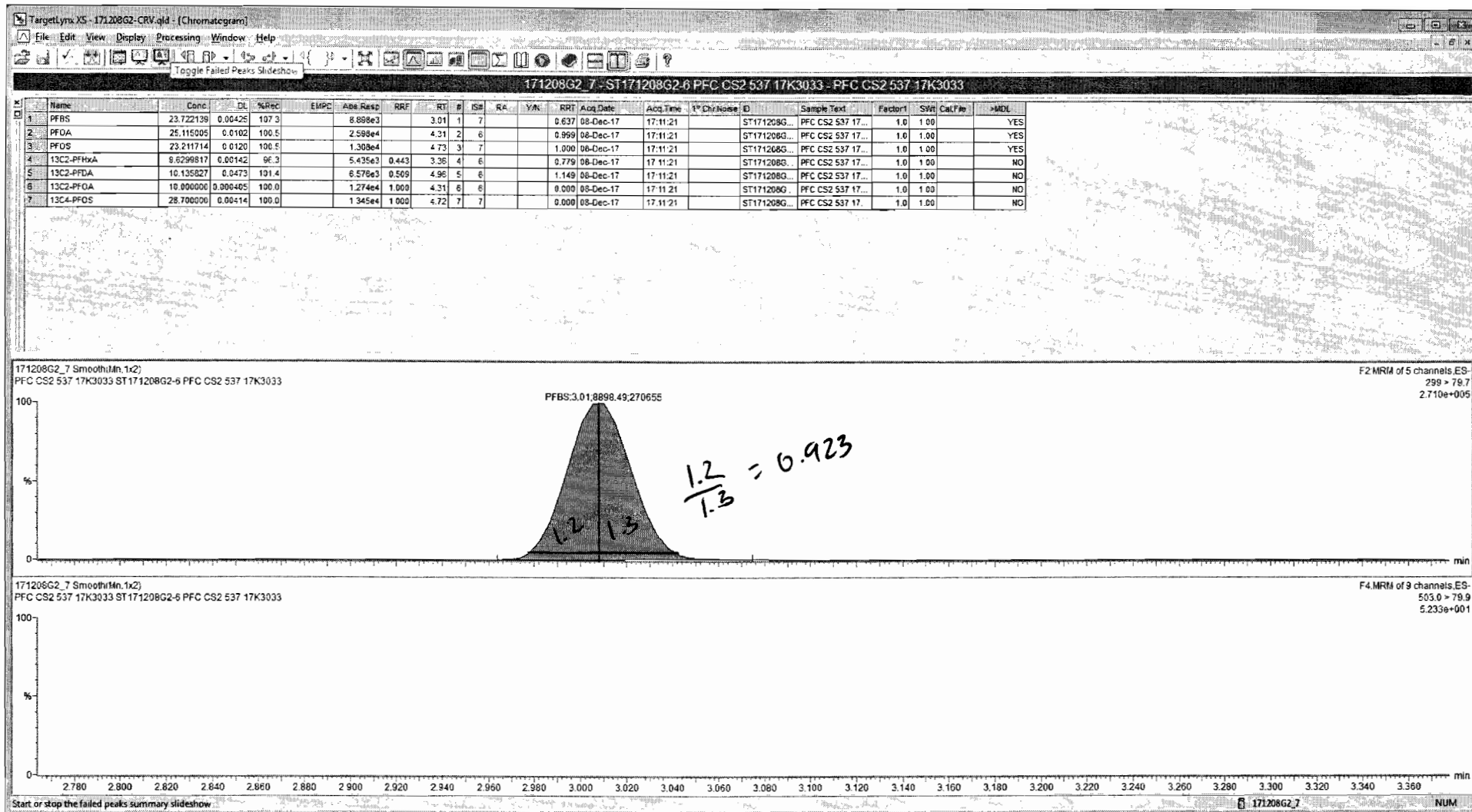


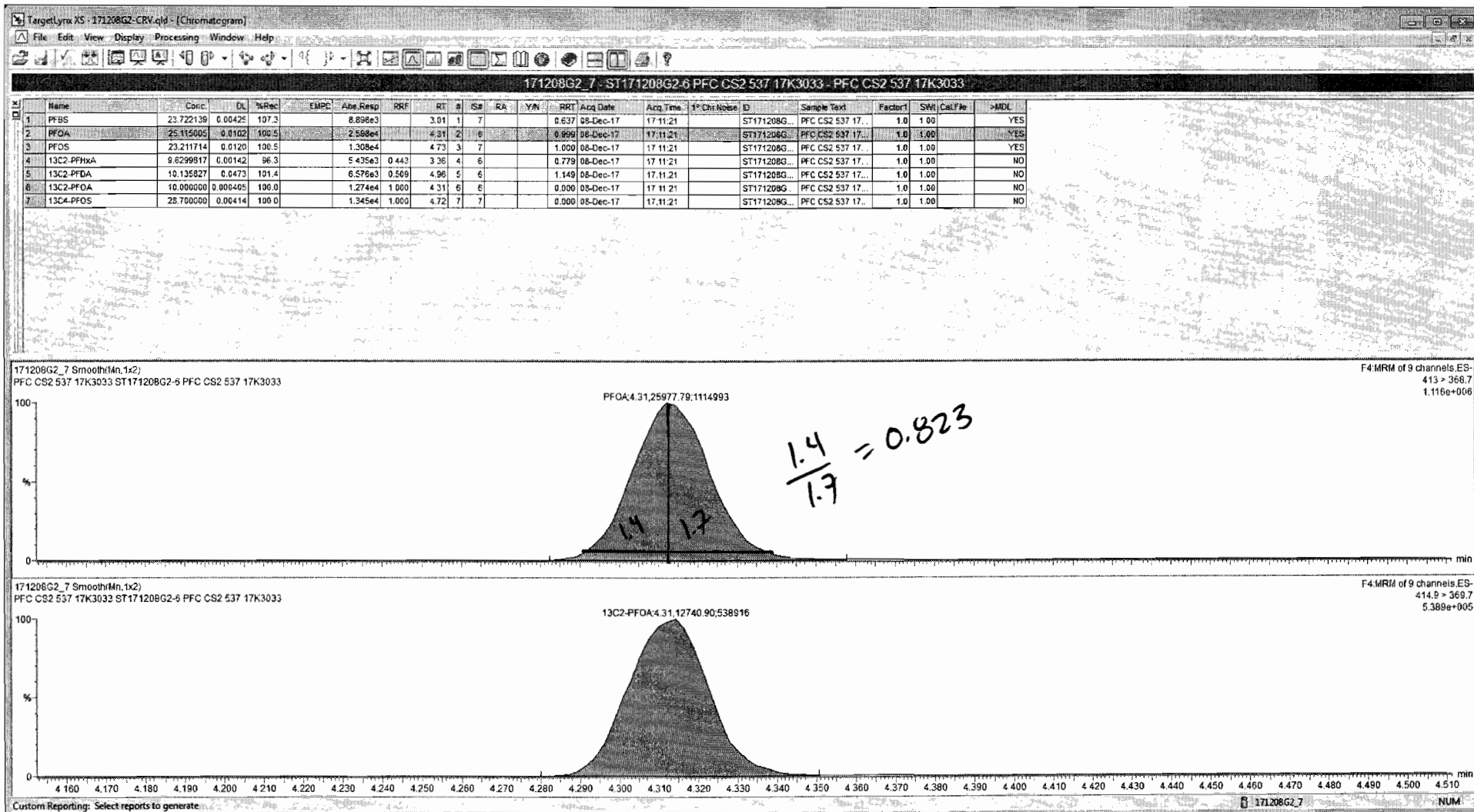
Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1 ST171208G2-1 PFC CS-3 537 17K3022	171208G2_Standard		10	4.33	11571.9	11571.9	bbX
2 ST171208G2-2 PFC CS-2 537 17K3023	171208G2_Standard		10	4.31	14038.17	14038.17	bbX
3 ST171208G2-3 PFC CS-1 537 17K3024	171208G2_Standard		10	4.31	12600.57	12600.57	bb
4 ST171208G2-4 PFC CS0 537 17K3025	171208G2_Standard		10	4.31	13262.25	13262.25	bb
5 ST171208G2-5 PFC CS1 537 17K3026	171208G2_Standard		10	4.31	12044.61	12044.61	bd
6 ST171208G2-6 PFC CS2 537 17K3033	171208G2_Standard		10	4.31	12740.9	12740.9	bd
7 ST171208G2-7 PFC CS3 537 17K3027	171208G2_Standard		10	4.31	11213.45	11213.45	bb
8 ST171208G2-8 PFC CS4 537 17K3028	171208G2_Standard		10	4.31	9546.963	9546.963	bbX
9 ST171208G2-9 PFC CS5 537 17K3029	171208G2_Standard		10	4.31	11090.06	11090.06	bdX
					average		RPD
					12372.36		16.74148984

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1 ST171208G2-1 PFC CS-3 537 17K3022	171208G2_Standard		28.7	4.74	11857.97	11857.97	bdX
2 ST171208G2-2 PFC CS-2 537 17K3023	171208G2_Standard		28.7	4.73	15349.47	15349.47	bbX
3 ST171208G2-3 PFC CS-1 537 17K3024	171208G2_Standard		28.7	4.72	14402.65	14402.65	bd
4 ST171208G2-4 PFC CS0 537 17K3025	171208G2_Standard		28.7	4.73	14516.46	14516.46	bd
5 ST171208G2-5 PFC CS1 537 17K3026	171208G2_Standard		28.7	4.72	11953.82	11953.82	MM
6 ST171208G2-6 PFC CS2 537 17K3033	171208G2_Standard		28.7	4.72	13445.89	13445.89	bb
7 ST171208G2-7 PFC CS3 537 17K3027	171208G2_Standard		28.7	4.72	12293.96	12293.96	bd
8 ST171208G2-8 PFC CS4 537 17K3028	171208G2_Standard		28.7	4.72	10786.03	10786.03	bbX
9 ST171208G2-9 PFC CS5 537 17K3029	171208G2_Standard		28.7	4.72	12003.27	12003.27	bbX
					average		RPD
					13322.56		19.36238753





Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

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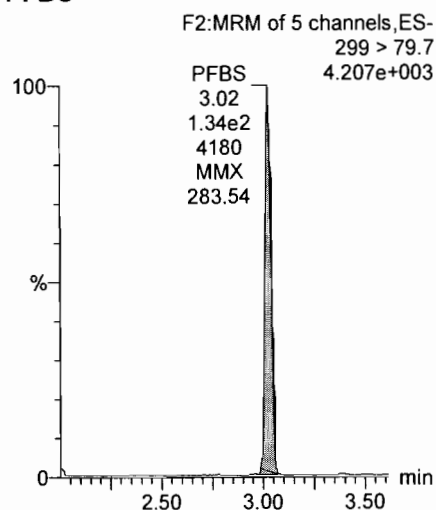
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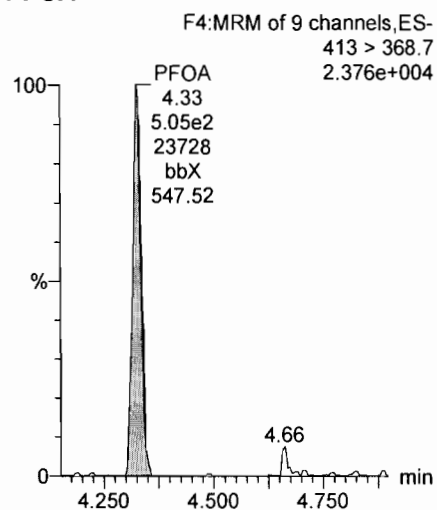
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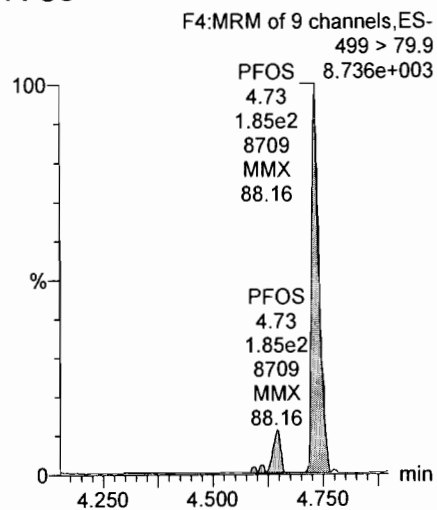
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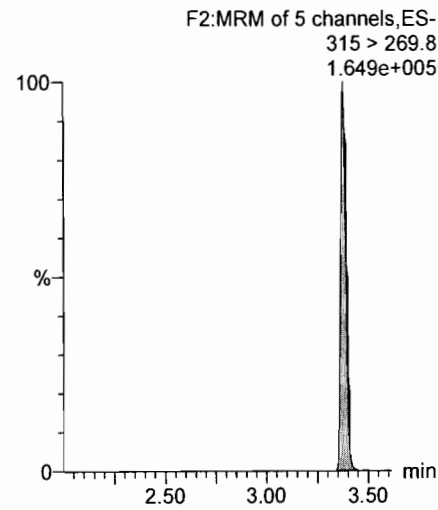
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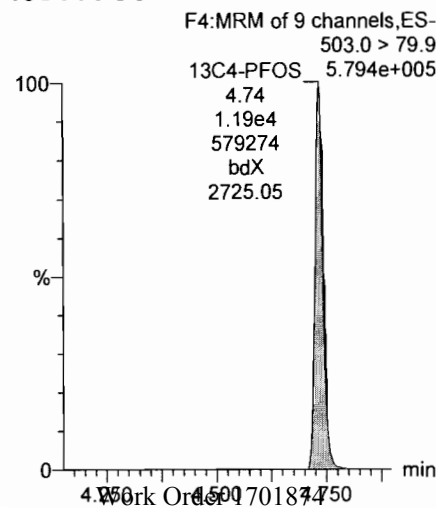
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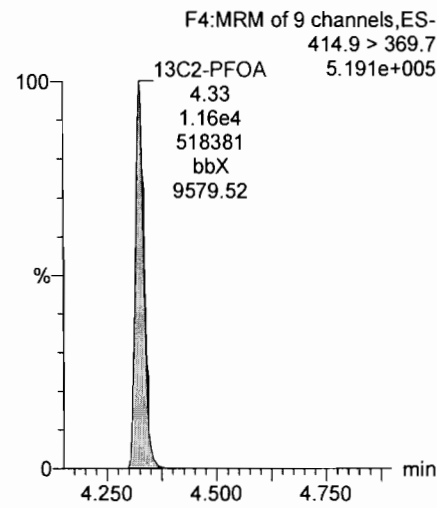
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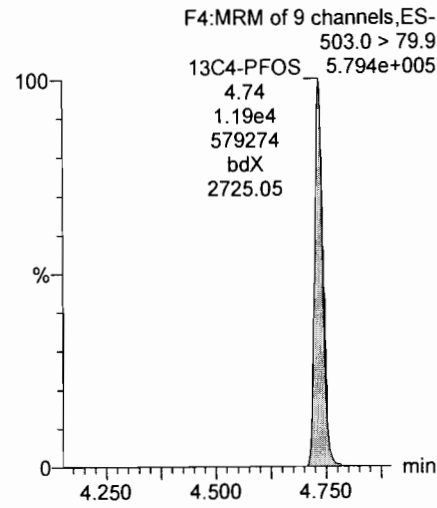
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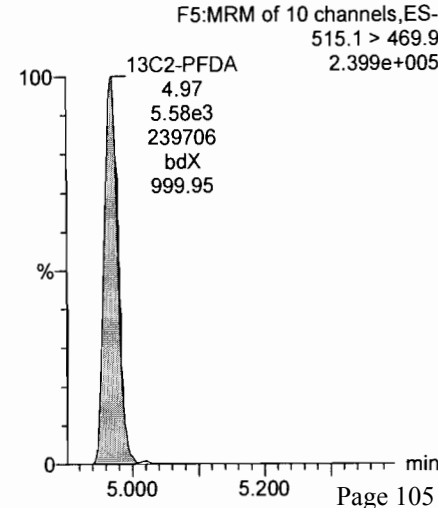
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13C4-PFOS



13C2-PFDA



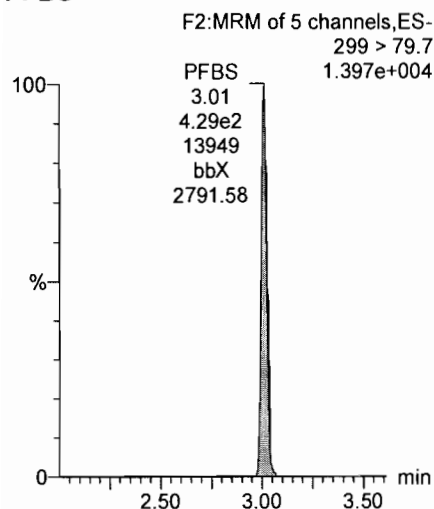
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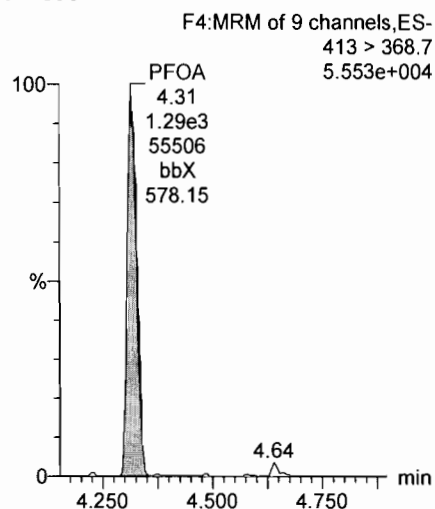
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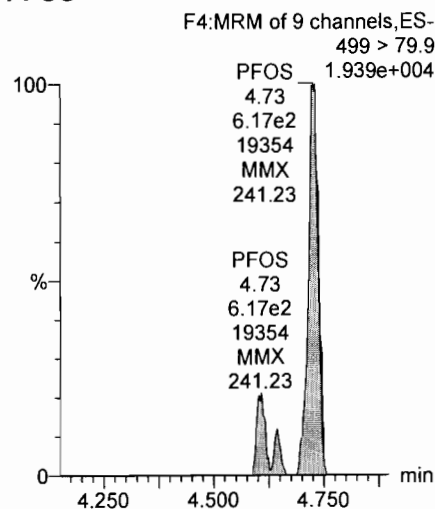
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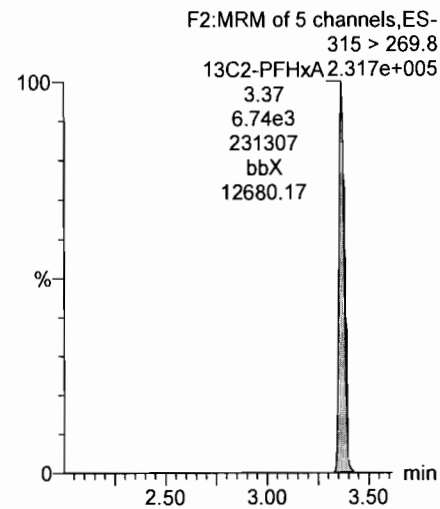
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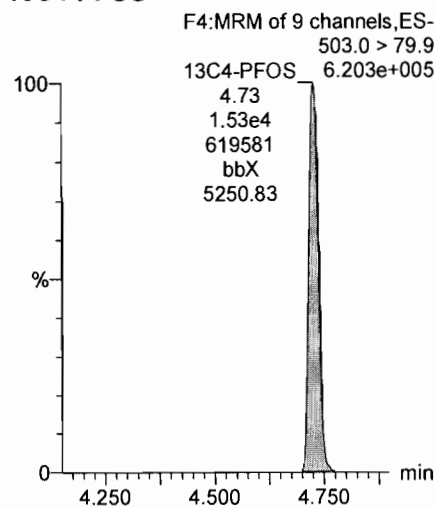
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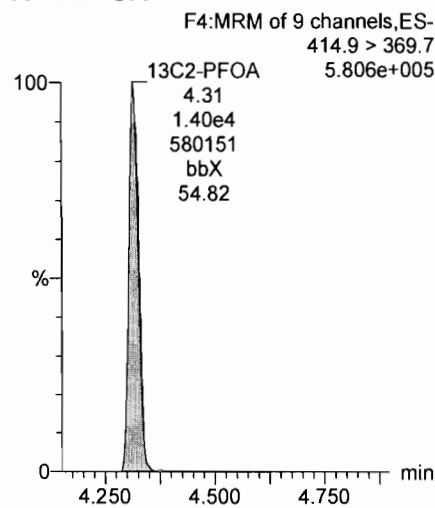
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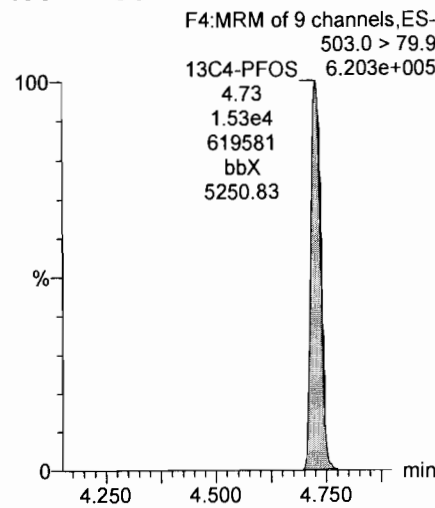
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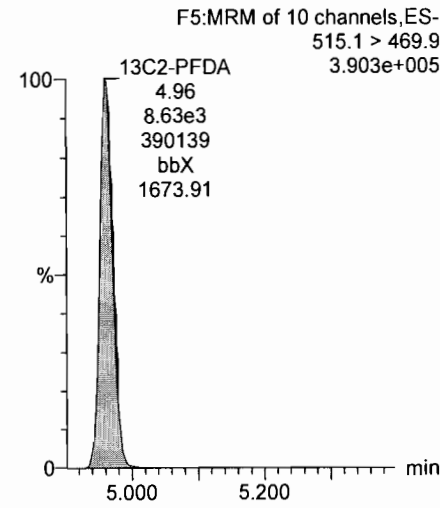
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13C4-PFOS



13C2-PFDA



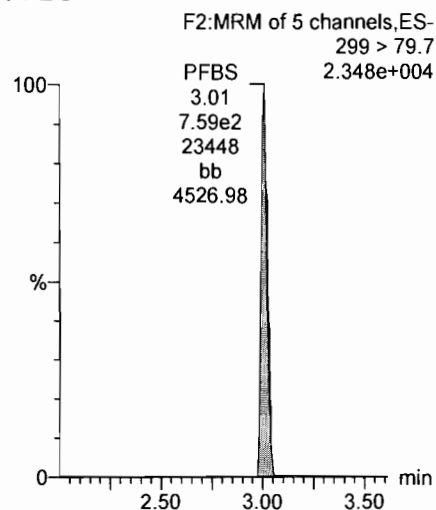
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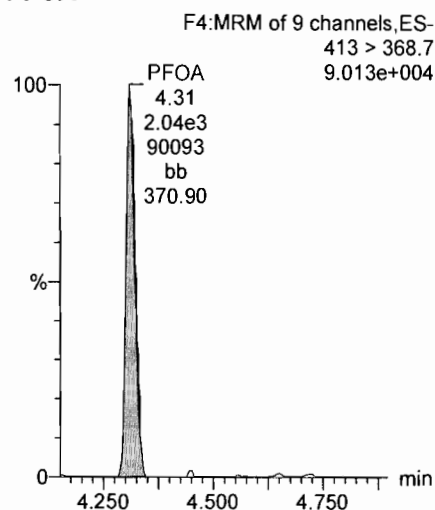
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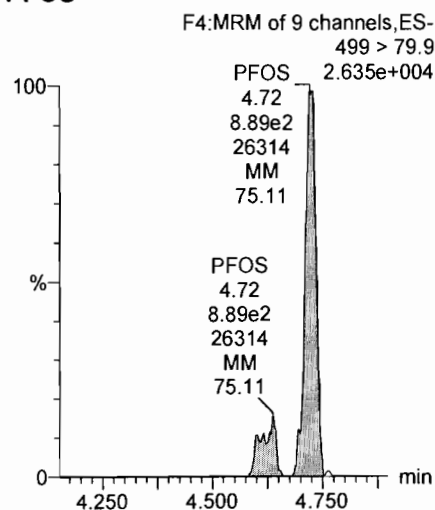
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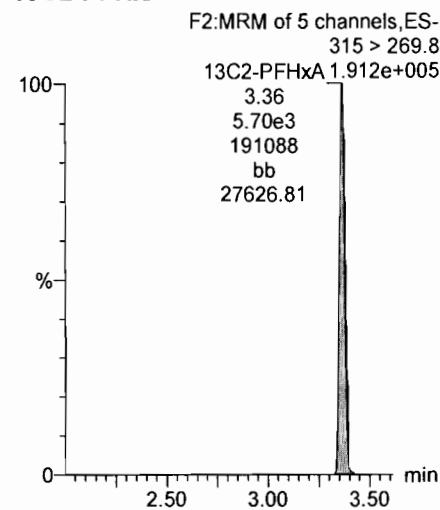
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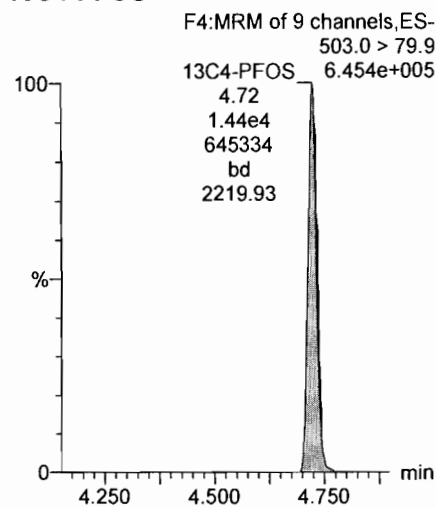
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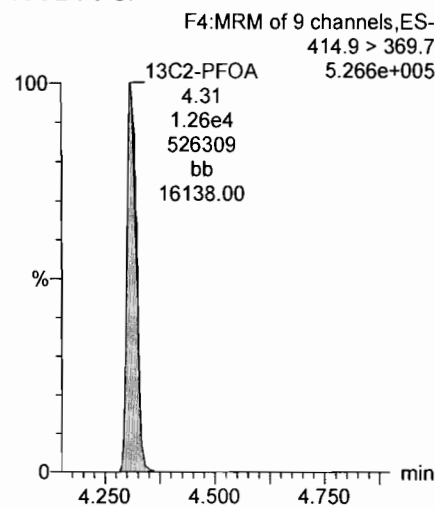
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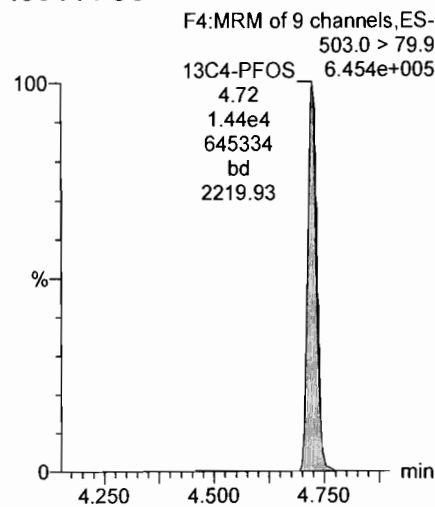
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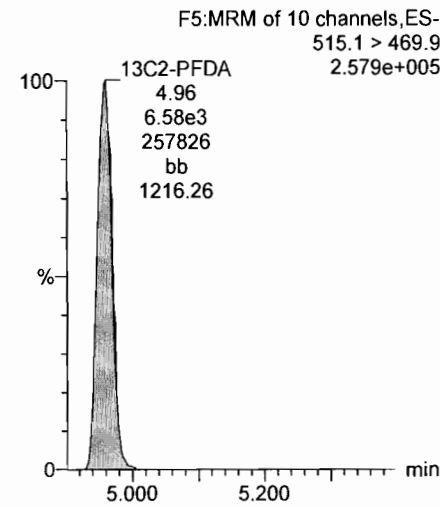
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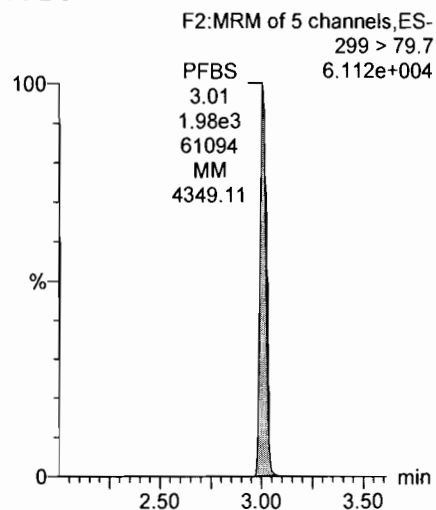
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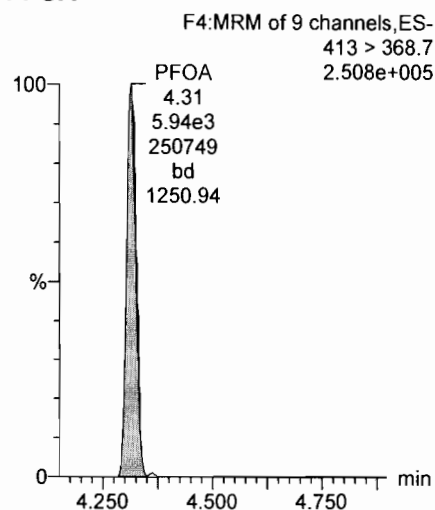
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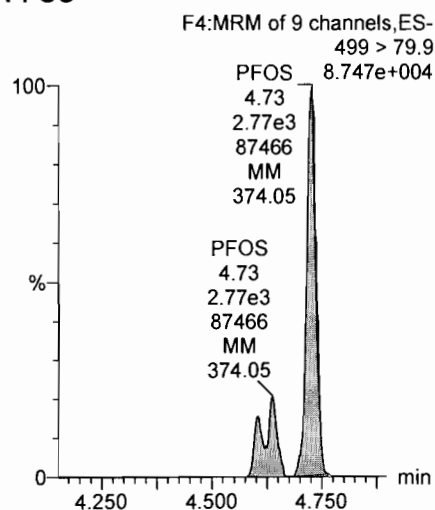
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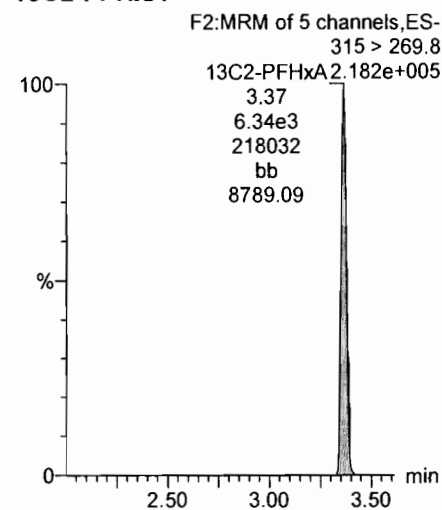
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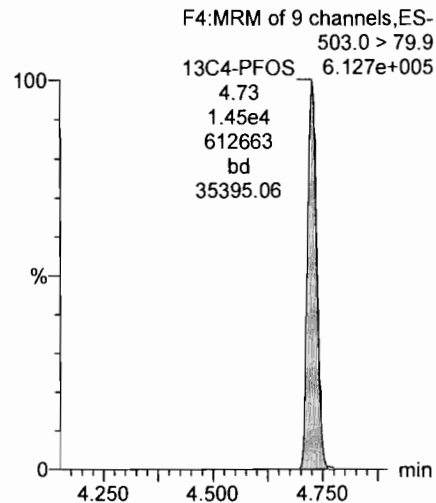
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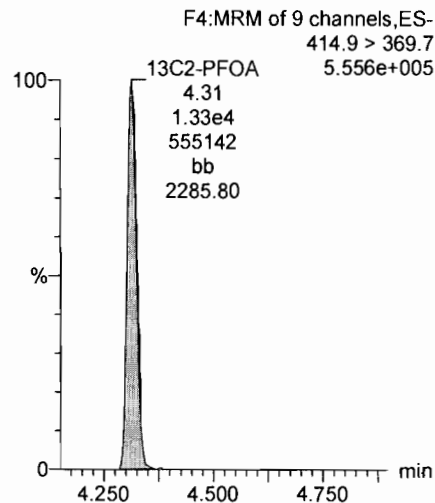
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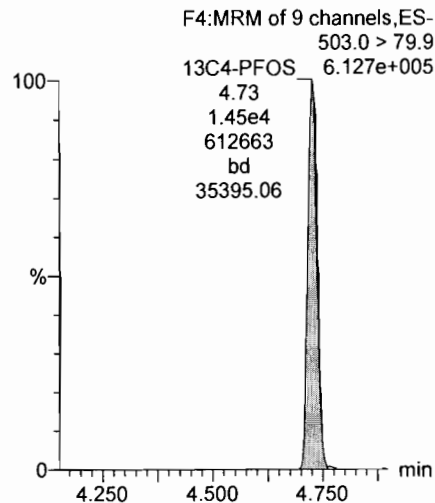
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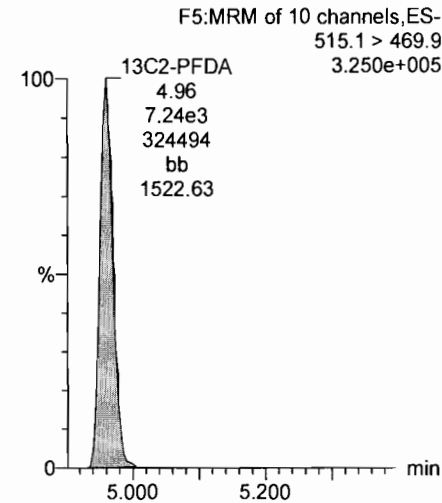
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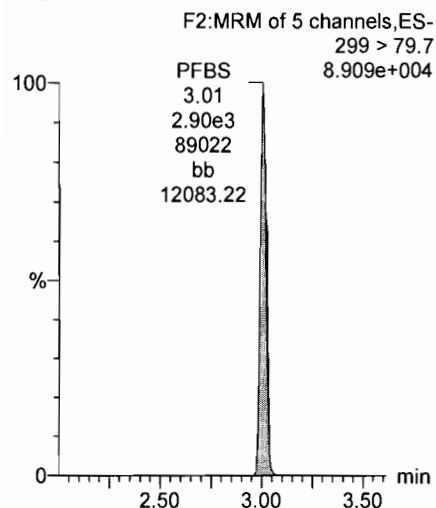
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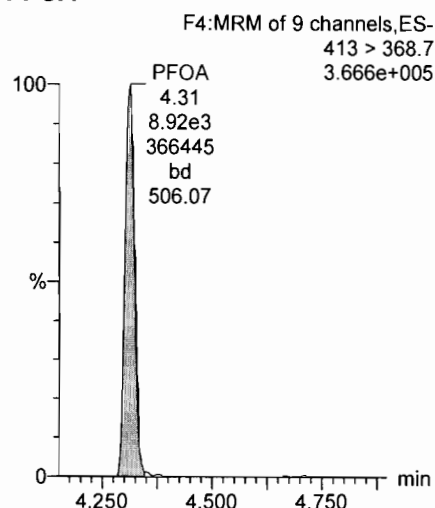
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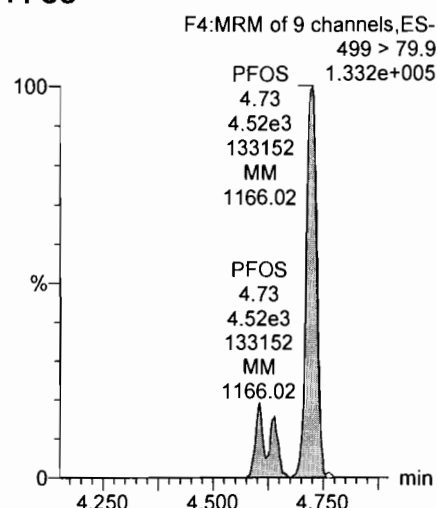
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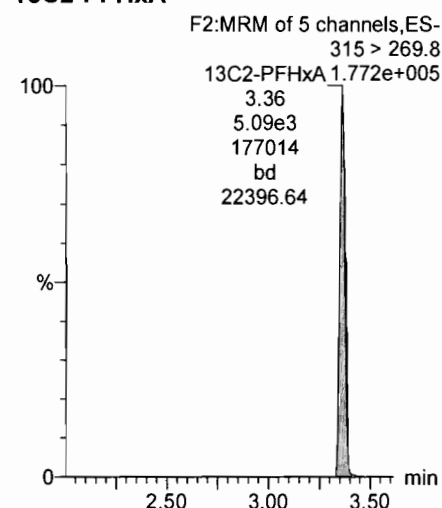
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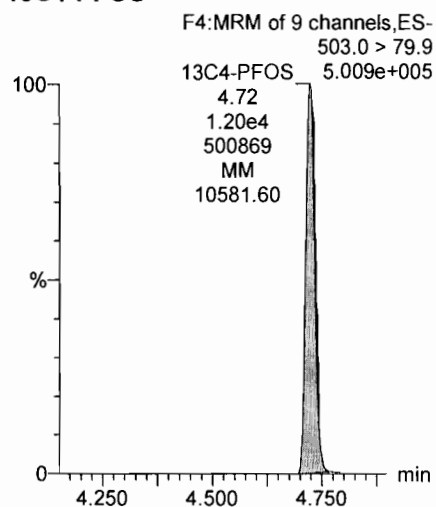
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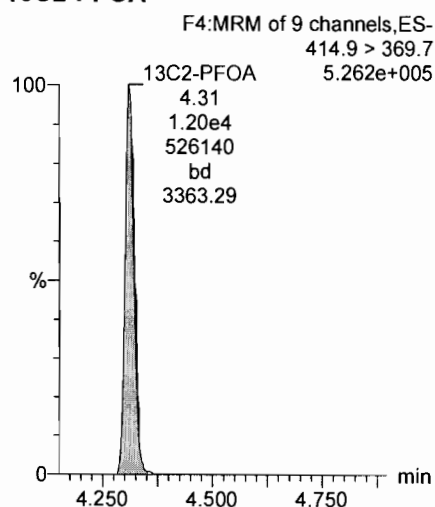
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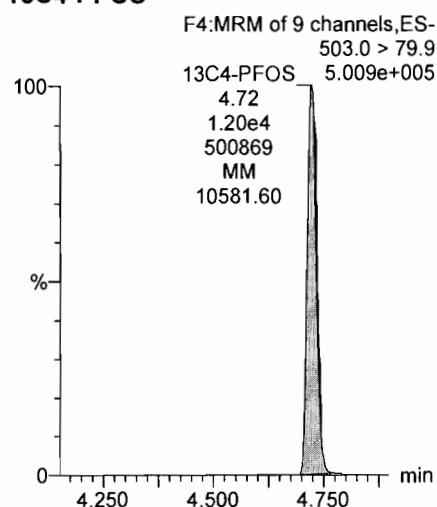
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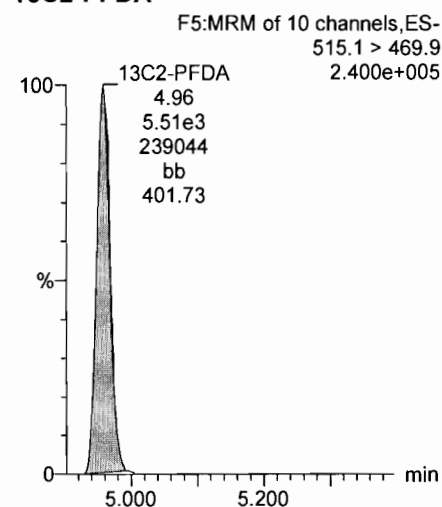
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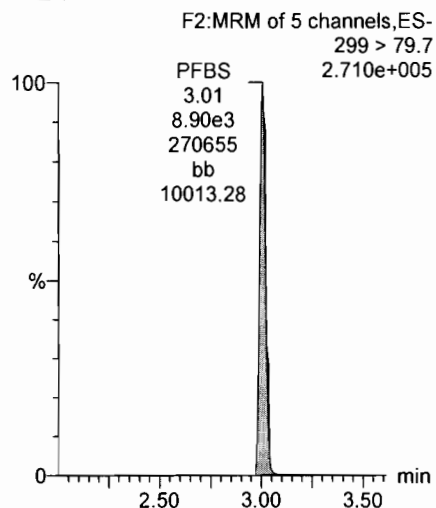
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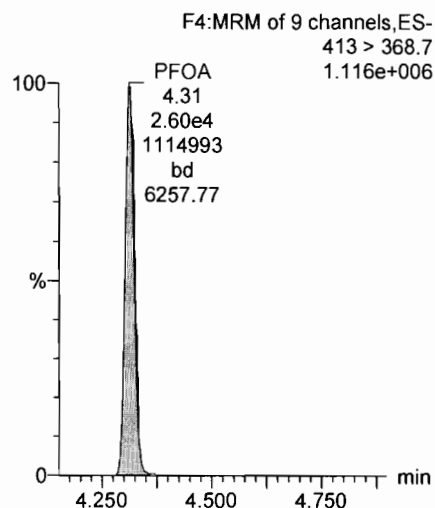
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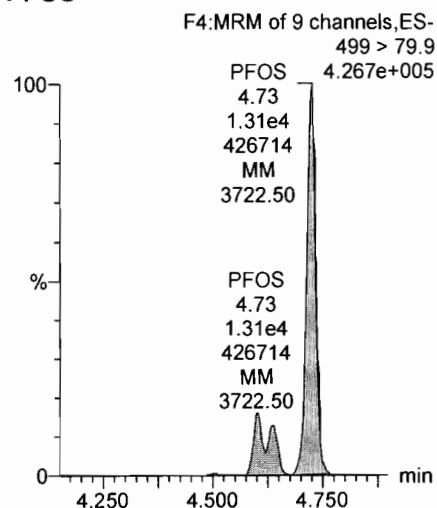
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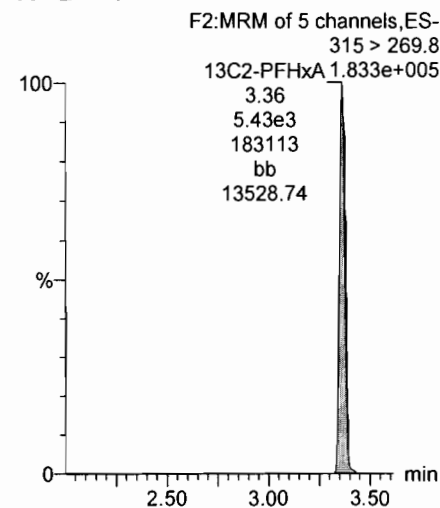
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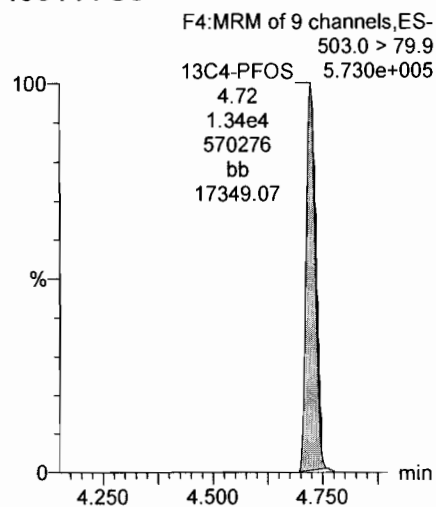
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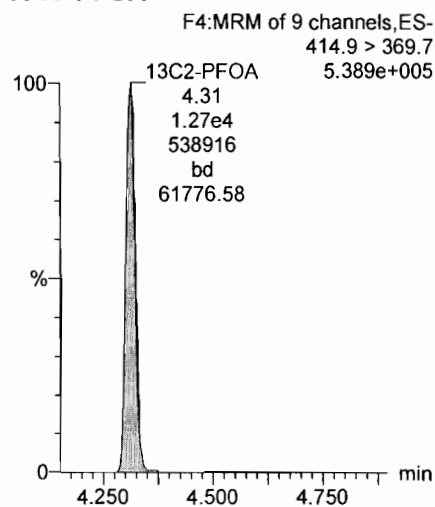
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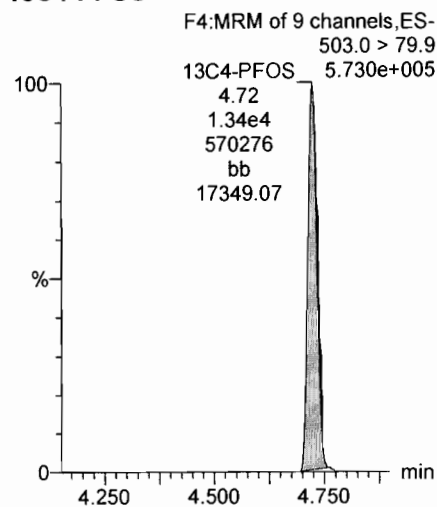
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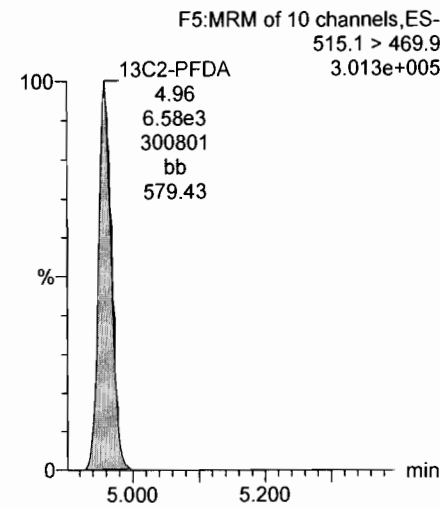
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13C4-PFOS



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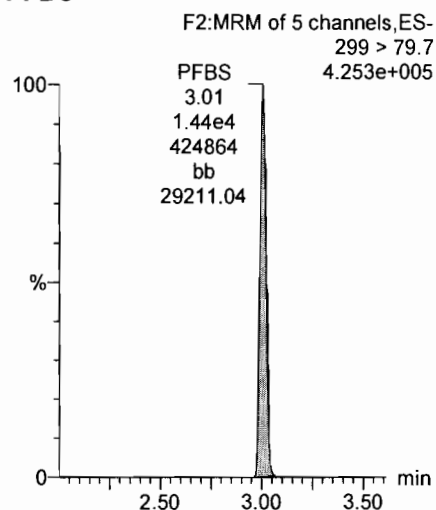
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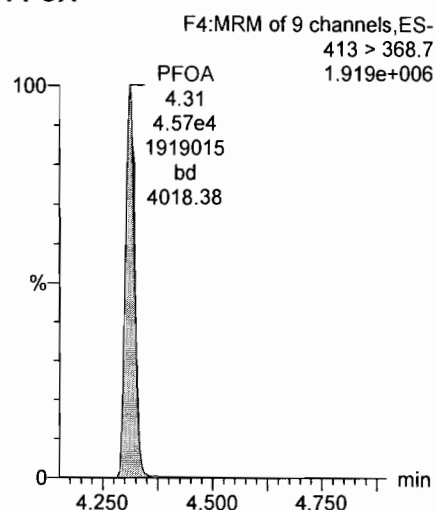
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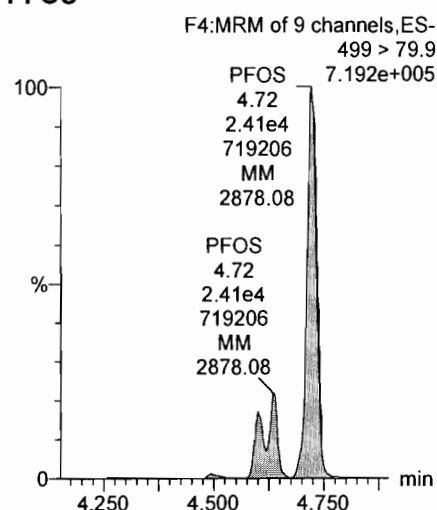
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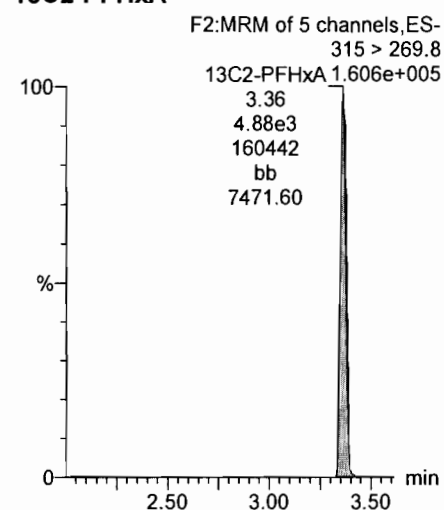
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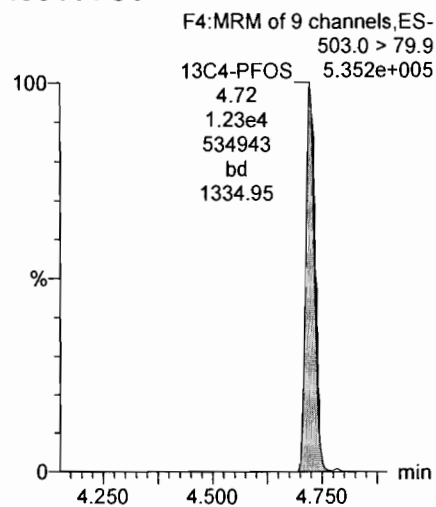
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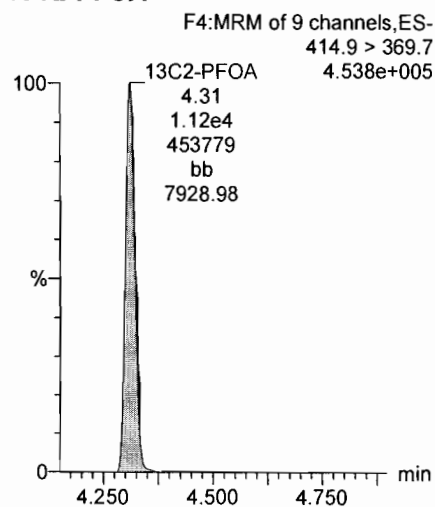
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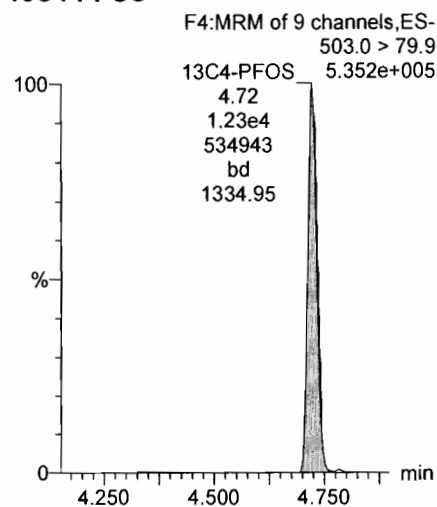
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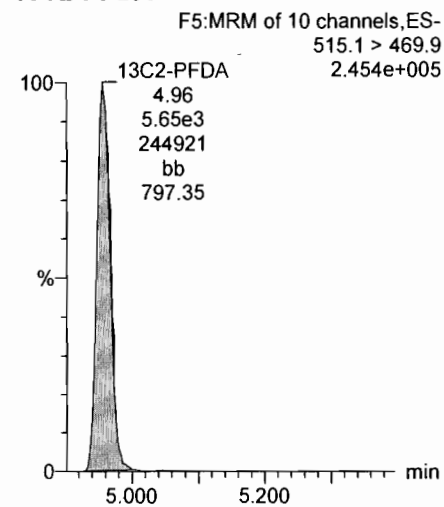
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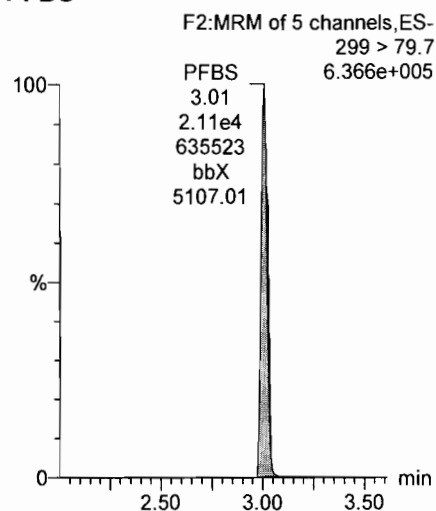
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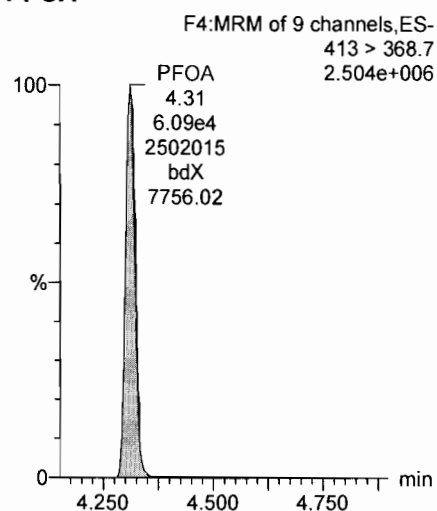
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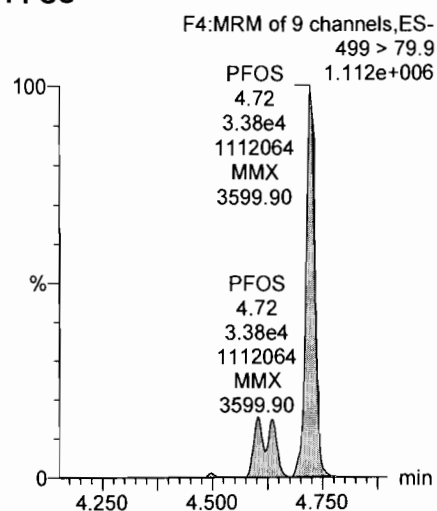
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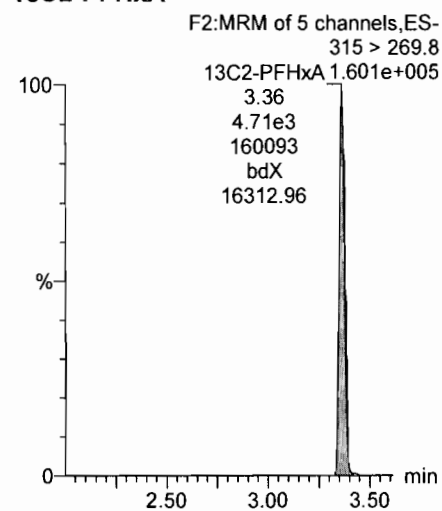
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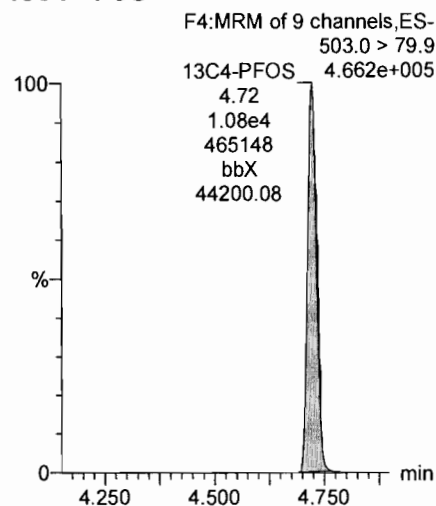
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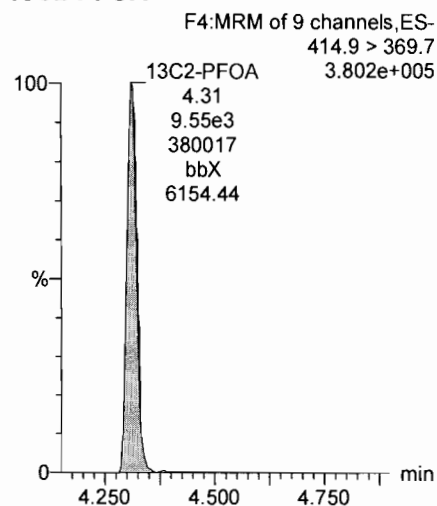
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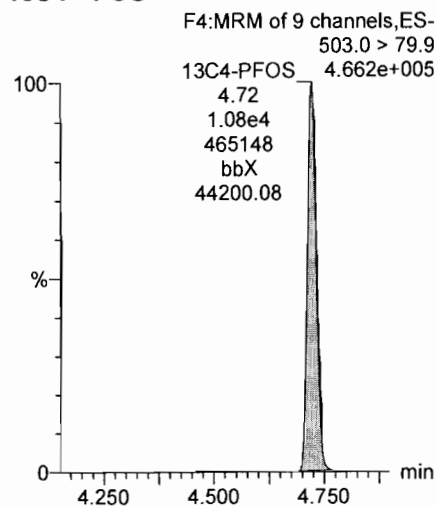
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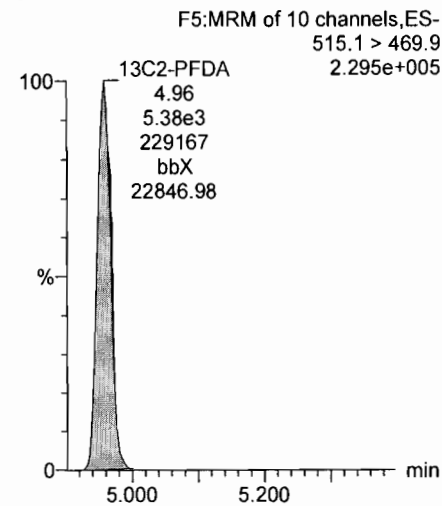
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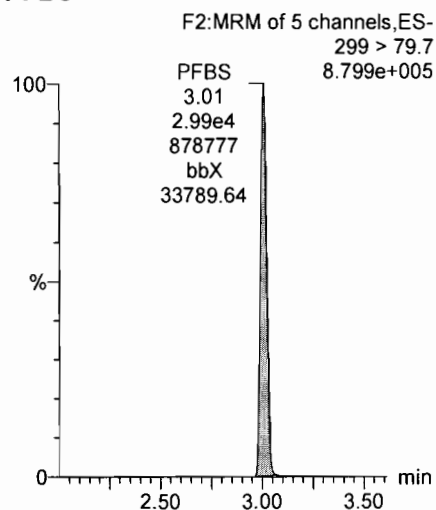
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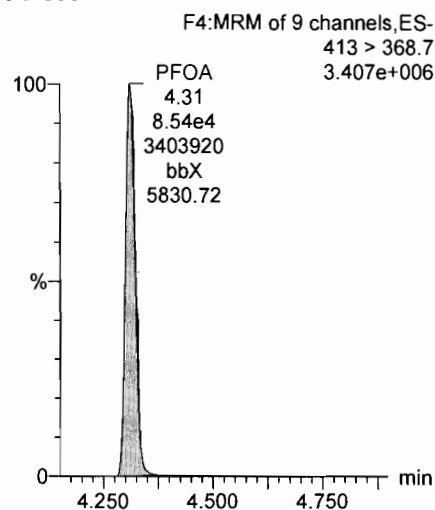
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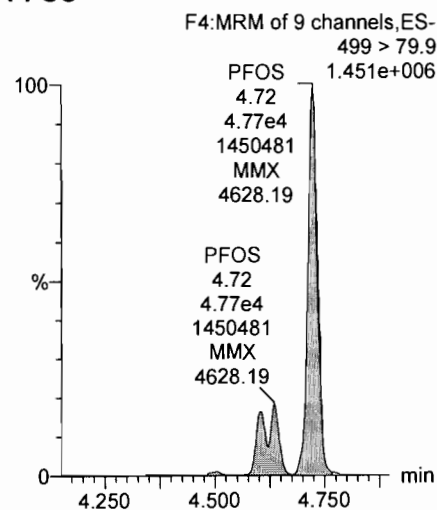
PFBS



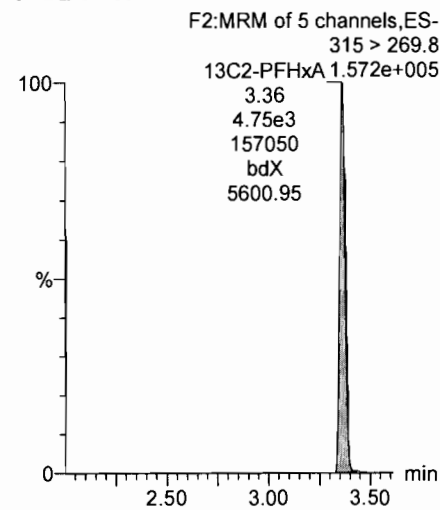
PFOA



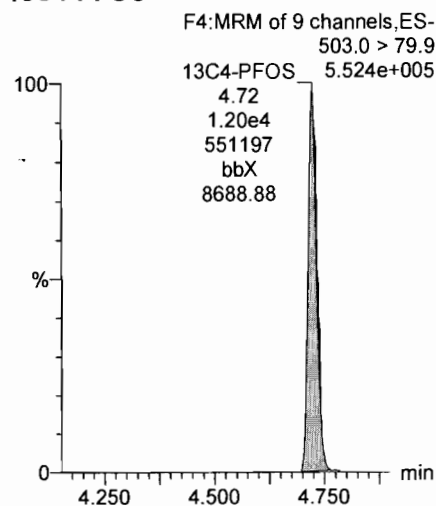
PFOS



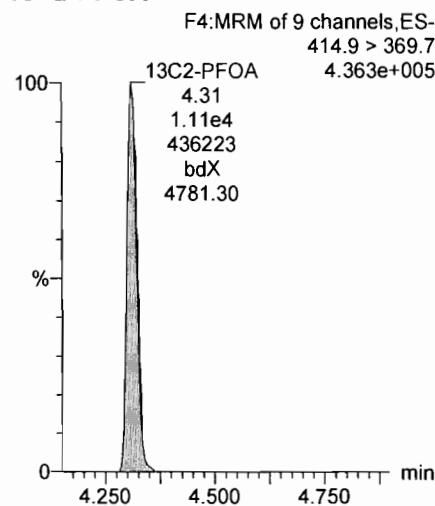
13C2-PFHxA



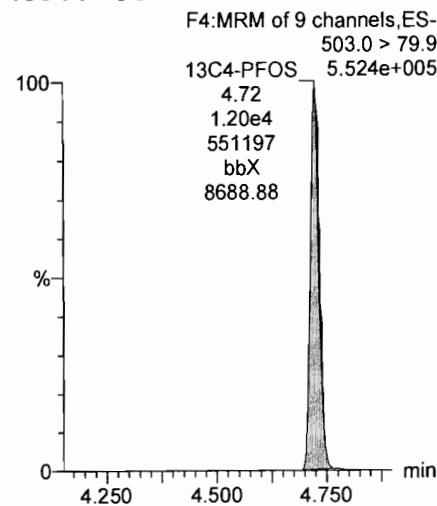
13C4-PFOS



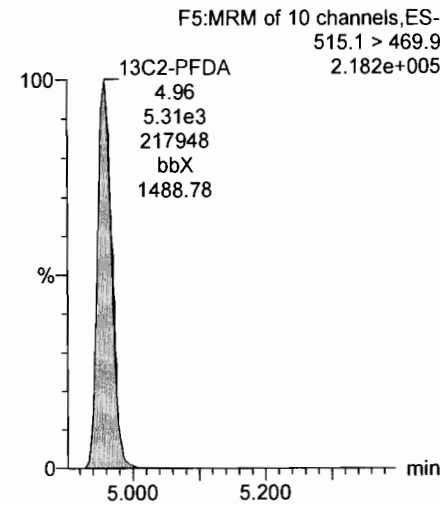
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-12.qld

Last Altered: Monday, December 11, 2017 10:41:12 Pacific Standard Time

Printed: Monday, December 11, 2017 10:41:34 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 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	3.46e3	1.15e4		1.0000	3.03	3.01	8.65	10.8	108.1
2	2 PFOA	413 > 368.7	8.56e3	1.03e4		1.0000	4.31	4.31	8.35	10.3	102.8
3	3 PFOS	499 > 79.9	5.12e3	1.15e4		1.0000	4.73	4.72	12.8	10.7	106.5
4	4 13C2-PFHxA	315 > 269.8	4.62e3	1.03e4	0.443	1.0000	3.37	3.36	4.50	10.2	101.6
5	5 13C2-PFDA	515.1 > 469.9	5.52e3	1.03e4	0.509	1.0000	4.94	4.96	5.38	10.6	105.6
6	6 13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	1.0000	4.41	4.31	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.15e4	1.15e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

70-130



dm 12/11/17

YKA. 12/11/2017

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-12.qld

Last Altered: Monday, December 11, 2017 10:41:12 Pacific Standard Time

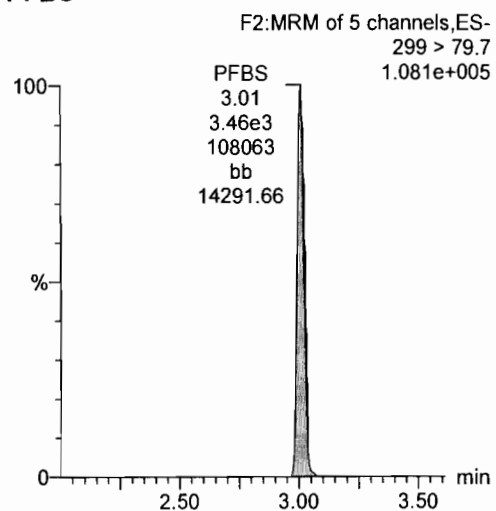
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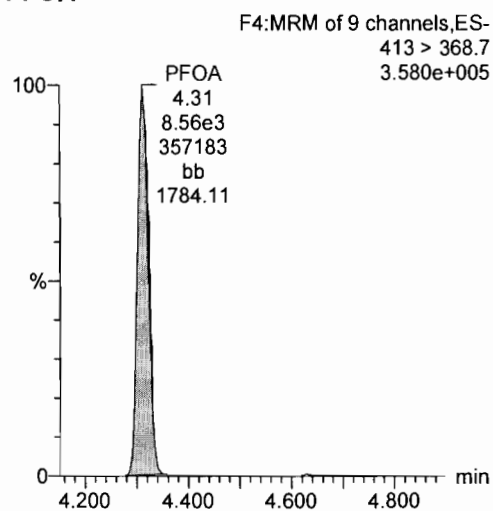
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Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

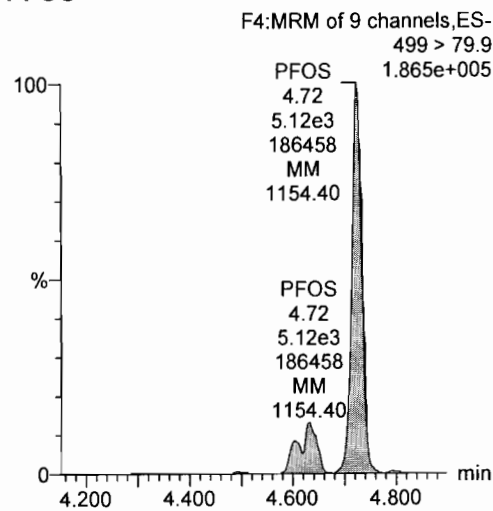
PFBS



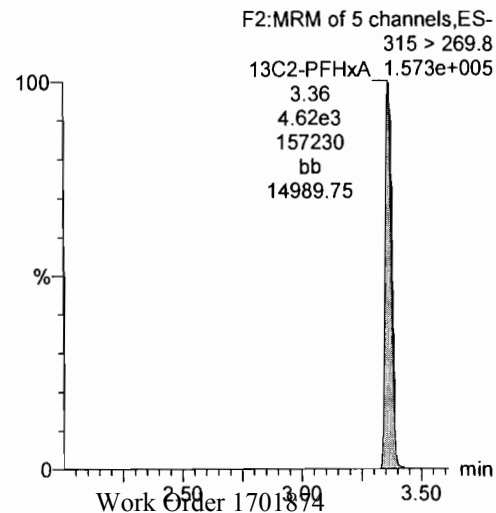
PFOA



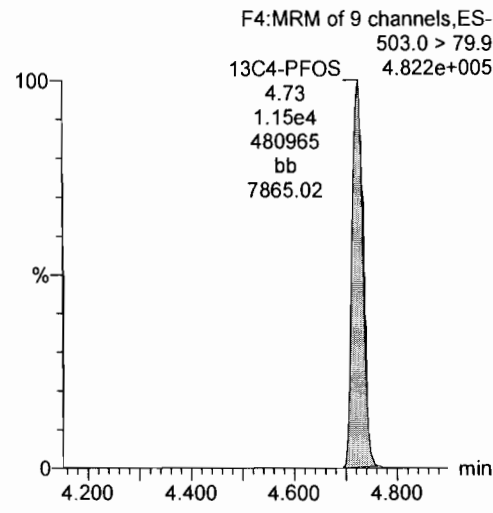
PFOS



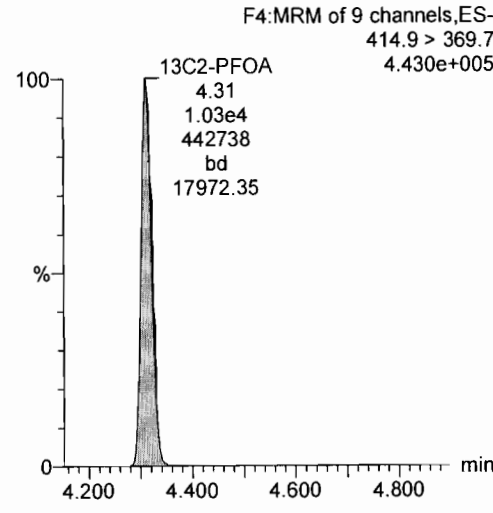
13C2-PFHxA



13C4-PFOS



13C2-PFOA



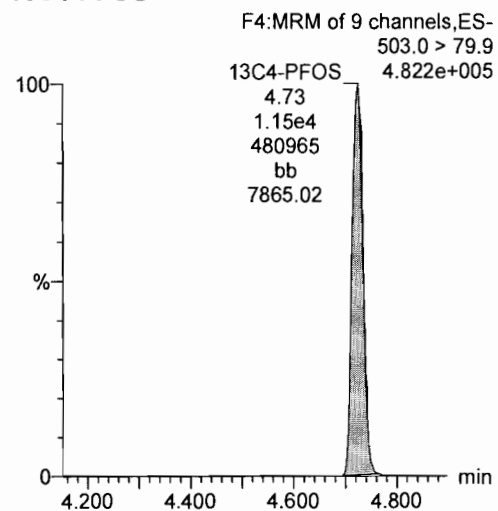
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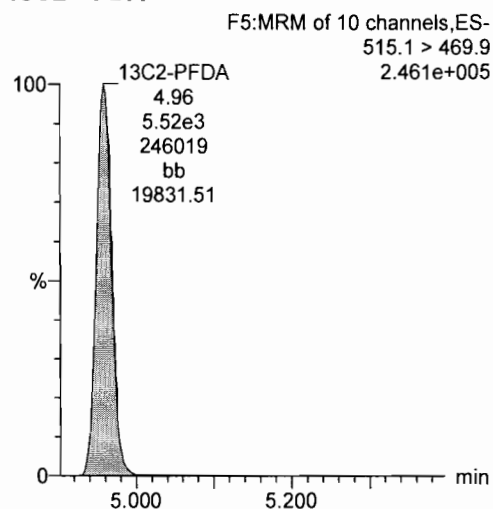
Printed: Monday, December 11, 2017 10:41:34 Pacific Standard Time

Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

13C4-PFOS



13C2-PFDA



Result

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_ Type	Lab_QC_ Type	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:22	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:22	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:22	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:22	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:23	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:23	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB123-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 11:23	12/07/2017
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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:03	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:03	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:03	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:04	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:04	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB124-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:04	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:23	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:23	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:23	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:24	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:24	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB125-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/04/2017 12:24	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB125-1217	NONS	SVOA	537	ORG	VISTA										

Result

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Leachate _Date	Leachate _Time	Extraction_D _ate	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_Uni _ts	Lab_Qual _ifier
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:48:00	1701874-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.93	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:48:00	1701874-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.93	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:48:00	1701874-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.93	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:48:00	1701874-01	1	-999			13C2-PFHxA	13C2-PFHxA		102	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:00:00	1701874-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.73	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:00:00	1701874-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.73	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:00:00	1701874-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.73	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:00:00	1701874-02	1	-999			13C2-PFHxA	13C2-PFHxA		97.5	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:13:00	1701874-03	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.01	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:13:00	1701874-03	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.01	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:13:00	1701874-03	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.01	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:13:00	1701874-03	1	-999			13C2-PFHxA	13C2-PFHxA		102	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:25:00	1701874-04	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.79	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:25:00	1701874-04	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.79	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:25:00	1701874-04	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.79	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:25:00	1701874-04	1	-999			13C2-PFHxA	13C2-PFHxA		92.2	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:37:00	1701874-05	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.91	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:37:00	1701874-05	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.91	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:37:00	1701874-05	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.91	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	11:37:00	1701874-05	1	-999			13C2-PFHxA					

Results

Contract_ID	DO_CTO Number	Phase	Installation_ID	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_T ype	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy Upper	QC_ Accuracy Lower	Control_L imit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.437	4.93	9.87	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.93	9.87	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.93	9.87	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.419	4.73	9.45	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.73	9.45	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.983	4.73	9.45	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.444	5.01	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	5.01	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	5.01	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.424	4.79	9.58	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.79	9.58	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.996	4.79	9.58	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.435	4.91	9.81	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.91	9.81	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.91	9.81	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.443	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.441	4.97	9.94	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.97	9.94	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.97	9.94	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.440	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.451	5.09	10.2	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.10	5.09	10.2	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	5.09	10.2	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.431	4.86	9.72	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.05	4.86	9.72	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.01	4.86	9.72	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.429	4.84	9.68	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	4.84	9.68	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.01	4.84	9.68	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.424	4.79	9.57	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.79	9.57	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.996	4.79	9.57	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.436	4.92	9.83	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.92	9.83	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.92	9.83	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.439	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.07	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.03	4.96	9.92	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.442	4.99	9.98	1701874	S7L0041

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_ Type	Lab_QC_ Type	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:07	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:07	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:07	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:08	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:08	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:08	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB130-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 09:08	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:15	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:15	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:15	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:15	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:16	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:16	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:16	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB132-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/05/2017 10:16	12/07/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/11/2017 15:00	12/11/2017

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Leachate Date	Leachate _Time	Extraction_D ate	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_Uni ts	Lab_Qual ifier
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:42:00	1701874-15	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.99	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:42:00	1701874-15	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.99	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:42:00	1701874-15	1	-999			13C2-PFHxA	13C2-PFHxA		109	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:54:00	1701874-16	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.90	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:54:00	1701874-16	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.90	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:54:00	1701874-16	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.90	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	13:54:00	1701874-16	1	-999			13C2-PFHxA	13C2-PFHxA		100	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:07:00	1701874-17	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.89	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:07:00	1701874-17	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.89	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:07:00	1701874-17	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.89	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:07:00	1701874-17	1	-999			13C2-PFHxA	13C2-PFHxA		101	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:19:00	1701874-18	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.23	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:19:00	1701874-18	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.23	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:19:00	1701874-18	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.23	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	14:19:00	1701874-18	1	-999			13C2-PFHxA	13C2-PFHxA		99.0	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:35:00	B7L0065-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:35:00	B7L0065-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.00	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:35:00	B7L0065-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00	NG_L	U
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:35:00	B7L0065-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA		104	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:10:00	B7L0065-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		36.5	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:10:00	B7L0065-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		48.3	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:10:00	B7L0065-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		41.1	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:10:00	B7L0065-BS1	1	-999			13C2-PFHxA	13C2-PFHxA		114	PCT_REC	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:23:00	B7L0065-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		39.8	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:23:00	B7L0065-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		46.4	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:23:00	B7L0065-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		40.8	NG_L	
N6247016D9000	0008		CHERRY_POINT_MCAS			20171211	15:00:00	20171213	10:23:00	B7L0065-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA		98.0	PCT_REC	

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ _T _ype	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy _Upper	QC_ Accuracy _Lower	Control_L imit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	4.99	9.98	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	4.99	9.98	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.434	4.90	9.79	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.90	9.79	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.90	9.79	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.433	4.89	9.77	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.06	4.89	9.77	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.02	4.89	9.77	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.464	5.23	10.5	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.13	5.23	10.5	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.09	5.23	10.5	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR			SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	0.443	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.08	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG									5.1	1.04	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		SLSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1				1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		LSA	130	70					5.1	0.443	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701874	S7L0041
N6247016D9000	0008		CHERRY_POINT_MCAS		PR	SUR		LSA	130	70					5.1				1701874	S7L0041

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

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701874
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: January 13, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW123-1217	1701874-01	Water
2	CH-AT-1FB123-1217	1701874-02	Water
3	CH-AT-1RW124-1217	1701874-03	Water
4	CH-AT-1FB124-1217	1701874-04	Water
5	CH-AT-1RW125-1217	1701874-05	Water
6	CH-AT-1FB125-1217	1701874-06	Water
7	CH-AT-1RW126-1217	1701874-07	Water
8	CH-AT-1FB126-1217	1701874-08	Water
9	CH-AT-1RW127-1217	1701874-09	Water
10	CH-AT-1FB127-1217	1701874-10	Water
11	CH-AT-1RW128-1217	1701874-11	Water
12	CH-AT-1FB128-1217	1701874-12	Water
13	CH-AT-1RW129-1217	1701874-13	Water
14	CH-AT-1FB129-1217	1701874-14	Water
15	CH-AT-1RW130-1217	1701874-15	Water
16	CH-AT-1FB130-1217	1701874-16	Water
17	CH-AT-1RW132-1217	1701874-17	Water
18	CH-AT-1FB132-1217	1701874-18	Water

A full data validation was performed on the analytical data for nine water samples and nine aqueous field blank samples collected on December 4-5, 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-1FB123-1217	None - ND	-	-	-
CH-AT-1FB124-1217	None - ND	-	-	-
CH-AT-1FB125-1217	None - ND	-	-	-
CH-AT-1FB126-1217	None - ND	-	-	-
CH-AT-1FB127-1217	None - ND	-	-	-
CH-AT-1FB128-1217	None - ND	-	-	-
CH-AT-1FB129-1217	None - ND	-	-	-
CH-AT-1FB130-1217	None - ND	-	-	-
CH-AT-1FB132-1217	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:

Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 1/15/18

Data Qualifier	Definition
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-1RW123-1217						EPA Method 537			
Client Data			Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701874-01	Column:	BEH C18		
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 11:22	Date Received:	07-Dec-17 09:23				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48 1
PFOA	ND	1.07	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48 1
PFOS	ND	1.03	4.93	9.87		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48 1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	102	70 - 130		B7L0065	11-Dec-17	0.253 L	13-Dec-17 10:48 1	
DL - Detection Limit LOD - Limit of Detection LCL-UCL- Lower control limit - upper control limit									
LOQ - Limit of quantitation 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									

2211131.8

Sample ID: CH-AT-1FB123-1217										EPA Method 537			
Client Data				Laboratory Data									
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701874-02	Batch	Extracted	Samp Size	Analyzed	Dilution	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 11:23	Date Received:	07-Dec-17 09:23								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBS	ND	0.419	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1			
PFOA	ND	1.02	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1			
PFOS	ND	0.983	4.73	9.45		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	1			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C2-PFHxA	SURR	97.5	70 - 130		B7L0065	11-Dec-17	0.265 L	13-Dec-17 11:00	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

~11.31.8

Sample ID: CH-AT-1RW124-1217

EPA Method 537

Client Data				Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701874-03	Column:	BEH C18			
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 12:03	Date Received:	07-Dec-17 09:23					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOA	ND	1.08	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
PFOS	ND	1.04	5.01	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	1
Labeled Standards	Type	% Recovery	Limits							
13C2-PFHxA	SURR	102	70 - 130		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
						B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:13	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

11.3/1.8

Sample ID: CH-AT-1FB124-1217					EPA Method 537				
Client Data			Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701874-04	Column:	BEH C18		
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 12:04	Date Received:	07-Dec-17 09:23				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25
PFOA	ND	1.03	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25
PFOS	ND	0.996	4.79	9.58		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	92.2	70 - 130		B7L0065	11-Dec-17	0.261 L	13-Dec-17 11:25	1
DL - Detection Limit			When reported, PFHxS, PFOA and PFOS include both linear and branched isomers						
LOD - Limit of Detection			Only the linear isomer is reported for all other analytes						
LOQ - Limit of quantitation									

11.31.18

Sample ID: CH-AT-1RW125-1217										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1701874-05		Column:		BEH C18	
Project:		CTO-08/MCOLF ATLANTIC PFAS INV.		Date Collected:		04-Dec-17 12:23		Date Received:		07-Dec-17 09:23					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.435	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1					
PFOA	ND	1.06	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1					
PFOS	ND	1.02	4.91	9.81		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
13C2-PFHxA	SURR	98.9	70 - 130		B7L0065	11-Dec-17	0.255 L	13-Dec-17 11:37	1						
DL - Detection Limit										When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.					
LOD - Limit of Detection										Only the linear isomer is reported for all other analytes					
LOQ - Limit of quantitation															
LCL-UCL- Lower control limit - upper control limit															
Results reported to the DL															

new 1.31.8

Sample ID: CH-AT-1FB125-1217										EPA Method 537			
Client Data				Laboratory Data									
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701874-06	Batch	Extracted	Samp Size	Analyzed	Dilution	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Collected:	04-Dec-17 12:24	Date Received:	07-Dec-17 09:23								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBS	ND	0.443	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1			
PFOA	ND	1.08	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1			
PFOS	ND	1.04	5.00	10.0		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	1			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C2-PFHxA	SURR	99.0	70 - 130		B7L0065	11-Dec-17	0.250 L	13-Dec-17 11:50	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

sw11.31.8

Sample ID: CH-AT-1RW126-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-07	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Collected:	04-Dec-17 13:13		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.441	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02
PFOA	ND	1.07	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02
PFOS	ND	1.03	4.97	9.94		B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	99.1	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 12:02
DL - Detection Limit LOD - Limit of Detection LOQ - Limit of quantitation LCL-UCCL- 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									

new 11.31.18

Sample ID: CH-AT-1FB126-1217				EPA Method 537						
Client Data			Laboratory Data							
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1701874-08		Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.		Date Collected:	04-Dec-17 13:14		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	90.0	70 - 130		B7L0065	11-Dec-17	0.252 L	13-Dec-17 12:15	1	
DL - Detection Limit LOD - Limit of Detection 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										

11.31.8

Sample ID: CH-AT-1RW127-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-09	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Collected:	04-Dec-17 14:23		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.451	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27
PFOA	ND	1.10	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27
PFOS	ND	1.06	5.09	10.2		B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7L0065	11-Dec-17	0.246 L	13-Dec-17 12:27
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									

rw1,31.8

Sample ID: CH-AT-1FB127-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-10	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 14:24		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.431	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40
PFOA	ND	1.05	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40
PFOS	ND	1.01	4.86	9.72		B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	97.7	70 - 130			B7L0065	11-Dec-17	0.257 L	13-Dec-17 12:40
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									

new 1.3/1.8

Sample ID: CH-AT-1RW128-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-11	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 14:45		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.429	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52
PFOA	ND	1.04	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52
PFOS	ND	1.01	4.84	9.68		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	99.3	70 - 130		B7L0065	11-Dec-17	0.258 L	13-Dec-17 12:52	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-1FB128-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-12	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	04-Dec-17 14:46		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.424	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05
PFOA	ND	1.03	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05
PFOS	ND	0.996	4.79	9.57		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B7L0065	11-Dec-17	0.261 L	13-Dec-17 13:05	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									

new 11.3.1.8

Sample ID: CH-AT-1RW129-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-13	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Collected:	04-Dec-17 15:23		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.436	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17 1
PFOA	ND	1.06	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17 1
PFOS	ND	1.02	4.92	9.83		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17 1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	104	70 - 130		B7L0065	11-Dec-17	0.254 L	13-Dec-17 13:17 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									

1701874

Sample ID: CH-AT-1FB129-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-14	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Collected:	04-Dec-17 15:24		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29
PFOA	ND	1.07	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29
PFOS	ND	1.03	4.96	9.92		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	101	70 - 130		B7L0065	11-Dec-17	0.252 L	13-Dec-17 13:29	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, 13, 18

Sample ID: CH-AT-1RW130-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-15	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	05-Dec-17 09:07		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.442	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42
PFOA	ND	1.08	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42
PFOS	ND	1.04	4.99	9.98		B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7L0065	11-Dec-17	0.251 L	13-Dec-17 13:42
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-1FB130-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-16	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	05-Dec-17 09:08		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.434	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54
PFOA	ND	1.06	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54
PFOS	ND	1.02	4.90	9.79		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	100	70 - 130		B7L0065	11-Dec-17	0.255 L	13-Dec-17 13:54	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									

11/13/18

Sample ID: CH-AT-1RW132-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-17	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	05-Dec-17 10:15		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.433	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07
PFOA	ND	1.06	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07
PFOS	ND	1.02	4.89	9.77		B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7L0065	11-Dec-17	0.256 L	13-Dec-17 14:07
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									

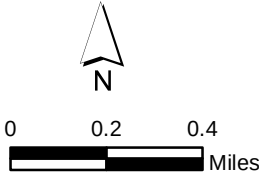
rw 1,3/18

Sample ID: CH-AT-1FB132-1217									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701874-18	Column:	BEH C18	
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	05-Dec-17 10:16		Date Received:	07-Dec-17 09:23			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.464	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19
PFOA	ND	1.13	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19
PFOS	ND	1.09	5.23	10.5		B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	99.0	70 - 130			B7L0065	11-Dec-17	0.239 L	13-Dec-17 14:19
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



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



1 inch = 0.4 mile
Imagery: Esri, 2016

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