



**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 1800702**

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

February 2019



May 17, 2018

Vista Work Order No. 1800702

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

Dear Ms. Hill,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on April 19, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

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

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

Sincerely,

A handwritten signature in black ink that reads "Martha Maier".

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.



May 17, 2018

Vista Work Order No. 1800702

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

Dear Ms. Hill,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on April 19, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

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

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

Sincerely,

Martha Maier
Laboratory Director



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

Vista Work Order No. 1800702

Case Narrative

Sample Condition on Receipt:

Ten 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. As requested, this report has been amended to remove two samples from the data set.

Analytical Notes:

EPA Method 537, Rev. 1.1

Samples "CH-AT-1RW190-0418" and "CH-AT-1RW192-0418" contained particulates and were centrifuged prior to extraction.

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

Holding Times

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

Quality Control

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

A Laboratory Fortified Blank (LFB) and 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.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW189-0418". The analyte recoveries and RPDs were within the method acceptance criteria.

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	17
Certifications.....	18
Sample Receipt.....	19

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1800702-01	CH-AT-1RW189-0418	MS/MSD17-Apr-18 13:12	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-02	CH-AT-1FB189-0418	17-Apr-18 13:13	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-03	CH-AT-1RW190-0418	17-Apr-18 14:00	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-04	CH-AT-1FB190-0418	17-Apr-18 14:01	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-05	CH-AT-1RW191-0418	17-Apr-18 14:22	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-06	CH-AT-1FB191-0418	17-Apr-18 14:23	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-07	CH-AT-1RW192-0418	18-Apr-18 10:34	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-08	CH-AT-1FB192-0418	18-Apr-18 10:35	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-09	CH-AT-1RW193-0418	18-Apr-18 11:02	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-10	CH-AT-1FB193-0418	18-Apr-18 11:03	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Aqueous					Laboratory Data Lab Sample: B8D0126-BLK1 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:56	1
PFOA	ND	1.08	5.00	10.0		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:56	1
PFOS	ND	1.04	5.00	10.0		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:56	1
13C2-PFDA	SURR	86.8	70 - 130			B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:56	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: LFB					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Aqueous					Laboratory Data Lab Sample: B8D0126-BS1 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	86.9	70.8	123	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
PFOA	83.6	80.0	105	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
PFOS	82.0	74.0	111	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		94.2	70- 130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
13C2-PFDA	SURR		85.7	70- 130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1

Sample ID: CH-AT-1RW189-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 13:12					Laboratory Data Lab Sample: 1800702-01 Date Received: 19-Apr-18 08:49 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		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
PFOA	ND	1.06	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
PFOS	ND	1.02	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	92.4	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1	
13C2-PFDA	SURR	85.8	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	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-1RW189-0418													EPA Method 537			
Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigator Matrix: Aqueous					Lab Sample: B8D0126-MS1/B8D0126-MSD1 QC Batch: B8D0126 Samp Size: 0.248/0.253 L					Source Lab Sample: 1800702-01 Date Extracted: 23-Apr-18 Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	72.8	71.4	102		79.6	69.8	114	11.1		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
PFOA	ND	81.6	80.7	101		81.5	78.9	103	1.96		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
PFOS	ND	73.9	74.7	98.9		80.6	73.0	110	10.6		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		90.2				96.4			70-130		25-Apr-18 20:08	1	25-Apr-18 20:19	1
13C2-PFDA		SURR		85.5				84.2			70-130		25-Apr-18 20:08	1	25-Apr-18 20:19	1

Sample ID: CH-AT-1FB189-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 13:13					Laboratory Data Lab Sample: 1800702-02 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1
PFOA	ND	1.06	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1
PFOS	ND	1.02	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.6	70 - 130			B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1
13C2-PFDA	SURR	84.0	70 - 130			B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	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-1FB190-0418					EPA Method 537					
Client Data Name: CH2M Hill										

Sample ID: CH-AT-1FB191-0418					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 14:23					Laboratory Data Lab Sample: 1800702-06 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.442	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1
PFOA	ND	1.08	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1
PFOS	ND	1.04	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	84.9	70 - 130		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1	
13C2-PFDA	SURR	92.0	70 - 130		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1	
DL - Detection Limit		LOD - Limit of Detection	LCL-UCL- Lower control limit - upper control limit		When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.					
		LOO - Limit of quantitation	Results reported to the DL.		Only the linear isomer is reported for all other analytes.					

Sample ID: CH-AT-1FB192-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 18-Apr-18 10:35					Laboratory Data Lab Sample: 1800702-08 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
PFOA	ND	1.05	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
PFOS	ND	1.01	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	90.5	70 - 130		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1	
13C2-PFDA	SURR	101	70 - 130		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	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
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
Q	Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
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	1322288
New Hampshire Environmental Accreditation Program	207717
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	014
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	9077
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.



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1800702 Temp: 1.0 °C
Storage ID: WR-2 Storage Secured Yes ☒ No ☐

Project ID CTO-08, MCOLF Atlantic
PFAS DW Investigation

PO#: 10006-7-106051

Sampler: K. Smith & M. Witmer
(name)

TAT Standard ☐ 21 days
(check one) Rush (surcharge may apply)
☐ 14 days ☒ 7 days Specify: _____

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

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time
Kathryn Smith 4/18/18 1300 Marissa Sparks 04/19/18 0939
Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment:
FEDEX

Tracking No

Add Analysis(es) Requested

Container(s)

Mod EPA
Method 537

EPA Method
537 (DW only)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 28	Other, Please List	PFOA/PFOS/PFAS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW189-0418	4/17/18	1312		2	P	DW						X			TZ preservative
CH-AT-1RW189-0418-MS		1312		2	P	DW						X			TZ preservative
CH-AT-1RW189-0418-SD		1312		2	P	DW						X			TZ preservative
CH-AT-1FB189-0418		1313		2	P	DW						X			TZ preservative
CH-AT-1RW190-0418		1400		2	P	DW						X			TZ preservative
CH-AT-1FB190-0418		1401		2	P	DW						X			TZ preservative
CH-AT-1RW191-0418		1422		2	P	DW						X			TZ preservative
CH-AT-1FB191-0418		1423		2	P	DW						X			TZ preservative
CH-AT-1RW192-0418	4/18/18	1034		2	P	DW						X			TZ preservative
CH-AT-1FB192-0418		1035		2	P	DW						X			TZ preservative

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

SEND
DOCUMENTATION
AND RESULTS TO:

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

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

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

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



Work Order #: 1800712 Temp 1.0 %
Storage ID: WR-2 Storage Secured Yes ☒ No ☐

Sampler: K. Smith & M. Witwer
(name)

TAT Standard ☐ 21 days
(check one). Rush (surcharge may apply)
☐ 14 days ☒ 7 days Specify

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
<i>Kathryn Smith</i> Kathryn Smith	4/18/18	1300	<i>Marissa Sparks</i> Marissa Sparks	04/19/18	0930
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

Tracking No.

Container(s)

Mod. EPA
Method 537

EPA Method
537 (DW only)

[illegible]

SEND
DOCUMENTATION
AND RESULTS TO:

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

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

Sample Log-in Checklist

Vista Work Order #: 1800702 TAT 7 days

Samples Arrival:	Date/Time <u>04/19/18 0849</u>	Initials: <u>WWS</u>	Location: <u>WR-2</u> Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time <u>04/19/18 1058</u>	Initials: <u>WWS</u>	Location: <u>WR-2</u> Shelf/Rack: <u>E-6</u>
Delivered By:	<u>FedEx</u> UPS On Trac GSO DHL Hand Delivered Other		
Preservation:	<u>Ice</u> Blue Ice Dry Ice None		
Temp °C: <u>1.1</u> (uncorrected)	Time: <u>0937</u>	Thermometer ID: IR-4	
Temp °C: <u>1.0</u> (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 # <u>7805 7701 8632</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	Na ₂ S ₂ O ₃ <u>Trizma</u> None	<u>Yes</u> No NA	
Shipping Container	<u>Vista</u> Client <u>Retain</u> Return Dispose		

Comments:



May 17, 2018

Vista Work Order No. 1800702

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

Dear Ms. Hill,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on April 19, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

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

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

Sincerely,

A handwritten signature in black ink that reads "Martha Maier".

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.



May 17, 2018

Vista Work Order No. 1800702

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

Dear Ms. Hill,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on April 19, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmailer@vista-analytical.com.

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

Sincerely,

Martha Maier
Laboratory Director



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

Vista Work Order No. 1800702

Case Narrative

Sample Condition on Receipt:

Ten 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. As requested, this report has been amended to remove two samples from the data set.

Analytical Notes:

EPA Method 537, Rev. 1.1

Samples "CH-AT-1RW190-0418" and "CH-AT-1RW192-0418" contained particulates and were centrifuged prior to extraction.

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

Holding Times

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

Quality Control

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

A Laboratory Fortified Blank (LFB) and 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.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW189-0418". The analyte recoveries and RPDs were within the method acceptance criteria.

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	17
Certifications.....	18
Sample Receipt.....	19
Extraction Information.....	22
Sample Data - EPA Method 537.....	27
IIS Areas and CCVs.....	52
ICAL with ICV.....	59

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1800702-01	CH-AT-1RW189-0418	MS/MSD17-Apr-18 13:12	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-02	CH-AT-1FB189-0418	17-Apr-18 13:13	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-03	CH-AT-1RW190-0418	17-Apr-18 14:00	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-04	CH-AT-1FB190-0418	17-Apr-18 14:01	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-05	CH-AT-1RW191-0418	17-Apr-18 14:22	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-06	CH-AT-1FB191-0418	17-Apr-18 14:23	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-07	CH-AT-1RW192-0418	18-Apr-18 10:34	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-08	CH-AT-1FB192-0418	18-Apr-18 10:35	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-09	CH-AT-1RW193-0418	18-Apr-18 11:02	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1800702-10	CH-AT-1FB193-0418	18-Apr-18 11:03	19-Apr-18 08:49	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LFB					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Aqueous					Laboratory Data Lab Sample: B8D0126-BS1 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	86.9	70.8	123	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
PFOA	83.6	80.0	105	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
PFOS	82.0	74.0	111	70-130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		94.2	70- 130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1
13C2-PFDA	SURR		85.7	70- 130		B8D0126	23-Apr-18	0.250 L	25-Apr-18 19:45	1

Sample ID: CH-AT-1RW189-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 13:12					Laboratory Data Lab Sample: 1800702-01 Date Received: 19-Apr-18 08:49 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		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
PFOA	ND	1.06	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
PFOS	ND	1.02	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	92.4	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1	
13C2-PFDA	SURR	85.8	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	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-1RW189-0418												EPA Method 537				
Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigator Matrix: Aqueous					Lab Sample: B8D0126-MS1/B8D0126-MSD1 QC Batch: B8D0126 Samp Size: 0.248/0.253 L					Source Lab Sample: 1800702-01 Date Extracted: 23-Apr-18 Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	72.8	71.4	102		79.6	69.8	114	11.1		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
PFOA	ND	81.6	80.7	101		81.5	78.9	103	1.96		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
PFOS	ND	73.9	74.7	98.9		80.6	73.0	110	10.6		70-130	30	25-Apr-18 20:08	1	25-Apr-18 20:19	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		90.2				96.4			70-130		25-Apr-18 20:08	1	25-Apr-18 20:19	1
13C2-PFDA		SURR		85.5				84.2			70-130		25-Apr-18 20:08	1	25-Apr-18 20:19	1

Sample ID: CH-AT-1FB189-0418					EPA Method 537					
Client Data Name: CH2M Hill										

Sample ID: CH-AT-1RW190-0418					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 14:00					Laboratory Data Lab Sample: 1800702-03 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	1
PFOA	ND	1.07	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	1
PFOS	ND	1.03	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.9	70 - 130			B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	1
13C2-PFDA	SURR	91.6	70 - 130			B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	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-1FB190-0418					EPA Method 537					
Client Data Name: CH2M Hill										

Sample ID: CH-AT-1RW191-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Apr-18 14:22					Laboratory Data Lab Sample: 1800702-05 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1
PFOA	ND	1.04	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1
PFOS	ND	1.00	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.6	70 - 130			B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1
13C2-PFDA	SURR	102	70 - 130			B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	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.				
		LOO - Limit of quantitation	Results reported to the DL.			Only the linear isomer is reported for all other analytes.				

Sample ID: CH-AT-1FB191-0418					EPA Method 537					
Client Data Name: CH2M Hill										

Sample ID: CH-AT-1RW192-0418										EPA Method 537	
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 18-Apr-18 10:34					Laboratory Data Lab Sample: 1800702-07 Date Received: 19-Apr-18 08:49 Column: BEH C18						
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.457	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40	1	
PFOA	ND	1.11	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40	1	
PFOS	ND	1.07	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	89.1	70 - 130			B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40	1	
13C2-PFDA	SURR	89.5	70 - 130			B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40	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-1FB192-0418										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic PFAS DW Investigation Matrix: Drinking Water Date Collected: 18-Apr-18 10:35					Laboratory Data Lab Sample: 1800702-08 Date Received: 19-Apr-18 08:49 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
PFOA	ND	1.05	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
PFOS	ND	1.01	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.5	70 - 130			B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1
13C2-PFDA	SURR	101	70 - 130			B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	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
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
Q	Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
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	1322288
New Hampshire Environmental Accreditation Program	207717
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	014
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	9077
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.



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1800702 Temp: 1.0 °C
Storage ID: WR-2 Storage Secured Yes ☒ No ☐

Project ID CTO-08, MCOLF Atlantic
PFAS DW Investigation

PO#: 10006-7-106051

Sampler: K. Smith & M. Witmer
(name)

TAT Standard ☐ 21 days
(check one) Rush (surcharge may apply)
☐ 14 days ☒ 7 days Specify: _____

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

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time
Kathryn Smith 4/18/18 1300 Marissa Sparks 04/19/18 0939
Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment:
FEDEX

Tracking No _____

Add Analysis(es) Requested

Container(s)

Mod EPA
Method 537

EPA Method
537 (DW only)

Quantity Type Matrix PFOA/PFOS UCMR3 PFAS List 6 537 List 14 Full List of 28 Other, Please List

PFOA/PFOS/PFAS UCMR3 PFAS List 6 PFAS List 14

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 28	Other, Please List	PFOA/PFOS/PFAS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW189-0418	4/17/18	1312		2	P	DW						X			TZ preservative
CH-AT-1RW189-0418-MS		1312		2	P	DW						X			TZ preservative
CH-AT-1RW189-0418-SD		1312		2	P	DW						X			TZ preservative
CH-AT-1FB189-0418		1313		2	P	DW						X			TZ preservative
CH-AT-1RW190-0418		1400		2	P	DW						X			TZ preservative
CH-AT-1FB190-0418		1401		2	P	DW						X			TZ preservative
CH-AT-1RW191-0418		1422		2	P	DW						X			TZ preservative
CH-AT-1FB191-0418		1423		2	P	DW						X			TZ preservative
CH-AT-1RW192-0418	4/18/18	1034		2	P	DW						X			TZ preservative
CH-AT-1FB192-0418		1035		2	P	DW						X			TZ preservative

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

SEND
DOCUMENTATION
AND RESULTS TO:

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

Container Types: P= HDPE, PJ= HDPE Jar
O = Other _____

Bottle Preservation Type: T = Thiosulfate,
TZ = Trizma: _____

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



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: 1800702 Temp: 1.0 °C

Storage ID: WR-2 Storage Secured Yes ☒ No ☐

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

PO# 10006-7-106051

Sampler: K. Smith & M. Whitte
(name)

TAT Standard ☐ 21 days
(check one). Rush (surcharge may apply)
☐ 14 days ☒ 7 days Specify

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
<i>Kathryn Smith</i> Kathryn Smith	4/18/18	1300	<i>Marissa Sparks</i> Marissa Sparks	04/19/18	0930
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment:
FEDEX

Tracking No.

Add Analysis(es) Requested

Container(s)

Mod. EPA
Method 537

EPA Method
537 (DW only)

[illegible]

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

SEND
DOCUMENTATION
AND RESULTS TO:

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

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

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

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

Sample Log-in Checklist

Vista Work Order #: 1800702 TAT 7 days

Samples Arrival:	Date/Time <u>04/19/18 0849</u>	Initials: <u>WWS</u>	Location: <u>WR-2</u> Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time <u>04/19/18 1058</u>	Initials: <u>WWS</u>	Location: <u>WR-2</u> Shelf/Rack: <u>E-6</u>
Delivered By:	<u>FedEx</u> UPS On Trac GSO DHL Hand Delivered Other		
Preservation:	<u>Ice</u> Blue Ice Dry Ice None		
Temp °C: <u>1.1</u> (uncorrected)	Time: <u>0937</u>	Thermometer ID: IR-4	
Temp °C: <u>1.0</u> (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 # <u>7805 7701 8632</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	Na ₂ S ₂ O ₃ <u>Trizma</u> None	<u>Yes</u> No NA	
Shipping Container	<u>Vista</u> Client <u>Retain</u> Return Dispose		

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: 1800702



Prep Expiration: 2018-May-01
Client: CH2M Hill

Workorder Due: 26-Apr-18 00:00

TAT: 7

Method: 537 PFAS DW DoD Unmodified
Matrix: Aqueous

Prep Batch: B8D0126

Prep Data Entered: 1-1N 4/24/18
Date and Initials

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

Initial Sequence: S00007

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1800702-01	ABC	☒	☒	CH-AT-1RW189-0418	MS/MSD	WR-2 E-6	HDPE Bottle, 250 mL
1800702-02	A	☒	☒	CH-AT-1FB189-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-03		☒	☒	CH-AT-1RW190-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-04		☒	☒	CH-AT-1FB190-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-05		☒	☒	CH-AT-1RW191-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-06		☒	☒	CH-AT-1FB191-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-07		☒	☒	CH-AT-1RW192-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-08		☒	☒	CH-AT-1FB192-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-09		☒	☒	CH-AT-1RW193-0418		WR-2 E-6	HDPE Bottle, 250 mL
1800702-10		☒	☒	CH-AT-1FB193-0418		WR-2 E-6	HDPE Bottle, 250 mL

Pre-Prep Check Out: HB 4/19/18
Pre-Prep Check In: HB 4/19/18

Prep Check Out: FR 4.23.18
Prep Check In: NA

Prep Reconciled Initials/Date: HB 4/19/18
Spike Reconciled Initials/Date: FR 4.23.18
VialBoxID: Ditto

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DW DoD Unmodified

Method: 537 PFAS DW Unmodified

B8D0126

Chemist: FRPrep Date/Time: ~~18 Apr 18 17:30~~
4-23-18 9:00

Prepared using: LCMS - SPE Extraction-LCMS

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
☐	B8D0126-BLK1 (A)	NA	NA	(0.250)	FR JR 4-23-18	FR 4-23-18	HIN FR 4/23/18
☐	B8D0126-BS1 (A)	↓	↓	(0.250)	↓	↓	↓
☐	B8D0126-MS1 1800702-01 (B)	285.40	37.59	0.24781	↓	↓	↓
☐	B8D0126-MSD1 1800702-01 (B)	291.14	37.70	0.25344	↓	↓	↓
☐	1800690-01	278.45					
☐	1800690-02	299.97					
☐	1800690-03	297.24					
☐	1800690-04	298.05					
☐	1800690-05	296.31					
☐	1800702-01 (B)	292.28	37.99	0.25429	FR JR 4-23-18	FR 4-23-18	HIN FR 4/23/18
☐	1800702-01RE1						HB 4/19/18
☐	1800702-02	293.44	37.81	0.25563	FR JR 4-23-18	FR 4-23-18	HIN FR 4/23/18
☒	1800702-03 HB 4/19/18	302.01 290.50	37.74	0.25276	↓	↓	↓
☐	1800702-04	302.01	37.80	0.26421	↓	↓	↓
☐	1800702-05	296.33	37.62	0.25871	↓	↓	↓
☐	1800702-06	298.52	37.81	0.25071	↓	↓	↓

SS/IS: 18D0505, 20 mL (V2)NS: 18C1218, 20 mL (V1)IS/RS: 18D0506, 20 mL (V2)SPE Chem: Strata X 33 μ m 500 mg 6mL
Lot#: 518-000744Ele SOLV: MeOHLot#: JB064809Final Volume(s) 1 mLNotes: (A) 1.25 grams Triema added to QCS. HB 4/19/18
(B) Samples discarded after extraction HIN 4/23/18

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Aqueous

B8D0126

Chemist: FR

Method: 537 PFAS DW DoD Unmodified

Prep Date/Time: ~~18-Apr-18~~ 17:30

Method: 537 PFAS DW Unmodified

4-23-18 9:00

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: <u>HIRM-8</u>							
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☒	1800702-07	280.23	37.89	0.24234	FR JR 4-23-18	FR 4-23-18	HN FR 4/23/18
☐	1800702-08	295.43	38.02	0.25741	↓	↓	↓
☐	1800702-09	292.36	37.83	0.25453			
☐	1800702-10	280.81	37.76	0.24305			

SS/IS: <u>18D0505, 20 mL (V2)</u> NS: <u>18C1218, 20 mL (V1)</u> IS/RS: <u>18D0506, 20 mL (V2)</u>	SPE Chem: <u>Strata X 33 μm 500mg</u> Lot#: <u>518-000744</u> Elc SOLV: <u>MeOH</u> Lot#: <u>JBD064809</u> Final Volume(s) <u>1 mL</u>	Notes:
--	--	--------

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B8D0126

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1800702-01	0.25429 ✓	N/A	N/A	1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-01	0.25429 ✓		T	1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW Unmodified
1800702-02	0.25563 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-03	0.25276 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-04	0.26421 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-05	0.25871 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-06	0.25071 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-07	0.24234 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-08	0.25741 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-09	0.25453 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-10	0.24305 ✓			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
B8D0126-BLK1	0.25			1000	23-Apr-18 09:30	FBR				QC
B8D0126-BS1	0.25			1000	23-Apr-18 09:30	FBR	18C1218 ✓	20 ✓		QC
B8D0126-MS1	0.24781 ✓			1000	23-Apr-18 09:30	FBR	18C1218 ✓	20 ✓		QC
B8D0126-MSD1	0.25344 ✓	✓	✓	1000	23-Apr-18 09:30	FBR	18C1218 ✓	20 ✓		QC

H/N 4/24/18

SAMPLE DATA –EPA METHOD 537

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-16.qld

Last Altered: Thursday, April 26, 2018 13:40:45 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:41:22 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_16, Date: 25-Apr-2018, Time: 19:56:59, ID: B8D0126-BLK1 LRB 0.25, Description: LRB

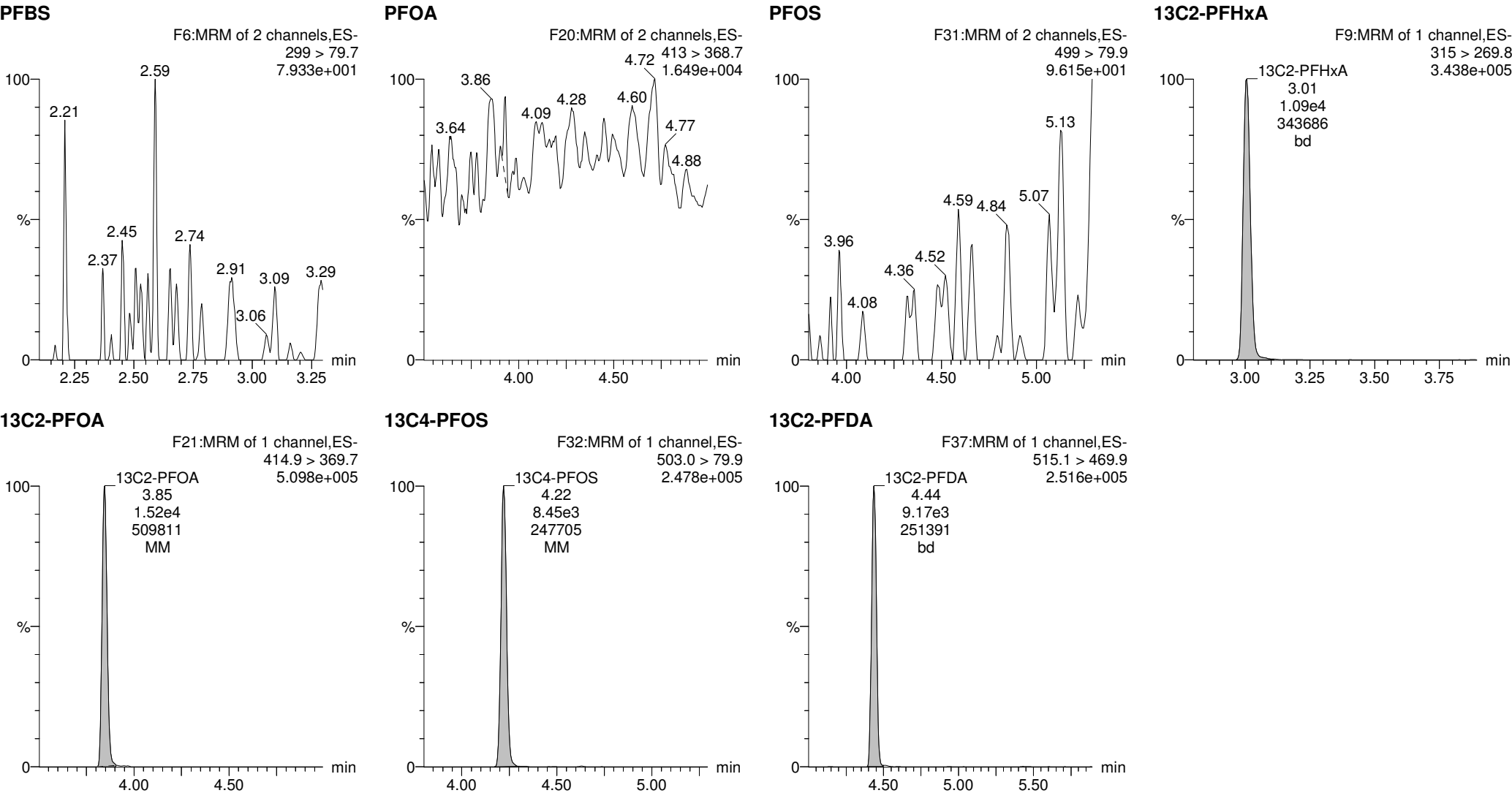
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.45e3	0.2500		2.64				
2	5 PFOA	413 > 368.7		1.52e4	0.2500		3.86				
3	7 PFOS	499 >79.9		8.45e3	0.2500		4.23				
4	15 13C2-PFHxA	315 > 269.8	1.09e4	1.52e4	0.2500	0.689	3.08	3.01	7.15	41.5	103.8
5	16 13C2-PFDA	515.1 > 469.9	9.17e3	1.52e4	0.2500	0.696	4.43	4.44	6.04	34.7	86.8
6	18 13C2-PFOA	414.9 > 369.7	1.52e4	1.52e4	0.2500	1.000	3.92	3.85	10.0	40.0	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.45e3	8.45e3	0.2500	1.000	4.29	4.22	28.7	115	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-16.qld

Last Altered: Thursday, April 26, 2018 13:40:45 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:41:22 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_16, Date: 25-Apr-2018, Time: 19:56:59, ID: B8D0126-BLK1 LRB 0.25, Description: LRB



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-15.qld

Last Altered: Thursday, April 26, 2018 13:45:40 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:46:05 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

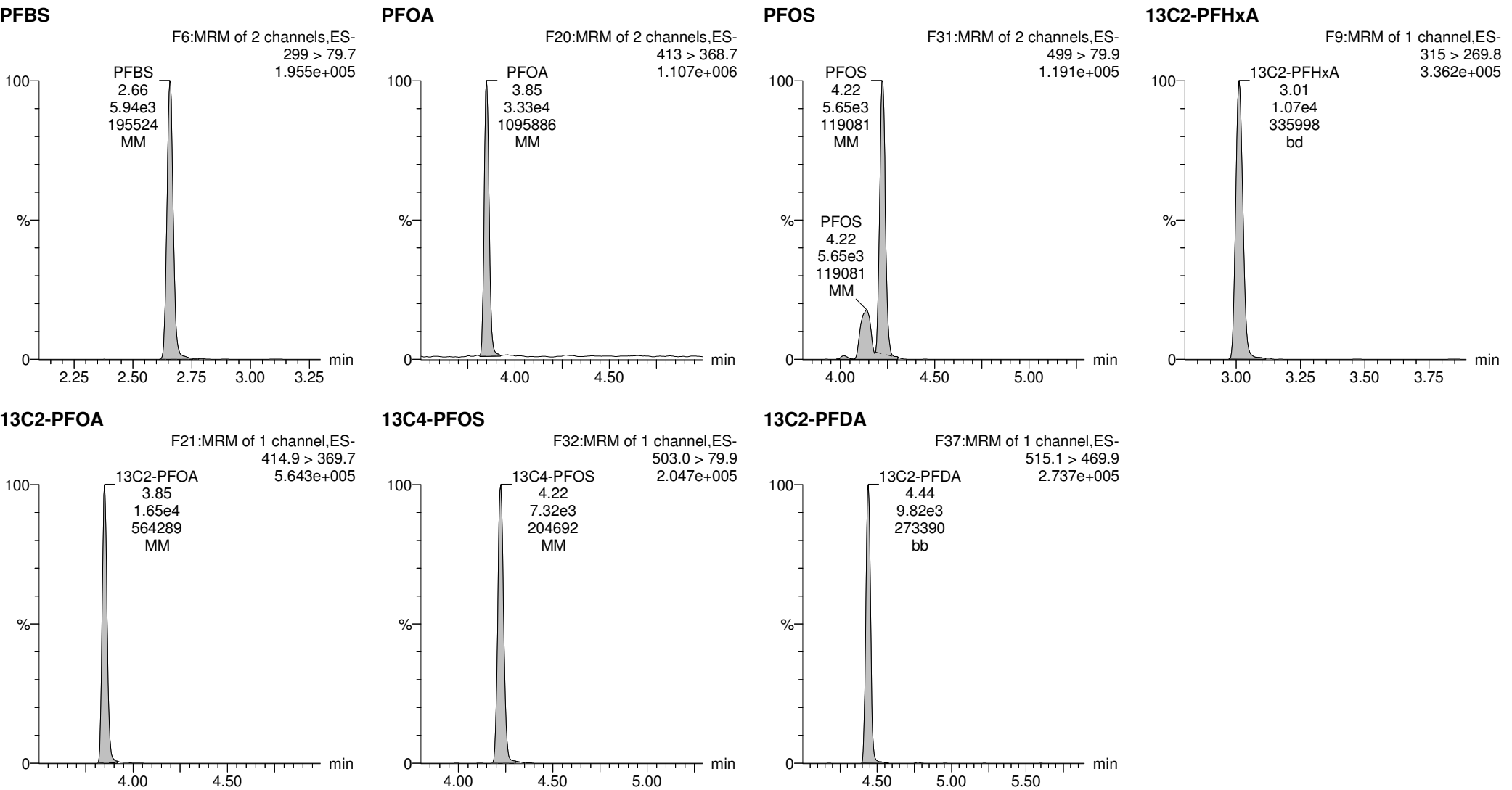
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_15, Date: 25-Apr-2018, Time: 19:45:32, ID: B8D0126-BS1 LFB 0.25, Description: LFB

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.94e3	7.32e3	0.2500		2.64	2.66	23.3	86.9	122.8
2	5 PFOA	413 > 368.7	3.33e4	1.65e4	0.2500		3.86	3.85	20.2	83.6	104.5
3	7 PFOS	499 >79.9	5.65e3	7.32e3	0.2500		4.23	4.22	22.2	82.0	110.8
4	15 13C2-PFHxA	315 > 269.8	1.07e4	1.65e4	0.2500	0.689	3.09	3.01	6.48	37.7	94.2
5	16 13C2-PFDA	515.1 > 469.9	9.82e3	1.65e4	0.2500	0.696	4.43	4.44	5.96	34.3	85.7
6	18 13C2-PFOA	414.9 > 369.7	1.65e4	1.65e4	0.2500	1.000	3.92	3.85	10.0	40.0	100.0
7	19 13C4-PFOS	503.0 > 79.9	7.32e3	7.32e3	0.2500	1.000	4.29	4.22	28.7	115	100.0

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_15, **Date:** 25-Apr-2018, **Time:** 19:45:32, **ID:** B8D0126-BS1 LFB 0.25, **Description:** LFB



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-19.qld

Last Altered: Thursday, April 26, 2018 13:47:20 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:47:49 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_19, Date: 25-Apr-2018, Time: 20:31:24, ID: 1800702-01 CH-AT-1RW189-0418 0.25429, Description: CH-AT-1RW189-0418

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.02e3	0.2543		2.64				
2	5 PFOA	413 > 368.7		1.60e4	0.2543		3.86				
3	7 PFOS	499 >79.9		9.02e3	0.2543		4.23				
4	15 13C2-PFHxA	315 > 269.8	1.02e4	1.60e4	0.2543	0.689	3.08	3.01	6.36	36.3	92.4
5	16 13C2-PFDA	515.1 > 469.9	9.53e3	1.60e4	0.2543	0.696	4.43	4.44	5.97	33.7	85.8
6	18 13C2-PFOA	414.9 > 369.7	1.60e4	1.60e4	0.2543	1.000	3.92	3.85	10.0	39.3	100.0
7	19 13C4-PFOS	503.0 > 79.9	9.02e3	9.02e3	0.2543	1.000	4.29	4.22	28.7	113	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-19.qld

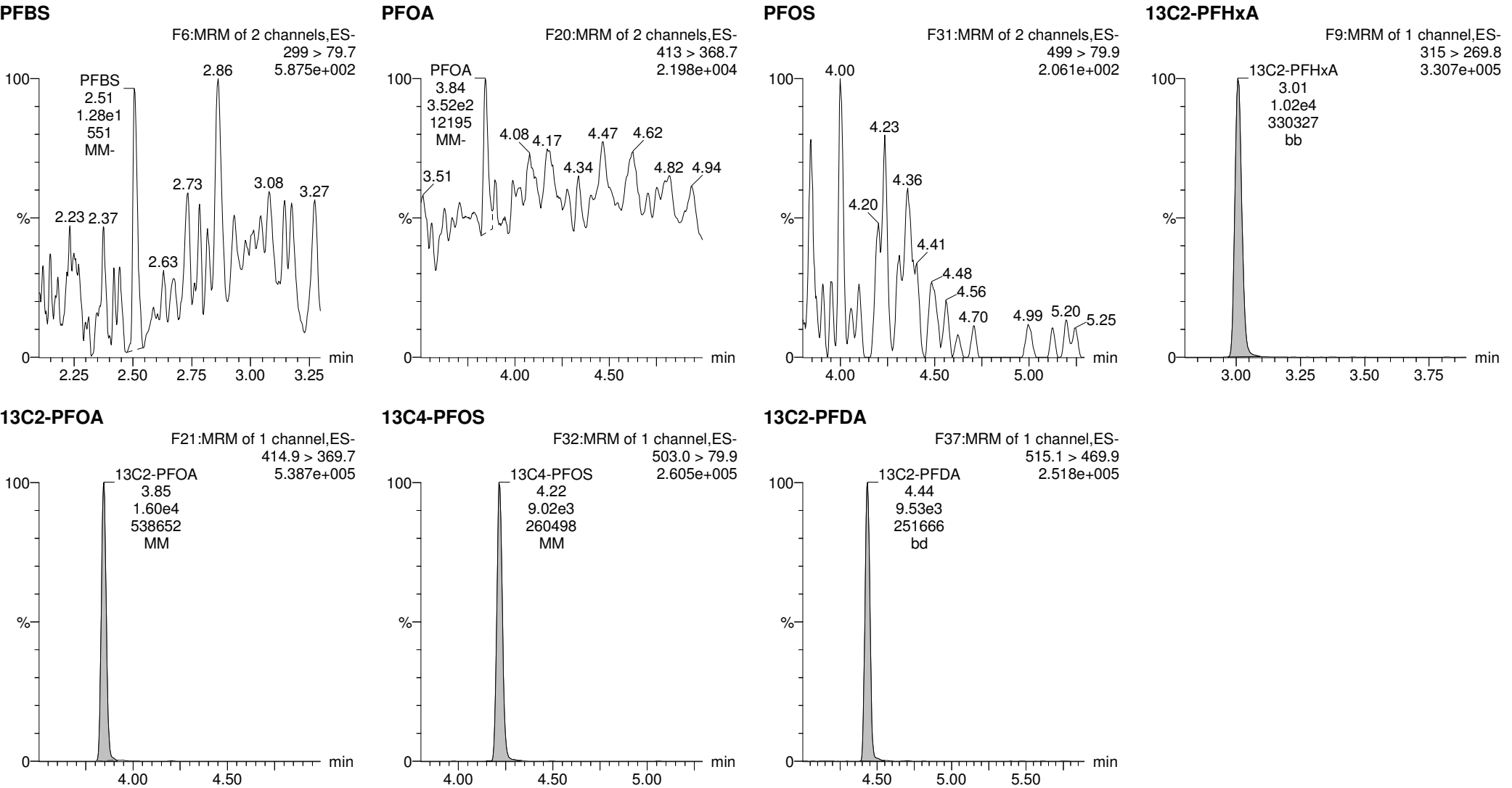
Last Altered: Thursday, April 26, 2018 13:47:20 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:47:49 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_19, Date: 25-Apr-2018, Time: 20:31:24, ID: 1800702-01 CH-AT-1RW189-0418 0.25429, Description: CH-AT-1RW189-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-17.qld

Last Altered: Thursday, April 26, 2018 13:38:19 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:39:14 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_17, Date: 25-Apr-2018, Time: 20:08:27, ID: B8D0126-MS1 LFSM 0.24781, Description: LFSM

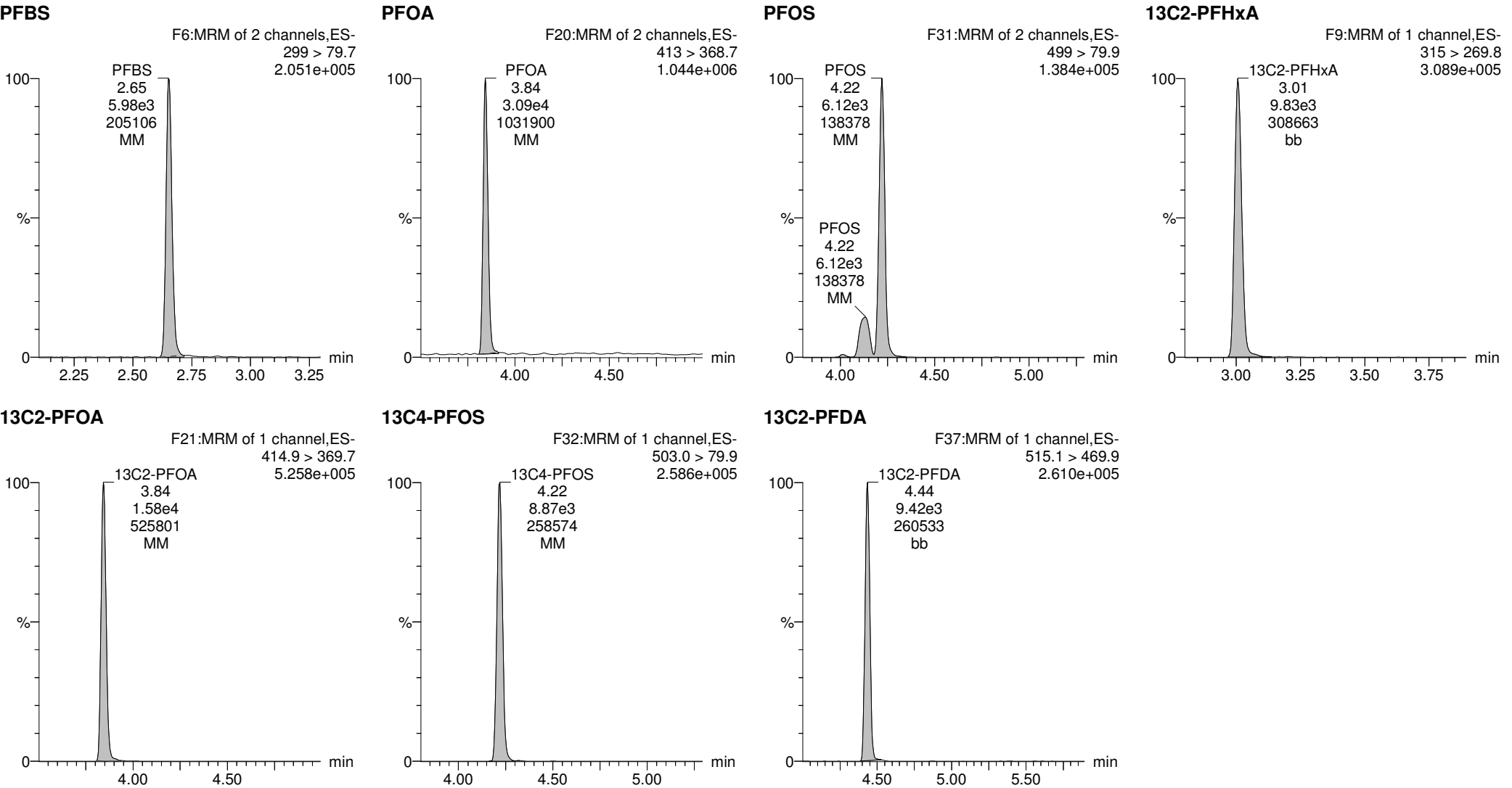
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.98e3	8.87e3	0.2478		2.64	2.65	19.4	72.8	
2	5 PFOA	413 > 368.7	3.09e4	1.58e4	0.2478		3.85	3.84	19.5	81.6	
3	7 PFOS	499 >79.9	6.12e3	8.87e3	0.2478		4.23	4.22	19.8	73.9	
4	15 13C2-PFHxA	315 > 269.8	9.83e3	1.58e4	0.2478	0.689	3.08	3.01	6.21	36.4	90.2
5	16 13C2-PFDA	515.1 > 469.9	9.42e3	1.58e4	0.2478	0.696	4.42	4.44	5.95	34.5	85.5
6	18 13C2-PFOA	414.9 > 369.7	1.58e4	1.58e4	0.2478	1.000	3.92	3.84	10.0	40.4	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.87e3	8.87e3	0.2478	1.000	4.29	4.22	28.7	116	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-17.qld

Last Altered: Thursday, April 26, 2018 13:38:19 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:39:14 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_17, Date: 25-Apr-2018, Time: 20:08:27, ID: B8D0126-MS1 LFSM 0.24781, Description: LFSM



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-18.qld

Last Altered: Thursday, April 26, 2018 13:25:19 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:35:01 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_18, Date: 25-Apr-2018, Time: 20:19:57, ID: B8D0126-MSD1 LFSMD 0.25344, Description: LFSMD

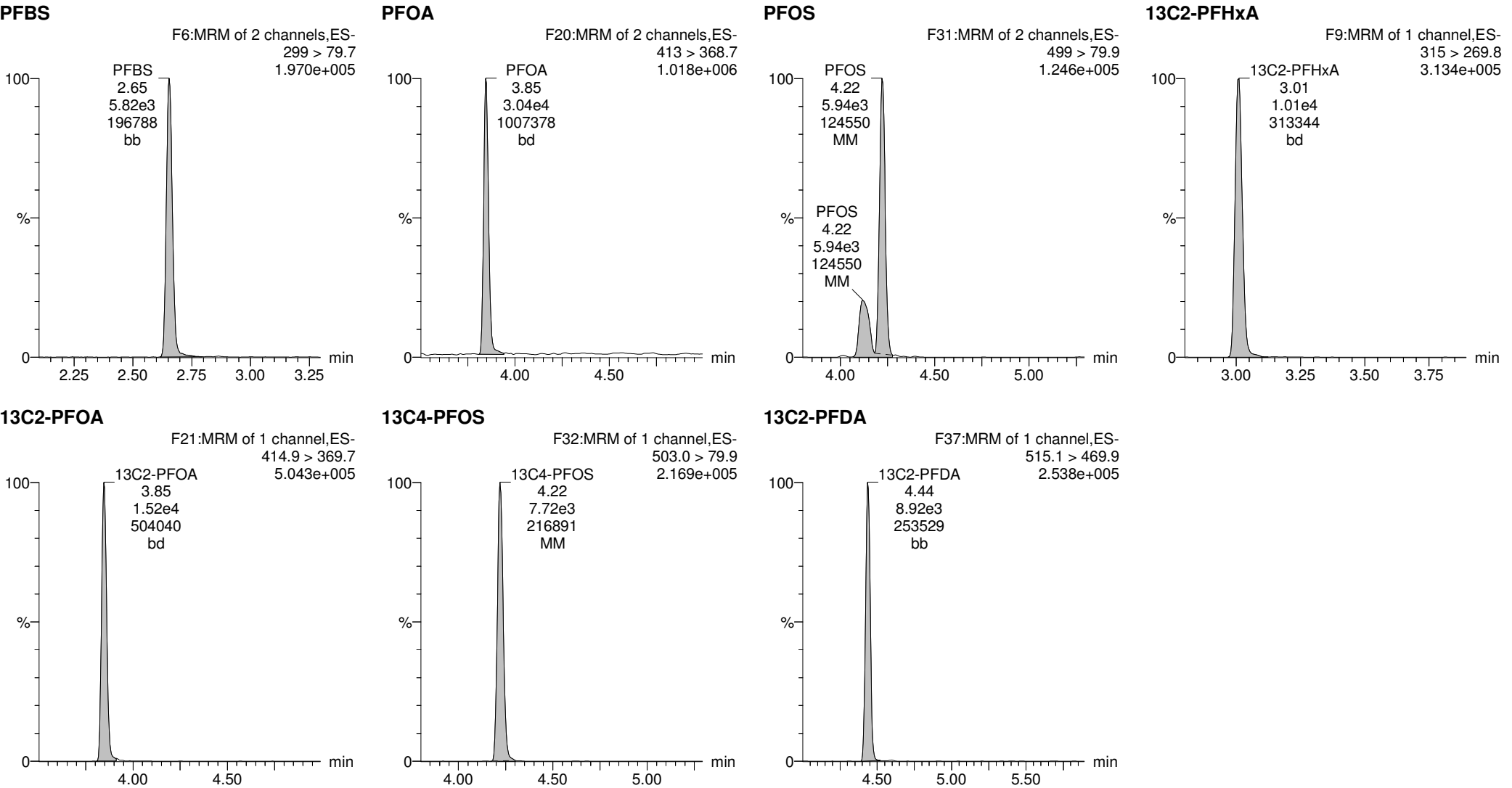
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.82e3	7.72e3	0.2534		2.64	2.65	21.6	79.6	
2	5 PFOA	413 > 368.7	3.04e4	1.52e4	0.2534		3.86	3.85	20.0	81.5	
3	7 PFOS	499 >79.9	5.94e3	7.72e3	0.2534		4.23	4.22	22.1	80.6	
4	15 13C2-PFHxA	315 > 269.8	1.01e4	1.52e4	0.2534	0.689	3.08	3.01	6.64	38.0	96.4
5	16 13C2-PFDA	515.1 > 469.9	8.92e3	1.52e4	0.2534	0.696	4.43	4.44	5.86	33.2	84.2
6	18 13C2-PFOA	414.9 > 369.7	1.52e4	1.52e4	0.2534	1.000	3.92	3.85	10.0	39.5	100.0
7	19 13C4-PFOS	503.0 > 79.9	7.72e3	7.72e3	0.2534	1.000	4.29	4.22	28.7	113	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-18.qld

Last Altered: Thursday, April 26, 2018 13:25:19 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:35:01 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_18, Date: 25-Apr-2018, Time: 20:19:57, ID: B8D0126-MSD1 LFSMD 0.25344, Description: LFSMD



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-20.qld

Last Altered: Thursday, April 26, 2018 13:48:39 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:49:18 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_20, Date: 25-Apr-2018, Time: 20:42:54, ID: 1800702-02 CH-AT-1FB189-0418 0.25563, Description: CH-AT-1FB189-0418

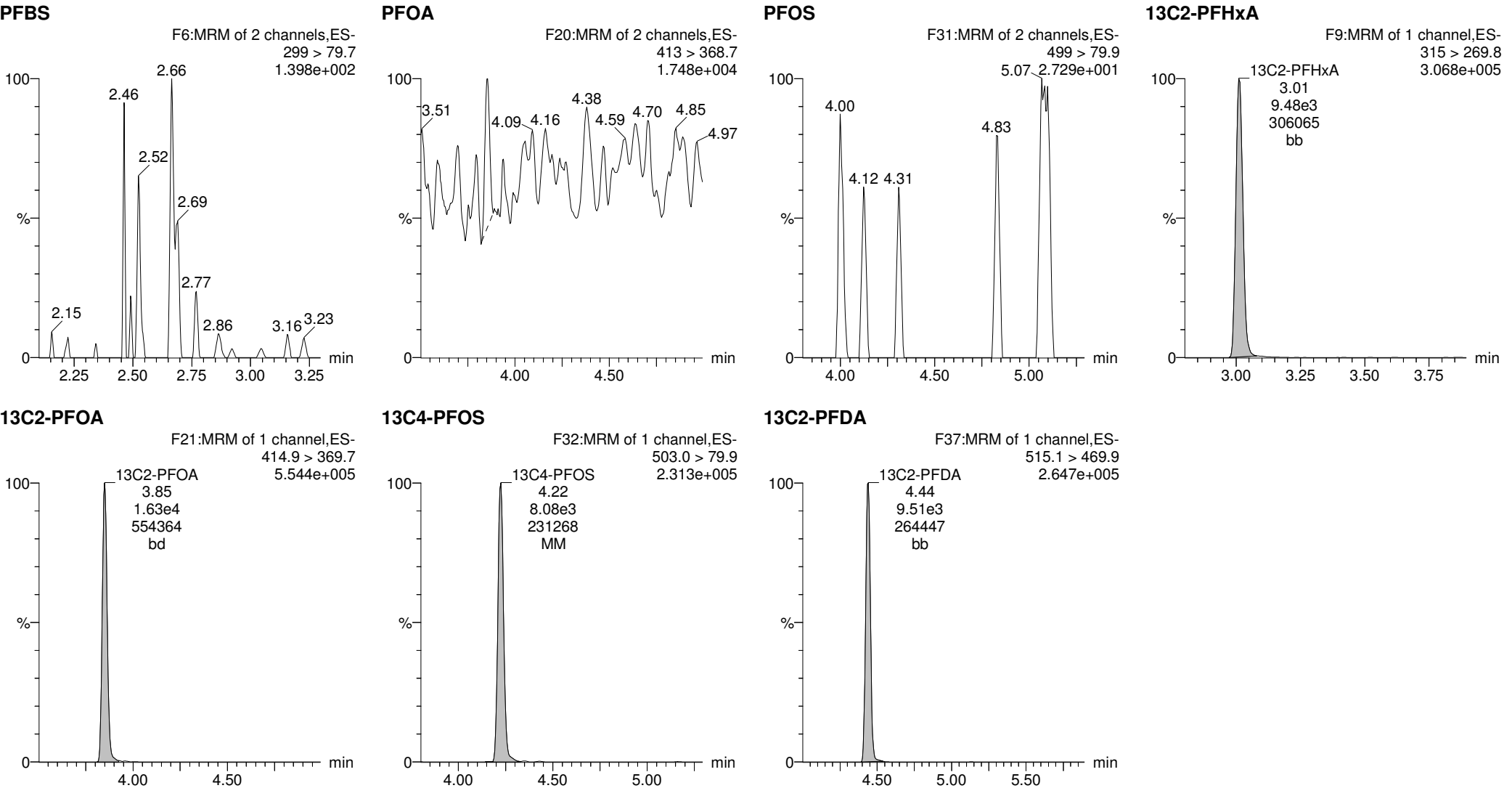
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.08e3	0.2556		2.64				
2	5 PFOA	413 > 368.7		1.63e4	0.2556		3.86				
3	7 PFOS	499 >79.9		8.08e3	0.2556		4.23				
4	15 13C2-PFHxA	315 > 269.8	9.48e3	1.63e4	0.2556	0.689	3.09	3.01	5.83	33.1	84.6
5	16 13C2-PFDA	515.1 > 469.9	9.51e3	1.63e4	0.2556	0.696	4.43	4.44	5.85	32.9	84.0
6	18 13C2-PFOA	414.9 > 369.7	1.63e4	1.63e4	0.2556	1.000	3.92	3.85	10.0	39.1	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.08e3	8.08e3	0.2556	1.000	4.29	4.22	28.7	112	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-20.qld

Last Altered: Thursday, April 26, 2018 13:48:39 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:49:18 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_20, Date: 25-Apr-2018, Time: 20:42:54, ID: 1800702-02 CH-AT-1FB189-0418 0.25563, Description: CH-AT-1FB189-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-21.qld

Last Altered: Thursday, April 26, 2018 13:50:24 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:50:51 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_21, Date: 25-Apr-2018, Time: 20:54:21, ID: 1800702-03 CH-AT-1RW190-0418 0.25276, Description: CH-AT-1RW190-0418

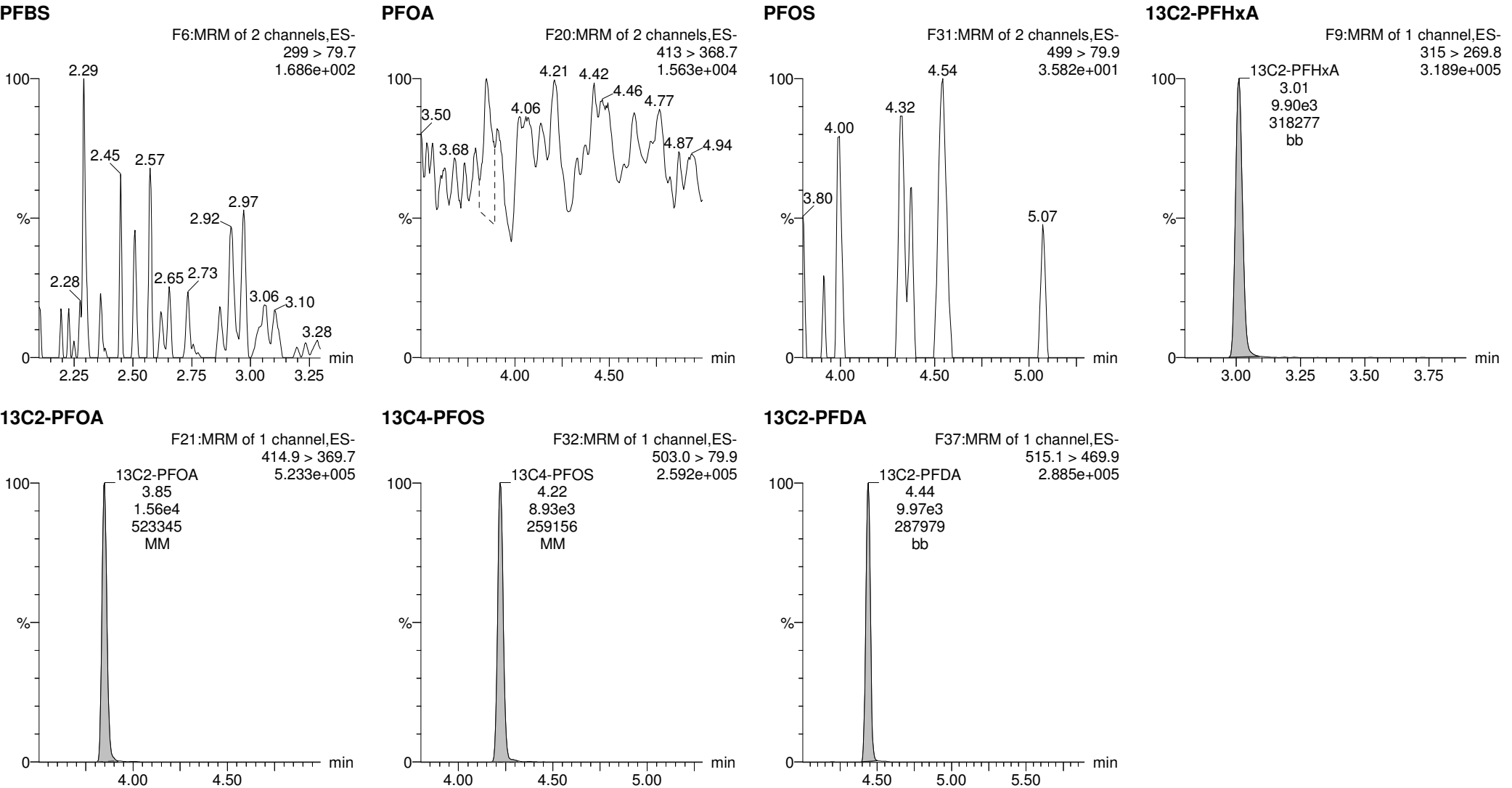
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.93e3	0.2528		2.64				
2	5 PFOA	413 > 368.7		1.56e4	0.2528		3.86				
3	7 PFOS	499 >79.9		8.93e3	0.2528		4.23				
4	15 13C2-PFHxA	315 > 269.8	9.90e3	1.56e4	0.2528	0.689	3.09	3.01	6.33	36.4	91.9
5	16 13C2-PFDA	515.1 > 469.9	9.97e3	1.56e4	0.2528	0.696	4.43	4.44	6.37	36.2	91.6
6	18 13C2-PFOA	414.9 > 369.7	1.56e4	1.56e4	0.2528	1.000	3.92	3.85	10.0	39.6	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.93e3	8.93e3	0.2528	1.000	4.29	4.22	28.7	114	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-21.qld

Last Altered: Thursday, April 26, 2018 13:50:24 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:50:51 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_21, Date: 25-Apr-2018, Time: 20:54:21, ID: 1800702-03 CH-AT-1RW190-0418 0.25276, Description: CH-AT-1RW190-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-22.qld

Last Altered: Thursday, April 26, 2018 13:51:39 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:52:06 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

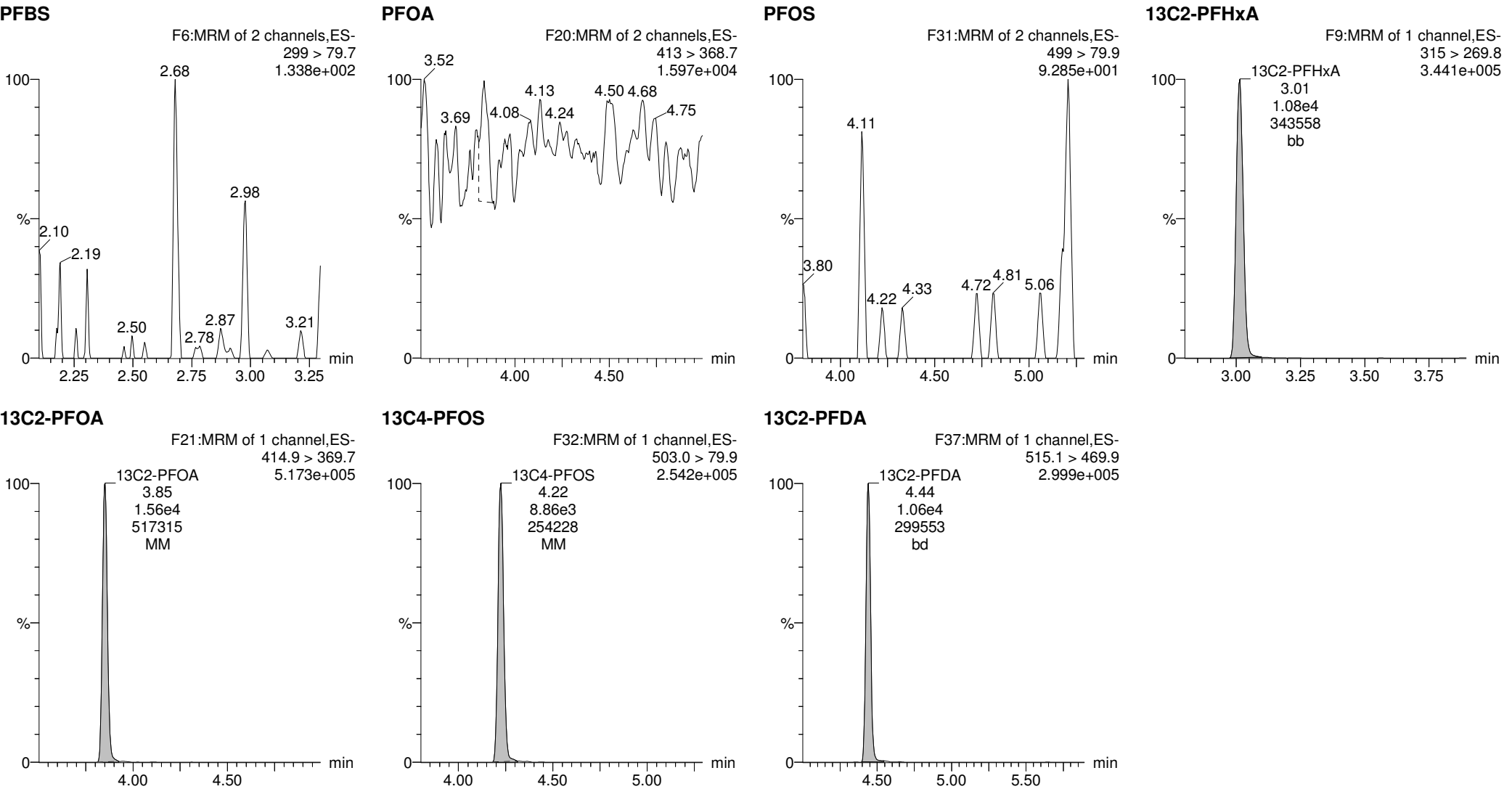
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_22, Date: 25-Apr-2018, Time: 21:05:51, ID: 1800702-04 CH-AT-1FB190-0418 0.26421, Description: CH-AT-1FB190-0418

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.86e3	0.2642		2.64				
2	5 PFOA	413 > 368.7		1.56e4	0.2642		3.86				
3	7 PFOS	499 >79.9		8.86e3	0.2642		4.23				
4	15 13C2-PFHxA	315 > 269.8	1.08e4	1.56e4	0.2642	0.689	3.09	3.01	6.90	37.9	100.2
5	16 13C2-PFDA	515.1 > 469.9	1.06e4	1.56e4	0.2642	0.696	4.43	4.44	6.82	37.1	98.0
6	18 13C2-PFOA	414.9 > 369.7	1.56e4	1.56e4	0.2642	1.000	3.92	3.85	10.0	37.8	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.86e3	8.86e3	0.2642	1.000	4.29	4.22	28.7	109	100.0

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_22, Date: 25-Apr-2018, Time: 21:05:51, ID: 1800702-04 CH-AT-1FB190-0418 0.26421, Description: CH-AT-1FB190-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-23.qld

Last Altered: Thursday, April 26, 2018 13:54:51 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:55:20 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_23, Date: 25-Apr-2018, Time: 21:17:21, ID: 1800702-05 CH-AT-1RW191-0418 0.25871, Description: CH-AT-1RW191-0418

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.14e1	7.54e3	0.2587		2.64	2.65	0.0436	0.156	
2	5 PFOA	413 > 368.7		1.49e4	0.2587		3.86				
3	7 PFOS	499 >79.9	2.30e1	7.54e3	0.2587		4.23	4.12	0.0875	0.314	
4	15 13C2-PFHxA	315 > 269.8	1.01e4	1.49e4	0.2587	0.689	3.08	3.01	6.79	38.1	98.6
5	16 13C2-PFDA	515.1 > 469.9	1.06e4	1.49e4	0.2587	0.696	4.43	4.44	7.12	39.6	102.4
6	18 13C2-PFOA	414.9 > 369.7	1.49e4	1.49e4	0.2587	1.000	3.92	3.85	10.0	38.7	100.0
7	19 13C4-PFOS	503.0 > 79.9	7.54e3	7.54e3	0.2587	1.000	4.29	4.22	28.7	111	100.0

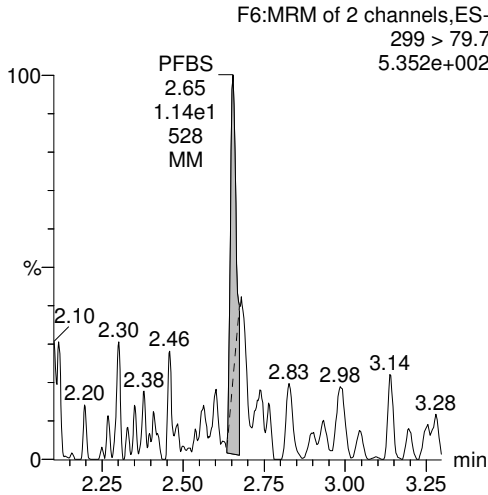
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-23.qld

Last Altered: Thursday, April 26, 2018 13:54:51 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:55:20 Pacific Daylight Time

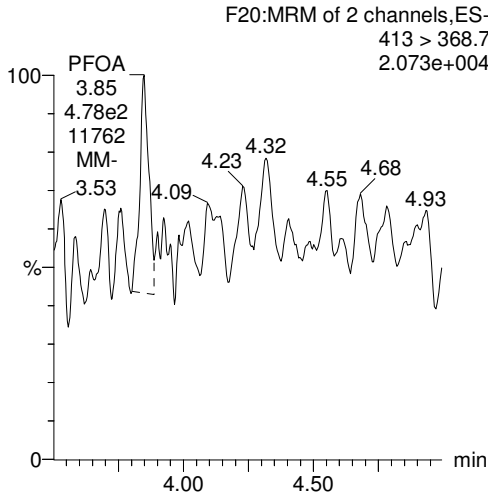
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_23, Date: 25-Apr-2018, Time: 21:17:21, ID: 1800702-05 CH-AT-1RW191-0418 0.25871, Description: CH-AT-1RW191-0418

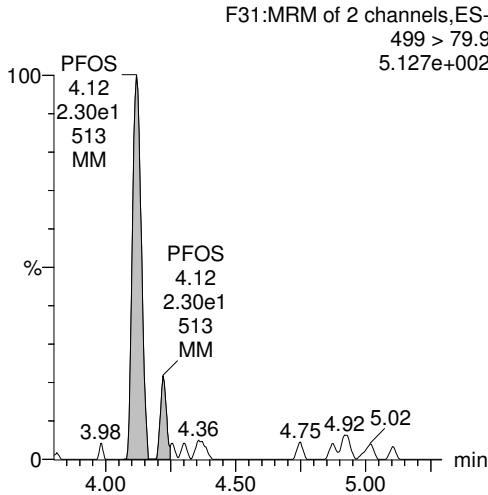
PFBS



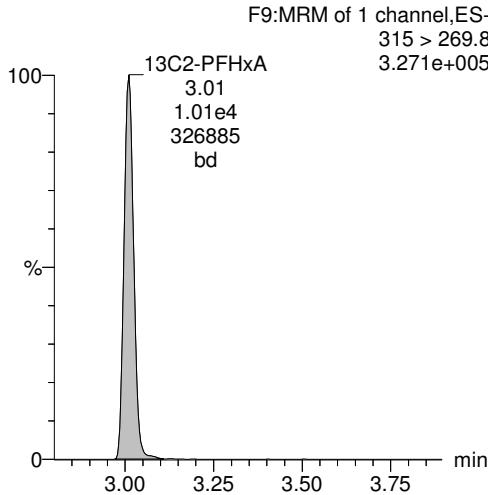
PFOA



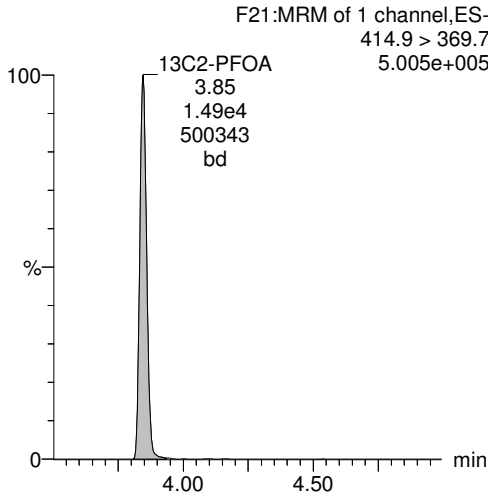
PFOS



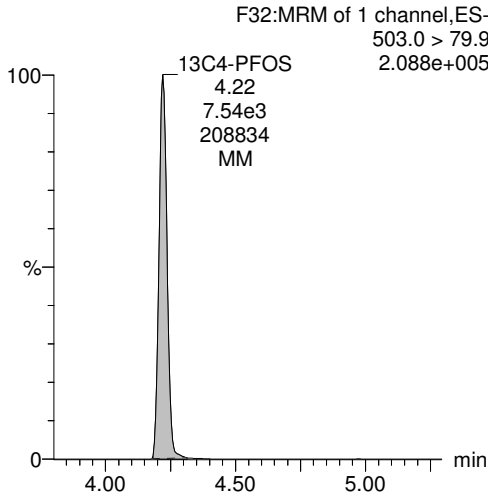
13C2-PFHxA



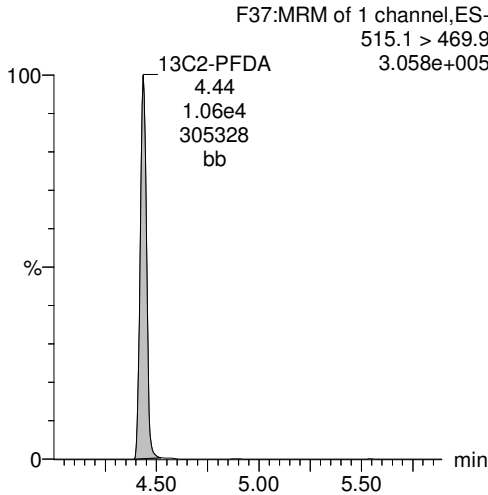
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-24.qld

Last Altered: Thursday, April 26, 2018 13:56:43 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:57:16 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_24, Date: 25-Apr-2018, Time: 21:28:50, ID: 1800702-06 CH-AT-1FB191-0418 0.25071, Description: CH-AT-1FB191-0418

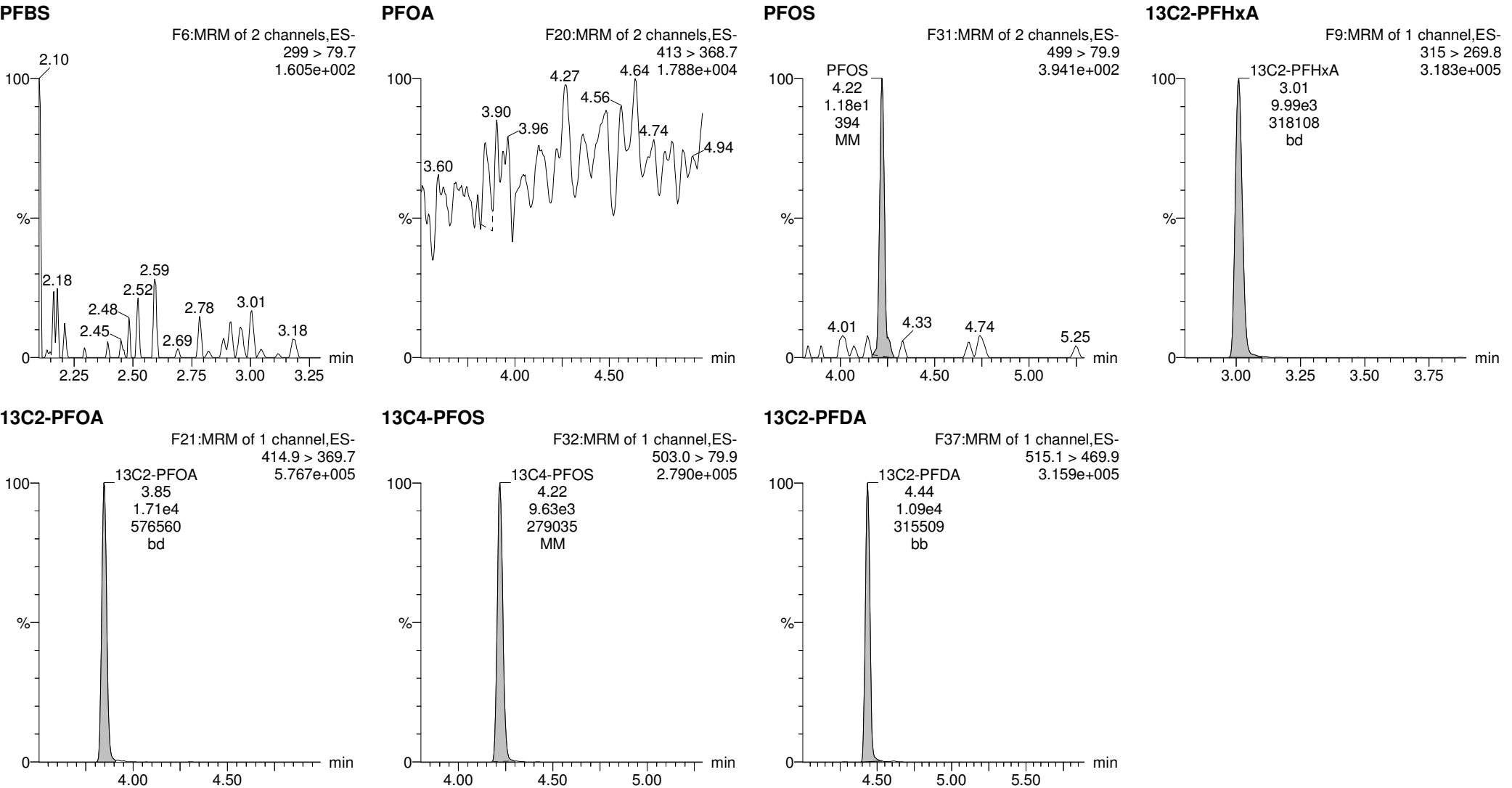
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.63e3	0.2507		2.64				
2	5 PFOA	413 > 368.7		1.71e4	0.2507		3.86				
3	7 PFOS	499 >79.9	1.18e1	9.63e3	0.2507		4.23	4.22	0.0353	0.131	
4	15 13C2-PFHxA	315 > 269.8	9.99e3	1.71e4	0.2507	0.689	3.08	3.01	5.84	33.9	84.9
5	16 13C2-PFDA	515.1 > 469.9	1.09e4	1.71e4	0.2507	0.696	4.43	4.44	6.40	36.7	92.0
6	18 13C2-PFOA	414.9 > 369.7	1.71e4	1.71e4	0.2507	1.000	3.92	3.85	10.0	39.9	100.0
7	19 13C4-PFOS	503.0 > 79.9	9.63e3	9.63e3	0.2507	1.000	4.29	4.22	28.7	114	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-24.qld

Last Altered: Thursday, April 26, 2018 13:56:43 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:57:16 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_24, Date: 25-Apr-2018, Time: 21:28:50, ID: 1800702-06 CH-AT-1FB191-0418 0.25071, Description: CH-AT-1FB191-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-25.qld

Last Altered: Thursday, April 26, 2018 13:58:09 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:58:36 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_25, Date: 25-Apr-2018, Time: 21:40:19, ID: 1800702-07 CH-AT-1RW192-0418 0.24234, Description: CH-AT-1RW192-0418

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.79e3	0.2423		2.64				
2	5 PFOA	413 > 368.7		1.69e4	0.2423		3.86				
3	7 PFOS	499 >79.9		8.79e3	0.2423		4.23				
4	15 13C2-PFHxA	315 > 269.8	1.03e4	1.69e4	0.2423	0.689	3.08	3.01	6.13	36.8	89.1
5	16 13C2-PFDA	515.1 > 469.9	1.05e4	1.69e4	0.2423	0.696	4.43	4.44	6.23	36.9	89.5
6	18 13C2-PFOA	414.9 > 369.7	1.69e4	1.69e4	0.2423	1.000	3.92	3.85	10.0	41.3	100.0
7	19 13C4-PFOS	503.0 > 79.9	8.79e3	8.79e3	0.2423	1.000	4.29	4.22	28.7	118	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-25.qld

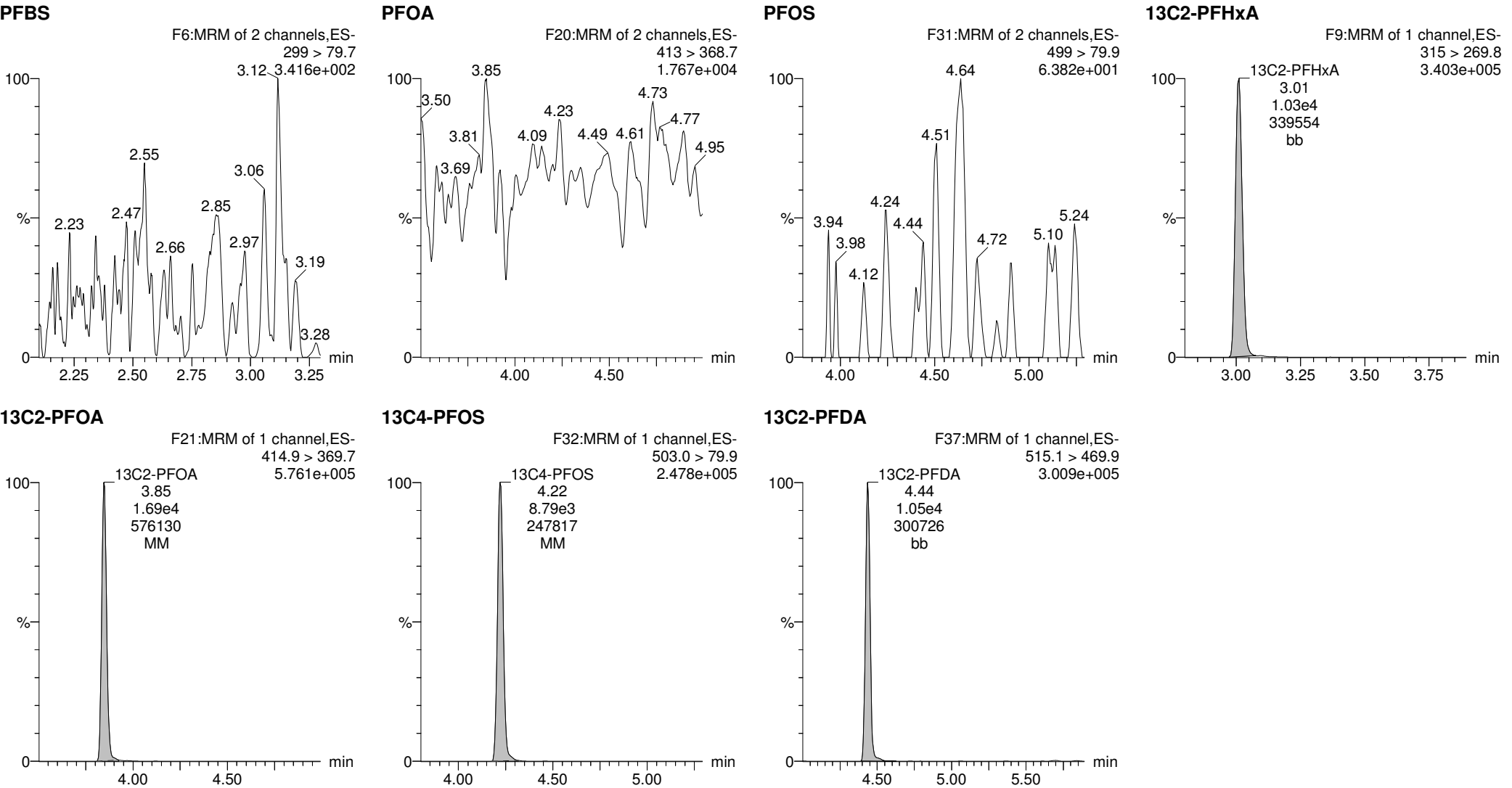
Last Altered: Thursday, April 26, 2018 13:58:09 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:58:36 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_25, Date: 25-Apr-2018, Time: 21:40:19, ID: 1800702-07 CH-AT-1RW192-0418 0.24234, Description: CH-AT-1RW192-0418



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-26.qld

Last Altered: Thursday, April 26, 2018 13:59:24 Pacific Daylight Time

Printed: Thursday, April 26, 2018 14:00:05 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_26, Date: 25-Apr-2018, Time: 21:51:50, ID: 1800702-08 CH-AT-1FB192-0418 0.25741, Description: CH-AT-1FB192-0418

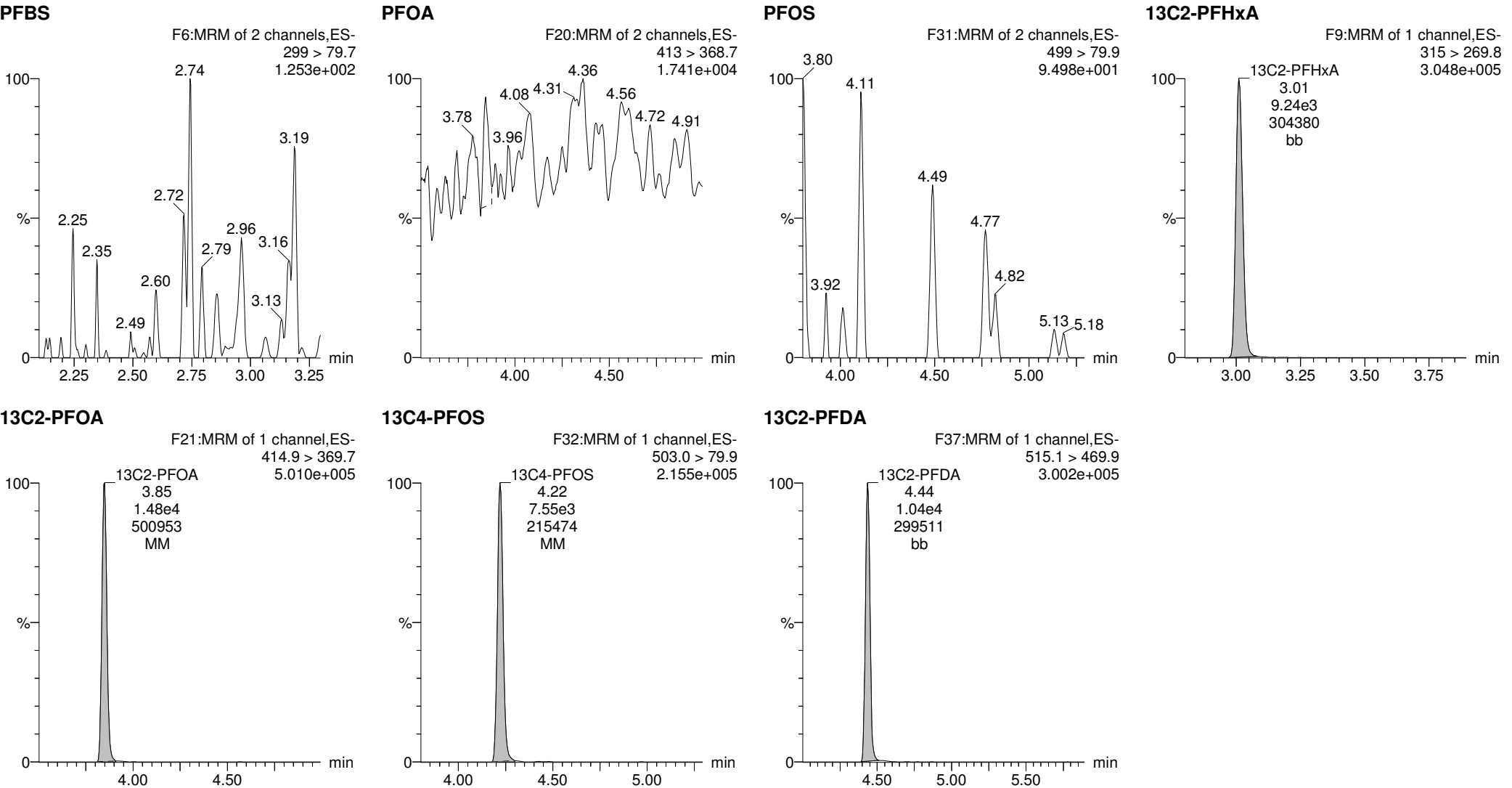
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		7.55e3	0.2574		2.64				
2	5 PFOA	413 > 368.7		1.48e4	0.2574		3.86				
3	7 PFOS	499 >79.9		7.55e3	0.2574		4.23				
4	15 13C2-PFHxA	315 > 269.8	9.24e3	1.48e4	0.2574	0.689	3.09	3.01	6.23	35.2	90.5
5	16 13C2-PFDA	515.1 > 469.9	1.04e4	1.48e4	0.2574	0.696	4.43	4.44	7.03	39.2	101.0
6	18 13C2-PFOA	414.9 > 369.7	1.48e4	1.48e4	0.2574	1.000	3.92	3.85	10.0	38.8	100.0
7	19 13C4-PFOS	503.0 > 79.9	7.55e3	7.55e3	0.2574	1.000	4.29	4.22	28.7	111	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-26.qld

Last Altered: Thursday, April 26, 2018 13:59:24 Pacific Daylight Time
Printed: Thursday, April 26, 2018 14:00:05 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_26, Date: 25-Apr-2018, Time: 21:51:50, ID: 1800702-08 CH-AT-1FB192-0418 0.25741, Description: CH-AT-1FB192-0418



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

ICAL

Quantify Compound Summary Report

Printed Thu Apr 26 12:08:57 2018

Compound 18: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	ICAL AREA	%AREA
1	ICV180425M1-1 PFC 537 ICV 18D2007	180425M1, Analyte	10	3.85	16919.41	16919.41	17154.92	101.392
2	IPA	180425M1, Analyte	10				17154.92	#DIV/0!
3	B8D0126-BS1 LFB 0.25	180425M1, Analyte	10	3.85	16395.59	16395.59	17154.92	104.6313
4	B8D0126-BLK1 LRB 0.25	180425M1, Analyte	10	3.85	15068.79	15068.79	17154.92	113.8441
5	B8D0126-MS1 LFSM 0.24781	180425M1, Analyte	10	3.84	15799.62	15799.62	17154.92	108.5781
6	B8D0126-MSD1 LFSMD 0.25344	180425M1, Analyte	10	3.85	15227.31	15227.31	17154.92	112.6589
7	1800702-01 CH-AT-1RW189-0418 0.254	180425M1, Analyte	10	3.85	15837.35	15837.35	17154.92	108.3194
8	1800702-02 CH-AT-1FB189-0418 0.255	180425M1, Analyte	10	3.85	16269.08	16269.08	17154.92	105.4449
9	1800702-03 CH-AT-1RW190-0418 0.252	180425M1, Analyte	10	3.85	15520.62	15520.62	17154.92	110.5298
10	1800702-04 CH-AT-1FB190-0418 0.264	180425M1, Analyte	10	3.85	15496.88	15496.88	17154.92	110.6992
11	1800702-05 CH-AT-1RW191-0418 0.258	180425M1, Analyte	10	3.85	14887.37	14887.37	17154.92	115.2314
12	1800702-06 CH-AT-1FB191-0418 0.250	180425M1, Analyte	10	3.85	17093.26	17093.26	17154.92	100.3607
13	1800702-07 CH-AT-1RW192-0418 0.242	180425M1, Analyte	10	3.85	16705.54	16705.54	17154.92	102.69
14	1800702-08 CH-AT-1FB192-0418 0.257	180425M1, Analyte	10	3.85	14723.55	14723.55	17154.92	116.5135
15	1800702-09 CH-AT-1RW193-0418 0.254	180425M1, Analyte	10	3.85	13735.37	13735.37	17154.92	124.896
16	1800702-10 CH-AT-1FB193-0418 0.243	180425M1, Analyte	10	3.85	17579.39	17579.39	17154.92	97.58544
17	IPA	180425M1, Analyte	10				17154.92	#DIV/0!
18	ST180425M1-10 PFC CS2 537 18D1815	180425M1, Analyte	10	3.85	18062.18	18062.18	17154.92	94.97701

Compound 19: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	ICAL AREA	% AREA
1 ICV180425M1-1 PFC 537 ICV 18D2007	180425M1	Analyte	28.7	4.22	9299.717	9299.717	9202.634	98.95607
2 IPA	180425M1	Analyte	28.7					
3 B8D0126-BS1 LFB 0.25	180425M1	Analyte	28.7	4.22	7355.846	7355.846	9202.634	125.1064
4 B8D0126-BLK1 LRB 0.25	180425M1	Analyte	28.7	4.22	8474.586	8474.586	9202.634	108.591
5 B8D0126-MS1 LFSM 0.24781	180425M1	Analyte	28.7	4.22	8870.528	8870.528	9202.634	103.7439
6 B8D0126-MSD1 LFSMD 0.25344	180425M1	Analyte	28.7	4.22	7673.65	7673.65	9202.634	119.9251
7 1800702-01 CH-AT-1RW189-0418 0.254	180425M1	Analyte	28.7	4.22	8965.396	8965.396	9202.634	102.6462
8 1800702-02 CH-AT-1FB189-0418 0.255	180425M1	Analyte	28.7	4.22	8053.719	8053.719	9202.634	114.2656
9 1800702-03 CH-AT-1RW190-0418 0.252	180425M1	Analyte	28.7	4.22	8937.313	8937.313	9202.634	102.9687
10 1800702-04 CH-AT-1FB190-0418 0.264	180425M1	Analyte	28.7	4.22	8772.155	8772.155	9202.634	104.9073
11 1800702-05 CH-AT-1RW191-0418 0.258	180425M1	Analyte	28.7	4.22	7483.5	7483.5	9202.634	122.9723
12 1800702-06 CH-AT-1FB191-0418 0.250	180425M1	Analyte	28.7	4.22	9556.66	9556.66	9202.634	96.29551
13 1800702-07 CH-AT-1RW192-0418 0.242	180425M1	Analyte	28.7	4.22	8728.962	8728.962	9202.634	105.4264
14 1800702-08 CH-AT-1FB192-0418 0.257	180425M1	Analyte	28.7	4.22	7484.821	7484.821	9202.634	122.9506
15 1800702-09 CH-AT-1RW193-0418 0.254	180425M1	Analyte	28.7	4.22	8619.093	8619.093	9202.634	106.7703
16 1800702-10 CH-AT-1FB193-0418 0.243	180425M1	Analyte	28.7	4.22	9753.654	9753.654	9202.634	94.35063
17 IPA	180425M1	Analyte	28.7					
18 ST180425M1-10 PFC CS2 537 18D1815	180425M1	Analyte	28.7	4.22	10143.54	10143.54	9202.634	90.72408

LC Calibration Standards Review Checklist Q4

Calibration ID:	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	Other
<u>ST18042SM1-10</u>	<u>LMH</u>	☒	☒	☒	☒	☒	<u>NA</u>
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐

NA AR 4/26/18

Full Mass Cal. Date: 4/19/18

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Instrument Blank Saved: ☒

IIS Area Saved: ☒

Reviewed By: dm 4/26/18

Initials/Date

Comments:

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-30_B.qld

Last Altered: Thursday, April 26, 2018 16:17:11 Pacific Daylight Time
 Printed: Thursday, April 26, 2018 16:18:00 Pacific Daylight Time

Jim 4/26/18

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Sample: 180425M1_30, Date: 25-Apr-2018, Time: 22:37:37, ID: ST180425M1-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	PFBS	299 > 79.7	8.07e3	1.01e4	1.0000		2.64	2.66	22.8	21.3	96.3
5	PFOA	413 > 368.7	4.26e4	1.81e4	1.0000		3.86	3.85	23.6	24.4	97.5
7	PFOS	499 > 79.9	8.17e3	1.01e4	1.0000		4.23	4.22	23.1	21.4	92.5
15	13C2-PFHxA	315 > 269.8	1.23e4	1.81e4	1.0000	0.689	3.09	3.01	6.80	9.88	98.8
16	13C2-PFDA	515.1 > 469.9	1.23e4	1.81e4	1.0000	0.696	4.43	4.44	6.80	9.77	97.7
18	13C2-PFOA	414.9 > 369.7	1.81e4	1.81e4	1.0000	1.000	3.92	3.85	10.0	10.0	100.0
19	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.0000	1.000	4.29	4.22	28.7	28.7	100.0

Dataset: Untitled

Last Altered: Thursday, April 26, 2018 16:20:42 Pacific Daylight Time

Printed: Thursday, April 26, 2018 16:21:06 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	180425M1_13	ICV180425M1-1 PFC 537 ICV 18D2007	25-Apr-18	19:22:38
2	180425M1_14	IPA	25-Apr-18	19:34:06
3	180425M1_15	B8D0126-BS1 LFB 0.25	25-Apr-18	19:45:32
4	180425M1_16	B8D0126-BLK1 LRB 0.25	25-Apr-18	19:56:59
5	180425M1_17	B8D0126-MS1 LFSM 0.24781	25-Apr-18	20:08:27
6	180425M1_18	B8D0126-MSD1 LFSMD 0.25344	25-Apr-18	20:19:57
7	180425M1_19	1800702-01 CH-AT-1RW189-0418 0.25429	25-Apr-18	20:31:24
8	180425M1_20	1800702-02 CH-AT-1FB189-0418 0.25563	25-Apr-18	20:42:54
9	180425M1_21	1800702-03 CH-AT-1RW190-0418 0.25276	25-Apr-18	20:54:21
10	180425M1_22	1800702-04 CH-AT-1FB190-0418 0.26421	25-Apr-18	21:05:51
11	180425M1_23	1800702-05 CH-AT-1RW191-0418 0.25871	25-Apr-18	21:17:21
12	180425M1_24	1800702-06 CH-AT-1FB191-0418 0.25071	25-Apr-18	21:28:50
13	180425M1_25	1800702-07 CH-AT-1RW192-0418 0.24234	25-Apr-18	21:40:19
14	180425M1_26	1800702-08 CH-AT-1FB192-0418 0.25741	25-Apr-18	21:51:50
15	180425M1_27	1800702-09 CH-AT-1RW193-0418 0.25453	25-Apr-18	22:03:17
16	180425M1_28	1800702-10 CH-AT-1FB193-0418 0.24305	25-Apr-18	22:14:43
17	180425M1_29	IPA	25-Apr-18	22:26:10
18	180425M1_30	ST180425M1-10 PFC CS2 537 18D1815	25-Apr-18	22:37:37

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-30_B.qld

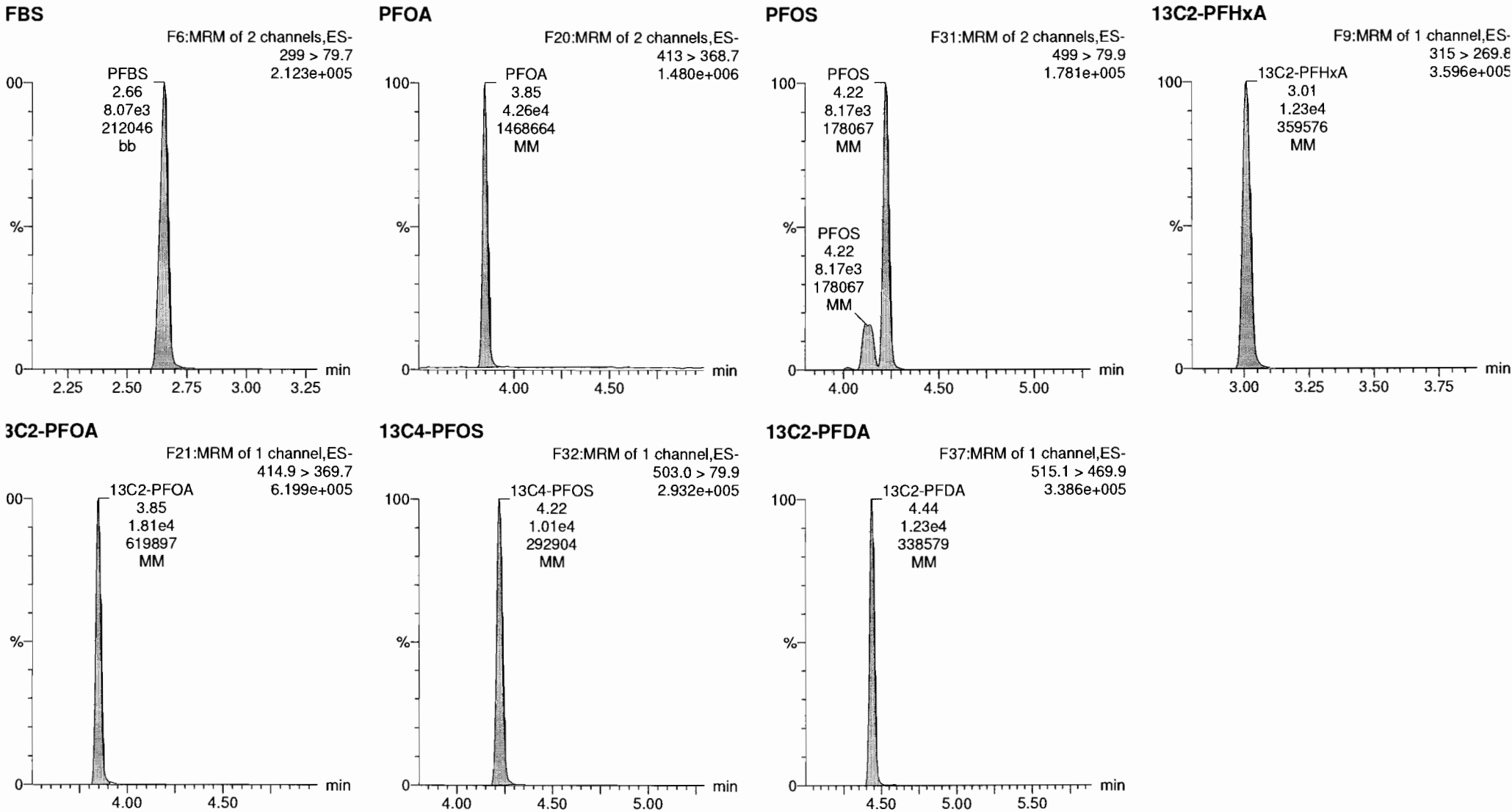
Last Altered: Thursday, April 26, 2018 16:17:11 Pacific Daylight Time

Printed: Thursday, April 26, 2018 16:18:00 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Sample: 180425M1_30, Date: 25-Apr-2018, Time: 22:37:37, ID: ST180425M1-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815



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

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 14:57:23 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Compound name: PFBS

Coefficient of Determination: $R^2 = 0.999152$

Calibration curve: $-0.00023982 * x^2 + 1.07703 * x$

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

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

AD 4/26/18

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180425M1_3	Standard	0.443	2.69	184.368	8570.421	0.617	0.6	29.6	NO	0.999	NO	MM
2	2 180425M1_4	Standard	0.885	2.69	339.813	8460.754	1.153	1.1	21.0	NO	0.999	NO	MM
3	3 180425M1_5	Standard	1.770	2.66	601.331	9797.274	1.762	1.6	-7.6	NO	0.999	NO	MM
4	4 180425M1_6	Standard	4.420	2.66	1587.215	9708.601	4.692	4.4	-1.3	NO	0.999	NO	MM
5	5 180425M1_7	Standard	8.850	2.66	3046.636	9920.870	8.814	8.2	-7.4	NO	0.999	NO	MM
6	6 180425M1_8	Standard	22.100	2.66	7593.539	9315.014	23.396	21.8	-1.2	NO	0.999	NO	MM
7	7 180425M1_9	Standard	44.200	2.66	15396.681	9112.330	48.493	45.5	2.9	NO	0.999	NO	MM
8	8 180425M1_10	Standard	66.300	2.65	22610.658	9207.239	70.480	66.4	0.2	NO	0.999	NO	MM
9	9 180425M1_11	Standard	88.400	2.65	30291.537	9377.523	92.708	87.8	-0.7	NO	0.999	NO	MM

Compound name: PFOA

Coefficient of Determination: $R^2 = 0.998949$

Calibration curve: $0.966768 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

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

↓AP 4/26/18

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180425M1_3	Standard	0.500	3.88	796.064	15969.096	0.499	0.5	3.1	NO	0.999	NO	bb
2	2 180425M1_4	Standard	1.000	3.88	1699.550	16718.566	1.017	1.1	5.2	NO	0.999	NO	MM
3	3 180425M1_5	Standard	2.000	3.85	3711.874	17904.262	2.073	2.1	7.2	NO	0.999	NO	bb
4	4 180425M1_6	Standard	5.000	3.85	8279.867	16705.125	4.956	5.1	2.5	NO	0.999	NO	bb
5	5 180425M1_7	Standard	10.000	3.85	17139.666	18147.477	9.445	9.8	-2.3	NO	0.999	NO	bb
6	6 180425M1_8	Standard	25.000	3.85	42993.453	18391.389	23.377	24.2	-3.3	NO	0.999	NO	MM
7	7 180425M1_9	Standard	50.000	3.85	88243.258	17288.604	51.041	52.8	5.6	NO	0.999	NO	MM
8	8 180425M1_10	Standard	75.000	3.85	118936.484	16352.584	72.733	75.2	0.3	NO	0.999	NO	bb
9	9 180425M1_11	Standard	100.000	3.85	160439.688	16989.059	94.437	97.7	-2.3	NO	0.999	NO	MM

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time
Printed: Thursday, April 26, 2018 14:57:23 Pacific Daylight Time

Compound name: PFOS

Coefficient of Determination: $R^2 = 0.997657$

Calibration curve: $0.000184413 * x^2 + 1.07766 * x$

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

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

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180425M1_3	Standard	0.464	4.25	156.313	8570.421	0.523	0.5	4.7	NO	0.998	NO	db
2	2 180425M1_4	Standard	0.925	4.25	344.442	8460.754	1.168	1.1	17.2	NO	0.998	NO	MM
3	3 180425M1_5	Standard	1.850	4.22	719.462	9797.274	2.108	2.0	5.7	NO	0.998	NO	MM
4	4 180425M1_6	Standard	4.625	4.22	1491.318	9708.601	4.409	4.1	-11.6	NO	0.998	NO	MM
5	5 180425M1_7	Standard	9.250	4.22	3242.169	9920.870	9.379	8.7	-6.0	NO	0.998	NO	MM
6	6 180425M1_8	Standard	23.100	4.22	8234.826	9315.014	25.372	23.4	1.5	NO	0.998	NO	MM
7	7 180425M1_9	Standard	46.200	4.22	15482.118	9112.330	48.762	44.9	-2.8	NO	0.998	NO	MM
8	8 180425M1_10	Standard	69.300	4.22	25802.936	9207.239	80.431	73.7	6.4	NO	0.998	NO	MM
9	9 180425M1_11	Standard	92.400	4.22	32087.045	9377.523	98.203	89.7	-2.9	NO	0.998	NO	MM

Compound name: 13C2-PFHxA

Response Factor: 0.6886

RRF SD: 0.0385874, Relative SD: 5.60375

Response type: Internal Std (Ref 18), 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 180425M1_3	Standard	10.000	3.05	11938.599	15969.096	7.476	10.9	8.6	NO		NO	bd
2	2 180425M1_4	Standard	10.000	3.05	11050.317	16718.566	6.610	9.6	-4.0	NO		NO	bd
3	3 180425M1_5	Standard	10.000	3.01	12432.515	17904.262	6.944	10.1	0.8	NO		NO	MM
4	4 180425M1_6	Standard	10.000	3.01	11923.019	16705.125	7.137	10.4	3.7	NO		NO	MM
5	5 180425M1_7	Standard	10.000	3.01	11122.331	18147.477	6.129	8.9	-11.0	NO		NO	bb
6	6 180425M1_8	Standard	10.000	3.01	12310.778	18391.389	6.694	9.7	-2.8	NO		NO	bb
7	7 180425M1_9	Standard	10.000	3.01	12034.856	17288.604	6.961	10.1	1.1	NO		NO	MM
8	8 180425M1_10	Standard	10.000	3.01	11731.204	16352.584	7.174	10.4	4.2	NO		NO	bd
9	9 180425M1_11	Standard	10.000	3.01	11636.468	16989.059	6.849	9.9	-0.5	NO		NO	bd

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time
Printed: Thursday, April 26, 2018 14:57:23 Pacific Daylight Time

Compound name: 13C2-PFDA

Response Factor: 0.695839

RRF SD: 0.0485416, Relative SD: 6.97597

Response type: Internal Std (Ref 18), 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 180425M1_3	Standard	10.000	4.46	11620.116	15969.096	7.277	10.5	4.6	NO		NO	bb
2	2 180425M1_4	Standard	10.000	4.46	10238.659	16718.566	6.124	8.8	-12.0	NO		NO	MM
3	3 180425M1_5	Standard	10.000	4.44	12742.152	17904.262	7.117	10.2	2.3	NO		NO	bb
4	4 180425M1_6	Standard	10.000	4.44	12190.665	16705.125	7.298	10.5	4.9	NO		NO	bb
5	5 180425M1_7	Standard	10.000	4.44	12492.804	18147.477	6.884	9.9	-1.1	NO		NO	bb
6	6 180425M1_8	Standard	10.000	4.44	11941.006	18391.389	6.493	9.3	-6.7	NO		NO	bb
7	7 180425M1_9	Standard	10.000	4.44	11276.231	17288.604	6.522	9.4	-6.3	NO		NO	MM
8	8 180425M1_10	Standard	10.000	4.44	12424.822	16352.584	7.598	10.9	9.2	NO		NO	bb
9	9 180425M1_11	Standard	10.000	4.44	12424.471	16989.059	7.313	10.5	5.1	NO		NO	bb

Compound name: 13C2-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 18), 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 180425M1_3	Standard	10.000	3.88	15969.096	15969.096	10.000	10.0	0.0	NO		NO	bb
2	2 180425M1_4	Standard	10.000	3.88	16718.566	16718.566	10.000	10.0	0.0	NO		NO	bd
3	3 180425M1_5	Standard	10.000	3.85	17904.262	17904.262	10.000	10.0	0.0	NO		NO	MM
4	4 180425M1_6	Standard	10.000	3.85	16705.125	16705.125	10.000	10.0	0.0	NO		NO	MM
5	5 180425M1_7	Standard	10.000	3.85	18147.477	18147.477	10.000	10.0	0.0	NO		NO	bd
6	6 180425M1_8	Standard	10.000	3.85	18391.389	18391.389	10.000	10.0	0.0	NO		NO	bd
7	7 180425M1_9	Standard	10.000	3.85	17288.604	17288.604	10.000	10.0	0.0	NO		NO	bd
8	8 180425M1_10	Standard	10.000	3.85	16352.584	16352.584	10.000	10.0	0.0	NO		NO	bd
9	9 180425M1_11	Standard	10.000	3.85	16989.059	16989.059	10.000	10.0	0.0	NO		NO	MM

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 14:57:23 Pacific Daylight Time

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 19), 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 180425M1_3	Standard	28.700	4.25	8570.421	8570.421	28.700	28.7	0.0	NO		NO	bd
2	2 180425M1_4	Standard	28.700	4.25	8460.754	8460.754	28.700	28.7	0.0	NO		NO	MM
3	3 180425M1_5	Standard	28.700	4.22	9797.274	9797.274	28.700	28.7	0.0	NO		NO	MM
4	4 180425M1_6	Standard	28.700	4.22	9708.601	9708.601	28.700	28.7	0.0	NO		NO	MM
5	5 180425M1_7	Standard	28.700	4.22	9920.870	9920.870	28.700	28.7	0.0	NO		NO	MM
6	6 180425M1_8	Standard	28.700	4.22	9315.014	9315.014	28.700	28.7	0.0	NO		NO	MM
7	7 180425M1_9	Standard	28.700	4.22	9112.330	9112.330	28.700	28.7	0.0	NO		NO	MM
8	8 180425M1_10	Standard	28.700	4.22	9207.239	9207.239	28.700	28.7	0.0	NO		NO	MM
9	9 180425M1_11	Standard	28.700	4.22	9377.523	9377.523	28.700	28.7	0.0	NO		NO	MM

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 14:57:23 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_3, Date: 25-Apr-2018, Time: 17:28:03, ID: ST180425M1-1 PFC CS-3 537 18D1810, Description: PFC CS-3 18D1810

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBS	19	0.9992	NO	
2	5 PFOA	18	0.9989	NO	
3	7 PFOS	19	0.9977	NO	
4	15 13C2-PFHxA	18		NO	5.604
5	16 13C2-PFDA	18		NO	6.976
6	18 13C2-PFOA	18		NO	0.000
7	19 13C4-PFOS	19		NO	0.000

Dataset: Untitled

Last Altered: Thursday, April 26, 2018 12:37:42 Pacific Daylight Time

Printed: Thursday, April 26, 2018 12:38:11 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Compound name: PFBS

	Name	ID		Acq.Date	Acq.Time
1	180425M1_2	IPA		25-Apr-18	17:16:41
2	180425M1_3	ST180425M1-1 PFC CS-3 537 18D1810	✓	25-Apr-18	17:28:03
3	180425M1_4	ST180425M1-2 PFC CS-2 537 18D1811	✓	25-Apr-18	17:39:30
4	180425M1_5	ST180425M1-3 PFC CS-1 537 18D1812	✓	25-Apr-18	17:50:57
5	180425M1_6	ST180425M1-4 PFC CS0 537 18D1813	✓	25-Apr-18	18:02:24
6	180425M1_7	ST180425M1-5 PFC CS1 537 18D1814	✓	25-Apr-18	18:13:51
7	180425M1_8	ST180425M1-6 PFC CS2 537 18D1815	✓	25-Apr-18	18:25:18
8	180425M1_9	ST180425M1-7 PFC CS3 537 18D1816	✓	25-Apr-18	18:36:45
9	180425M1_10	ST180425M1-8 PFC CS4 537 18D1817	✓	25-Apr-18	18:48:12
10	180425M1_11	ST180425M1-9 PFC CS5 537 18D1818	✓	25-Apr-18	18:59:41
11	180425M1_12	IPA		25-Apr-18	19:11:11
12	180425M1_13	ICV180425M1-1 PFC 537 ICV 18D2007	✓	25-Apr-18	19:22:38

ical RPD

Compound 18: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flags
1 ST180425M1-1 PFC CS-3 537 18D1810	180425M1_3	Standard	10	3.88	15969.10	15969.10	10	bb
2 ST180425M1-2 PFC CS-2 537 18D1811	180425M1_4	Standard	10	3.88	16718.57	16718.57	10	bd
3 ST180425M1-3 PFC CS-1 537 18D1812	180425M1_5	Standard	10	3.85	17873.09	17873.09	10	bd
4 ST180425M1-4 PFC CS0 537 18D1813	180425M1_6	Standard	10	3.85	16689.20	16689.20	10	bd
5 ST180425M1-5 PFC CS1 537 18D1814	180425M1_7	Standard	10	3.85	18147.48	18147.48	10	bd
6 ST180425M1-6 PFC CS2 537 18D1815	180425M1_8	Standard	10	3.85	18391.39	18391.39	10	bd
7 ST180425M1-7 PFC CS3 537 18D1816	180425M1_9	Standard	10	3.85	17288.60	17288.60	10	bd
8 ST180425M1-8 PFC CS4 537 18D1817	180425M1_10	Standard	10	3.85	16352.58	16352.58	10	bd
9 ST180425M1-9 PFC CS5 537 18D1818	180425M1_11	Standard	10	3.85	16964.29	16964.29	10	bd
			Average		High	18391.39	RPD	
			17154.92		Low	15969.10	14.10	

Compound 19: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flags
1 ST180425M1-1 PFC CS-3 537 18D1810	180425M1_3	Standard	28.7	4.25	8570.42	8570.42	28.7	bd
2 ST180425M1-2 PFC CS-2 537 18D1811	180425M1_4	Standard	28.7	4.25	8347.63	8347.63	28.7	MM
3 ST180425M1-3 PFC CS-1 537 18D1812	180425M1_5	Standard	28.7	4.22	9732.03	9732.03	28.7	MM
4 ST180425M1-4 PFC CS0 537 18D1813	180425M1_6	Standard	28.7	4.22	9578.13	9578.13	28.7	MM
5 ST180425M1-5 PFC CS1 537 18D1814	180425M1_7	Standard	28.7	4.22	9854.85	9854.85	28.7	bb
6 ST180425M1-6 PFC CS2 537 18D1815	180425M1_8	Standard	28.7	4.22	9258.86	9258.86	28.7	MM
7 ST180425M1-7 PFC CS3 537 18D1816	180425M1_9	Standard	28.7	4.22	9070.64	9070.64	28.7	MM
8 ST180425M1-8 PFC CS4 537 18D1817	180425M1_10	Standard	28.7	4.22	9135.42	9135.42	28.7	bb
9 ST180425M1-9 PFC CS5 537 18D1818	180425M1_11	Standard	28.7	4.22	9275.74	9275.74	28.7	MM
			Average		High	9854.85	RPD	
			9202.63		Low	8347.63	16.56	

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 11:38:12 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

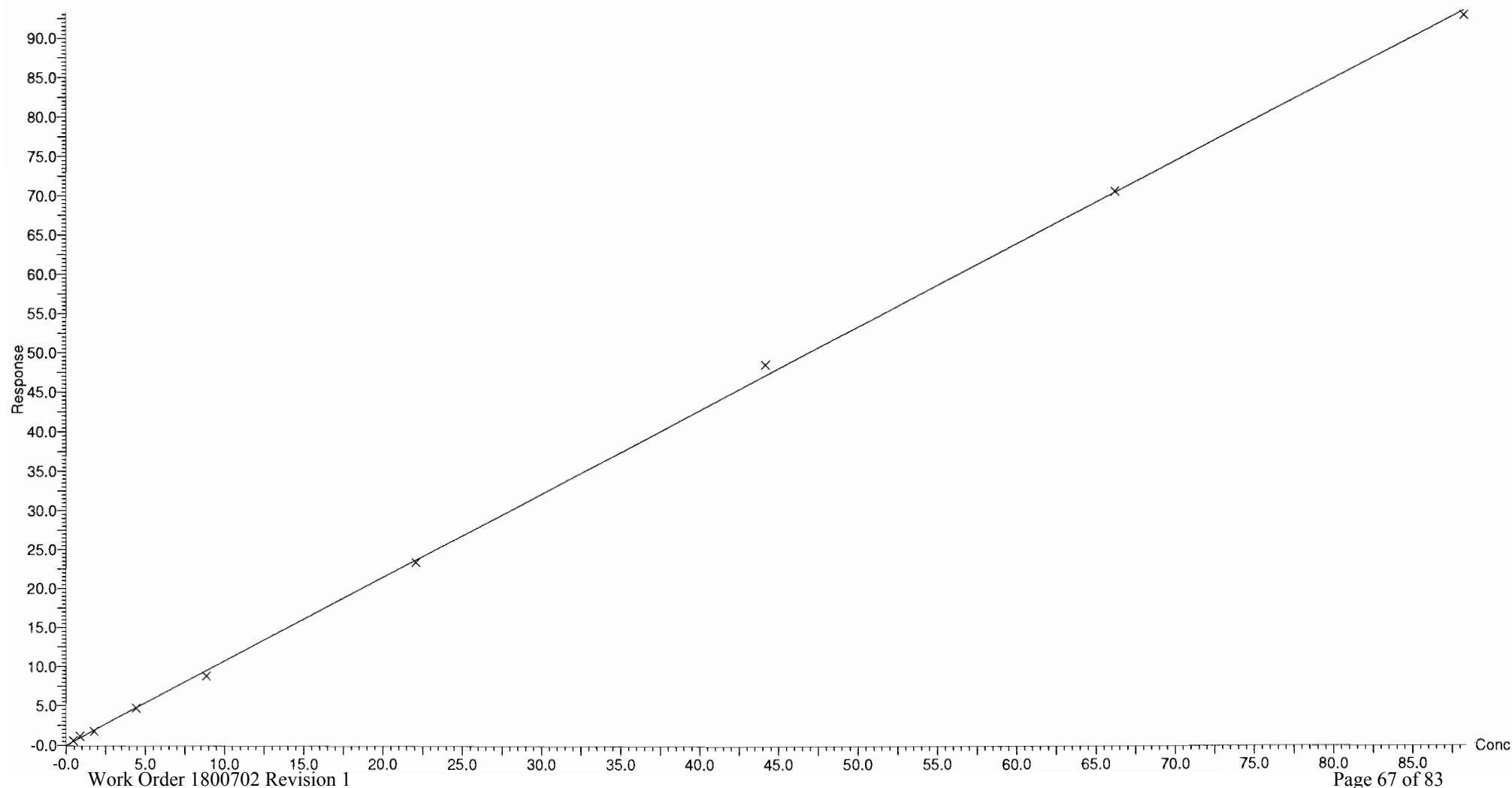
Compound name: PFBS

Coefficient of Determination: $R^2 = 0.999152$

Calibration curve: $-0.00023982 * x^2 + 1.07703 * x$

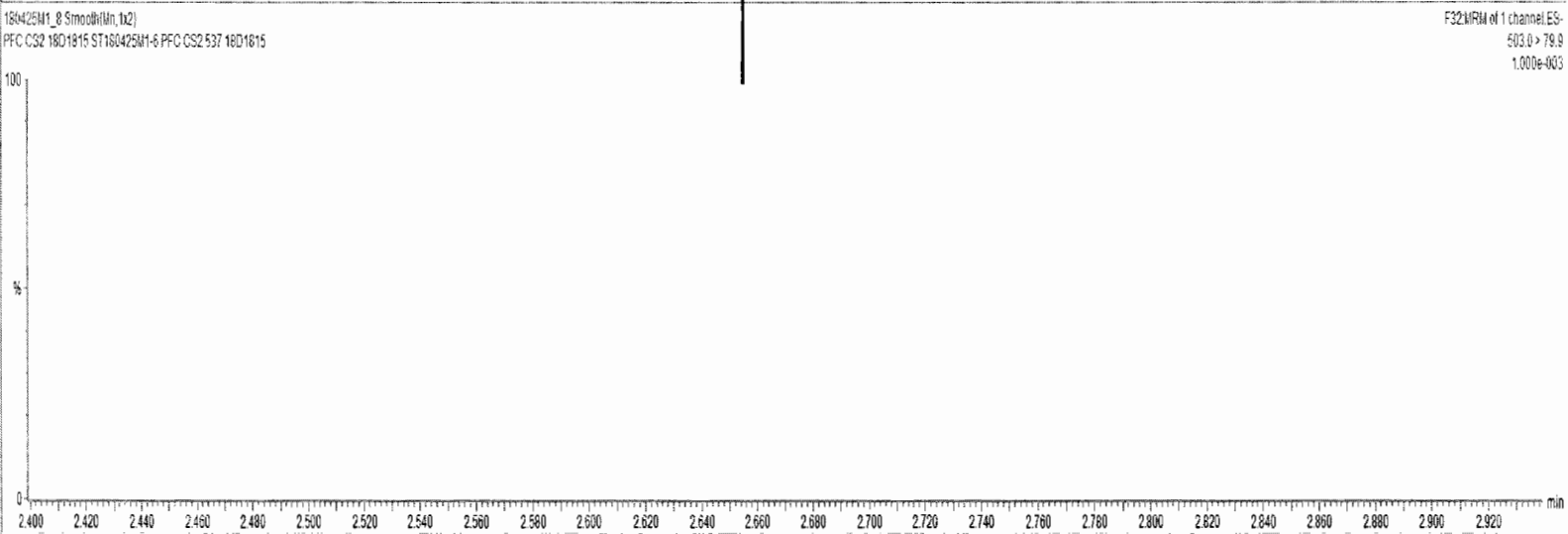
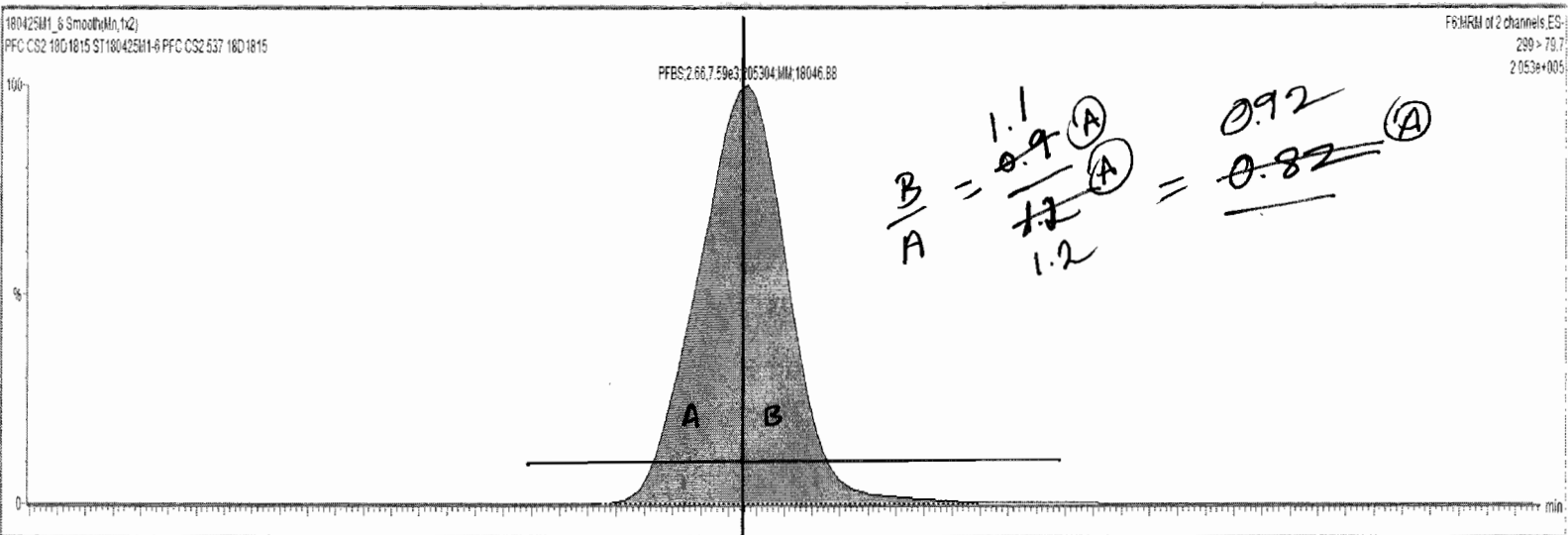
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

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



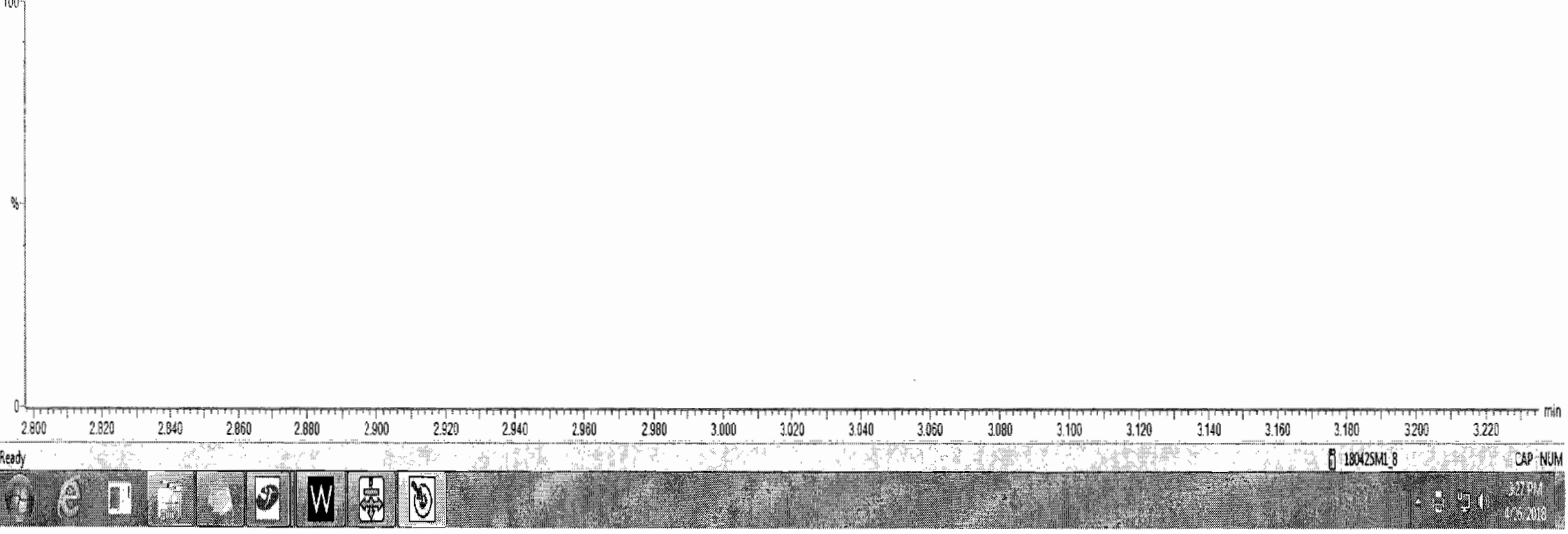
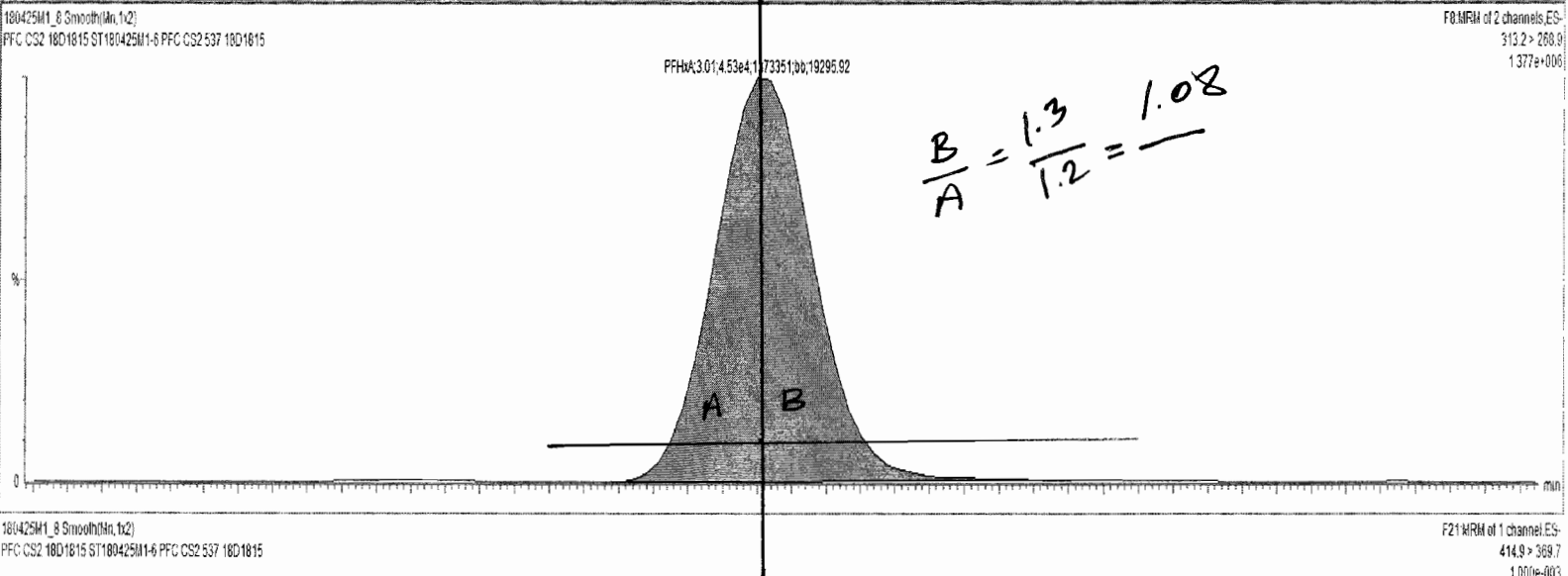
	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	SA	RA	YAN	RRT	Acq Date	Acq Time	1 st Chz Noise ID	Sample Text	Factor1	SW1	Cal File	>MOL
1	PFBS	21.826824	0.00276	96.8		7.594e3	2.66	1	19				0.829	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
2	PFHxA	23.223700	0.00271	92.9		4.534e4	3.01	2	18				0.782	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
3	PFHpA	23.020416	0.000348	92.1		3.514e4	3.46	3	18				0.900	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
4	PFHxS	23.963667	0.0112	104.8		6.121e3	3.57	4	19				0.846	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
5	PFDA	24.180513	0.0332	96.7		4.299e4	3.85	5	18				1.001	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
6	PFNA	24.410278	0.00454	97.6		4.167e4	4.17	6	18				1.083	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
7	PFOS	23.449458	0.000245	101.5		8.235e3	4.22	7	19				1.000	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
8	PFDA	22.728937	0.00327	90.9		4.493e4	4.44	8	18				1.154	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		NO
9	N-AlaFOSAA	23.200894	0.00147	92.8		1.795e4	4.55	9	20				1.001	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
10	N-EFOSAA	25.283842	0.00321	101.2		1.430e4	4.67	10	20				1.026	25-Apr-18	18:25:18	ST180425M...	PFC CS2 18D1815	1.0	1.00		YES

Ⓐ incorrect entry
AR 4/26/18



180425M1_8 - ST180425M1-6 PFC CS2 537 18D1815 - PFC CS2 18D1815

Name	Case	DL	%Rec	EMPC	Alt Resp	RPF	RT	#	IS#	RA	YN	RRT	Acq Date	Acq Time	1 st Ch Noise	D	Sample Text	Factor1	SWR	Cal File	>MCL
1 PFBS	21.828824	0.00278	96.8		7.59463		2.66	1	19			0.629	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
2 PFHxA	23.223704	0.00271	92.9		4.53464		3.01	2	18			0.782	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
3 PFHxA	23.020416	0.00248	92.1		3.51464		3.46	3	18			0.900	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
4 PFHxS	23.903667	0.0112	104.8		6.12163		3.57	4	18			0.846	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
5 PFDA	24.180513	0.0332	96.7		4.29864		3.85	5	18			1.001	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
6 PFNA	24.410279	0.00454	97.6		4.16764		4.17	6	18			1.083	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
7 PFOS	23.445458	0.000245	101.5		8.23563		4.22	7	19			1.000	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
8 PFDA	22.726937	0.00327	90.9		4.49364		4.44	8	18			1.154	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		NO
9 N-HPFOSAA	23.200984	0.00147	92.8		1.79564		4.55	9	20			1.001	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES
10 N-HPFOSAA	25.293842	0.00321	101.2		1.43064		4.67	10	20			1.026	25-Apr-18	18:25:18		ST180425M...	PFC CS2 18D1815	1.0	1.00		YES



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 11:38:12 Pacific Daylight Time

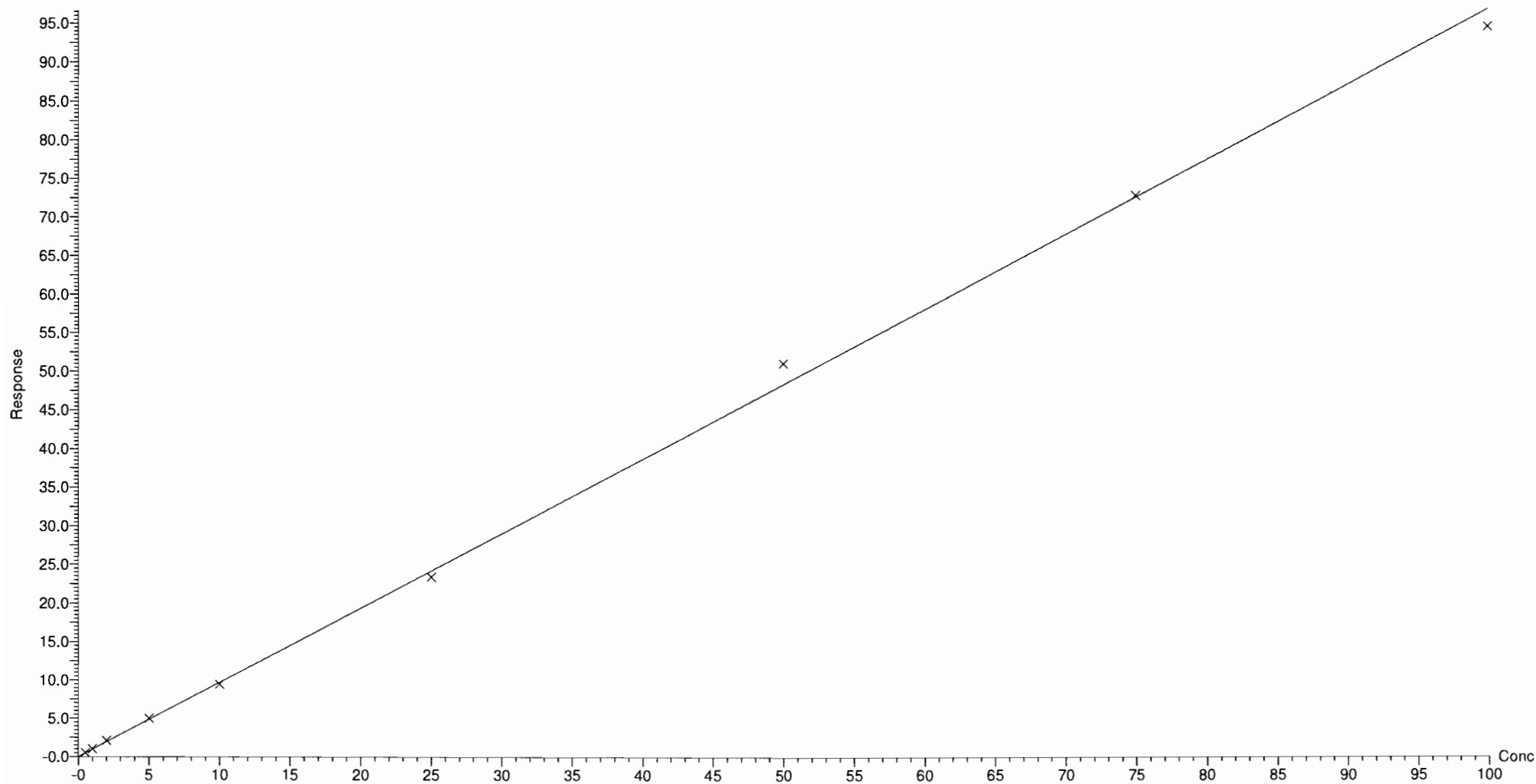
Compound name: PFOA

Coefficient of Determination: $R^2 = 0.998949$

Calibration curve: $0.966768 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

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



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

Printed: Thursday, April 26, 2018 11:38:12 Pacific Daylight Time

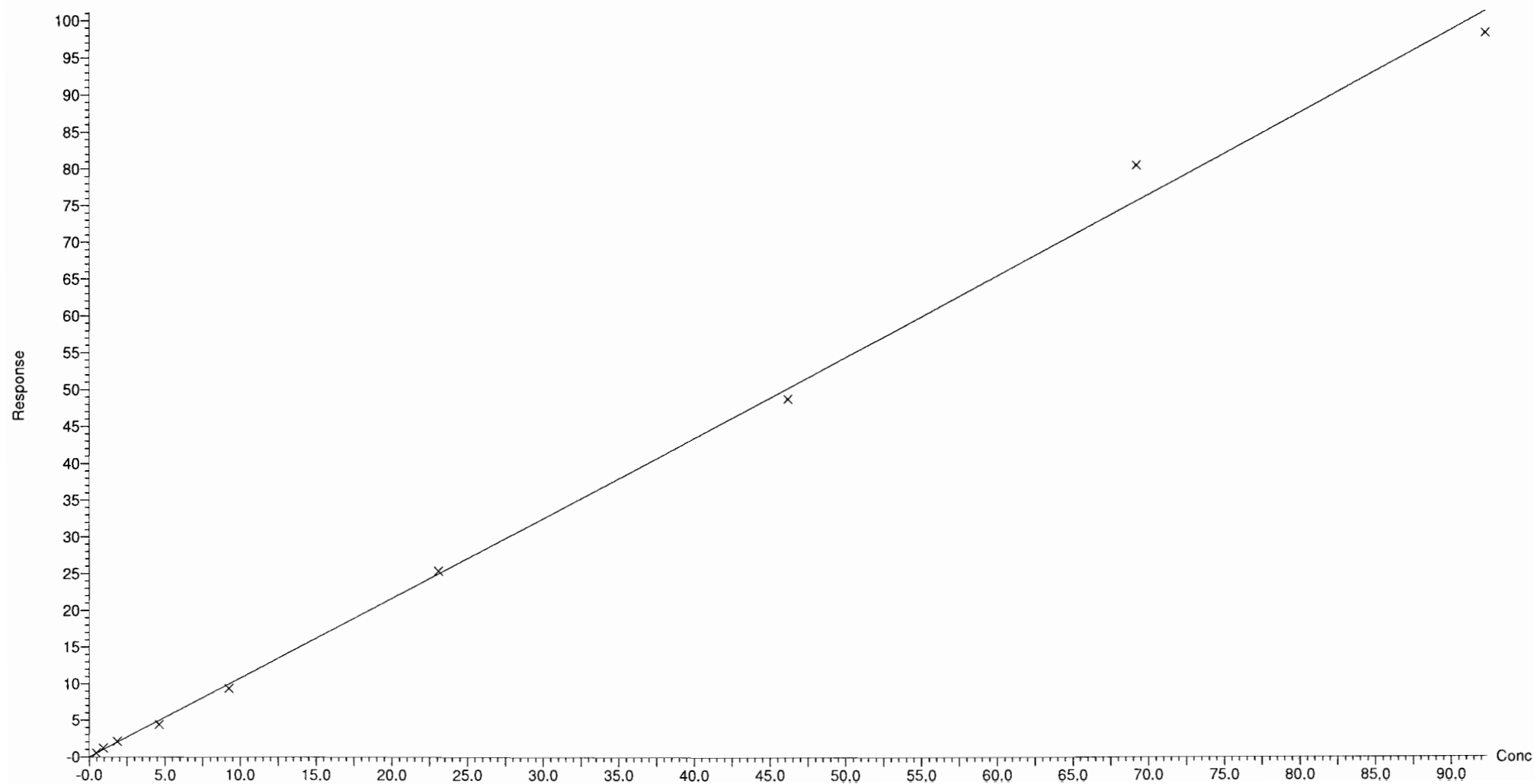
Compound name: PFOS

Coefficient of Determination: $R^2 = 0.997657$

Calibration curve: $0.000184413 * x^2 + 1.07766 * x$

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

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



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

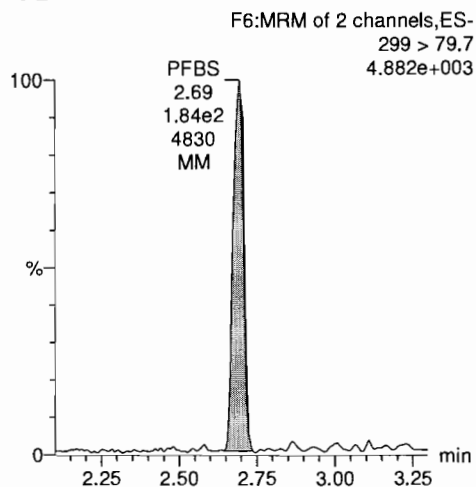
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

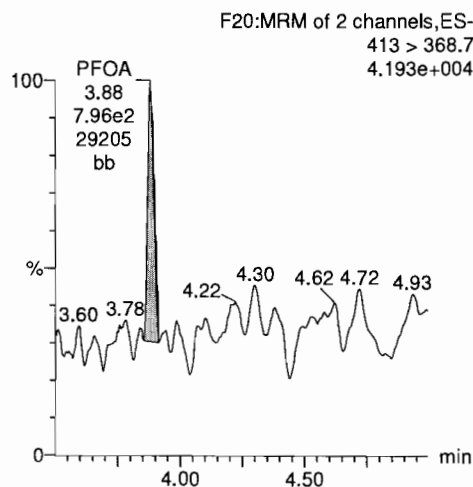
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_3, Date: 25-Apr-2018, Time: 17:28:03, ID: ST180425M1-1 PFC CS-3 537 18D1810, Description: PFC CS-3 18D1810

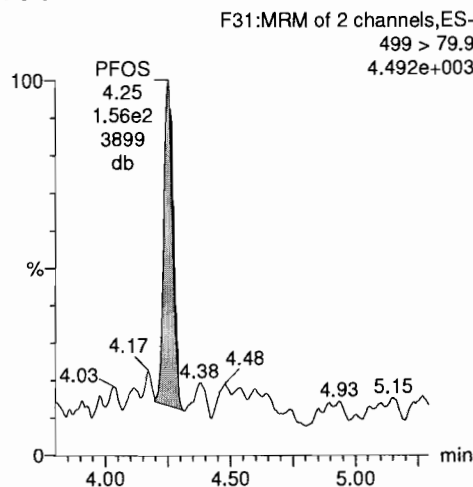
PFBS



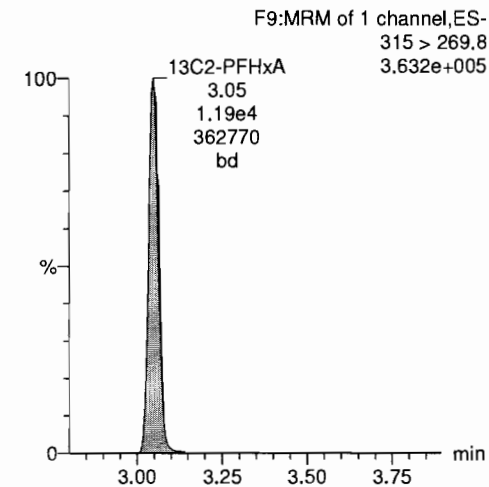
PFOA



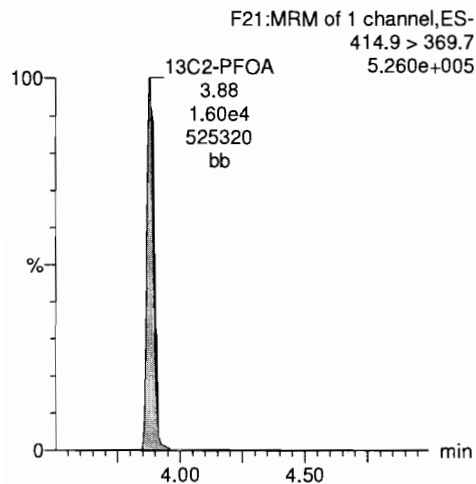
PFOS



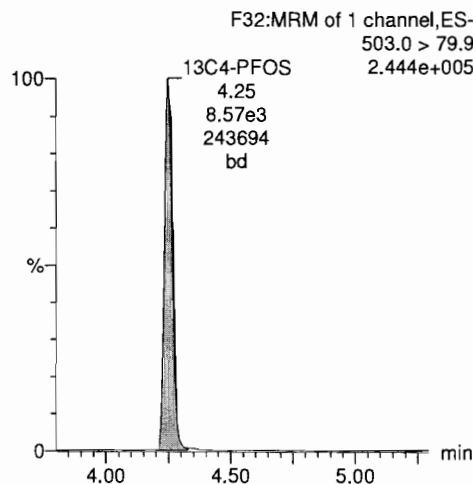
13C2-PFHxA



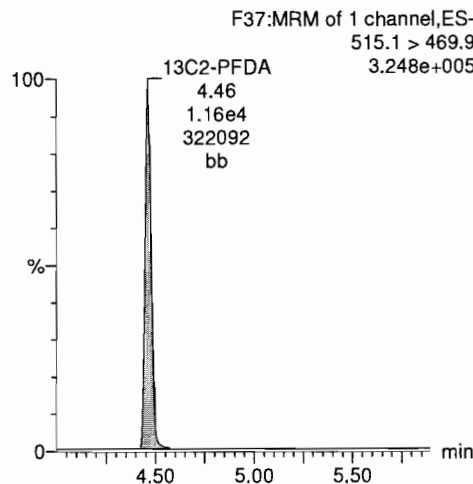
13C2-PFOA



13C4-PFOS



13C2-PFDA



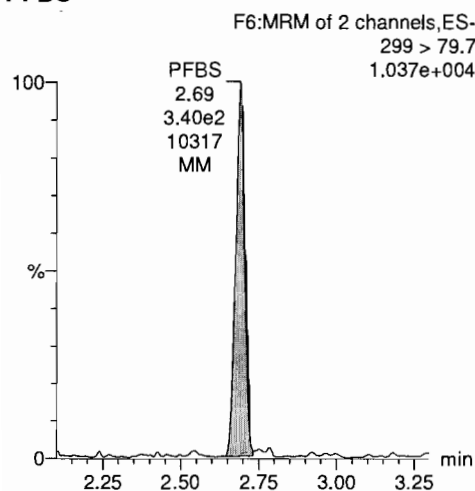
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

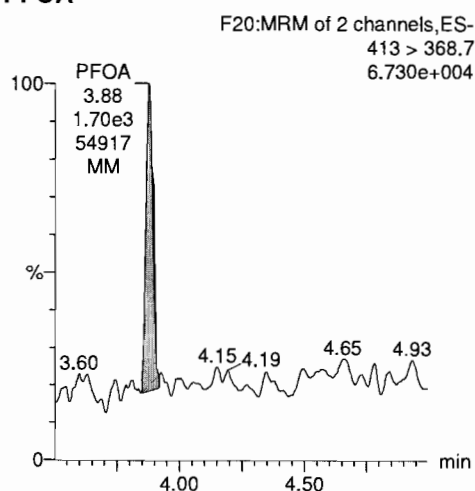
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_4, Date: 25-Apr-2018, Time: 17:39:30, ID: ST180425M1-2 PFC CS-2 537 18D1811, Description: PFC CS-2 18D1811

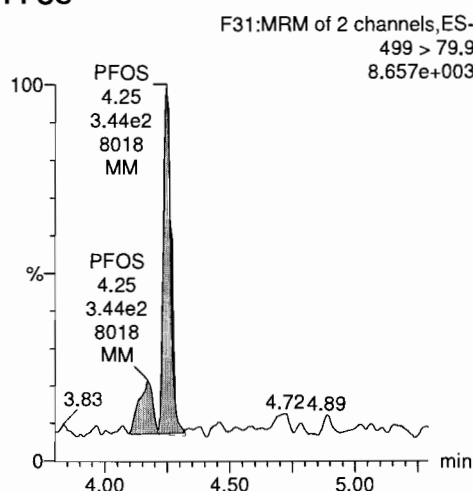
PFBS



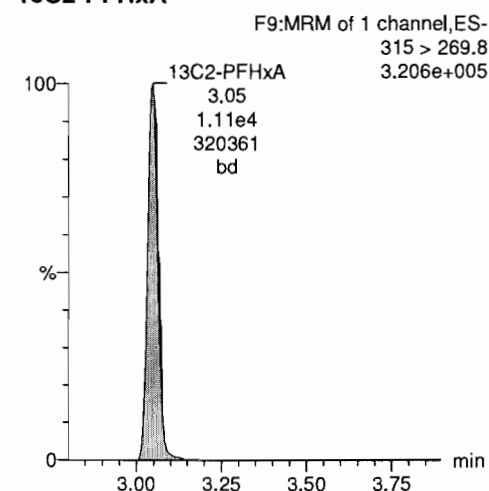
PFOA



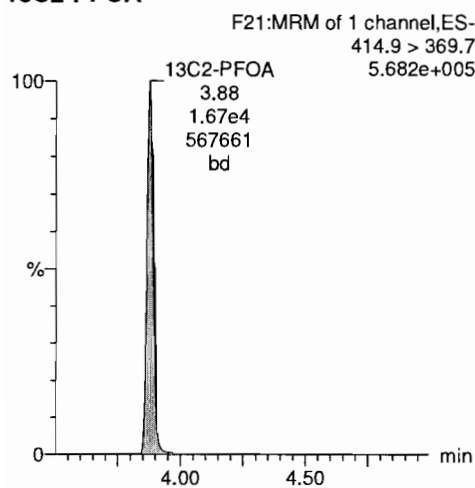
PFOS



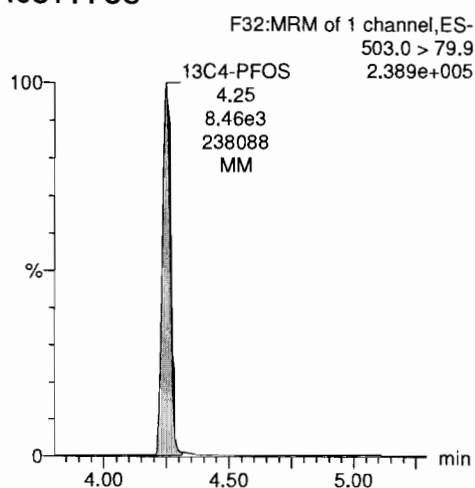
13C2-PFHxA



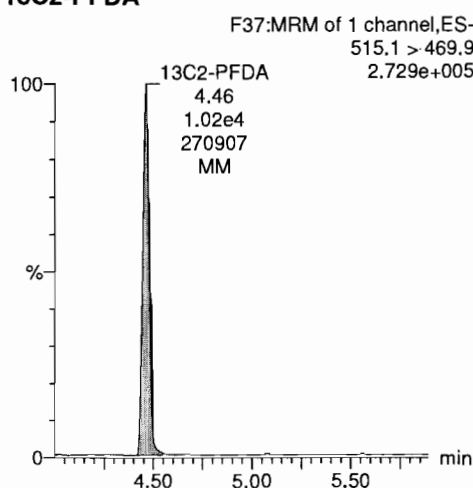
13C2-PFOA



13C4-PFOS



13C2-PFDA



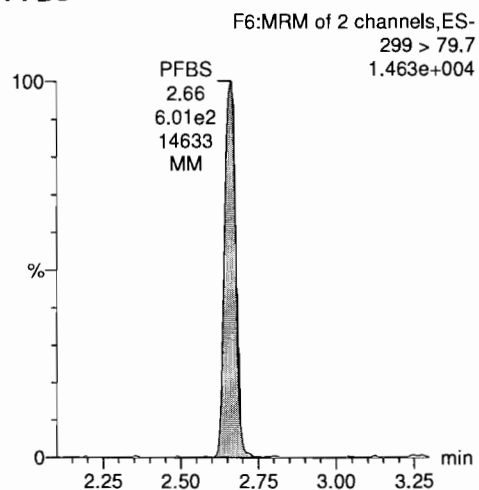
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

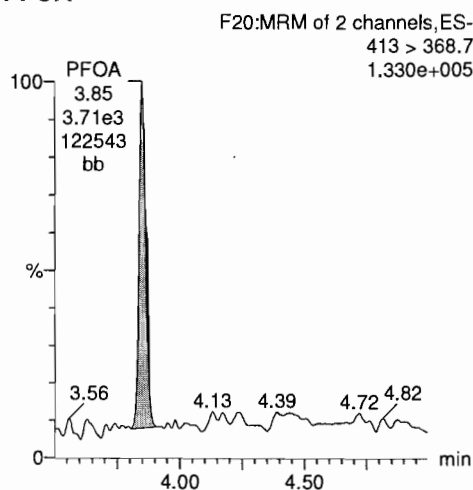
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_5, Date: 25-Apr-2018, Time: 17:50:57, ID: ST180425M1-3 PFC CS-1 537 18D1812, Description: PFC CS-1 18D1812

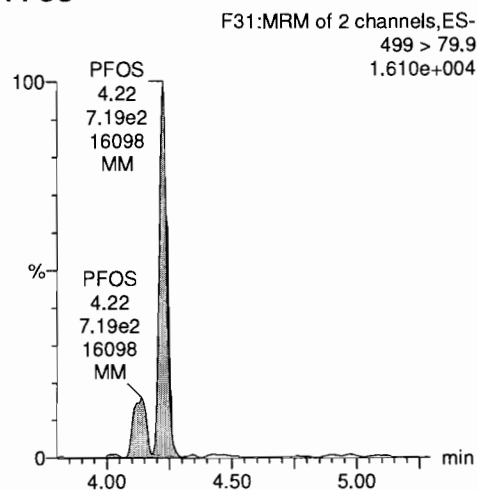
PFBS



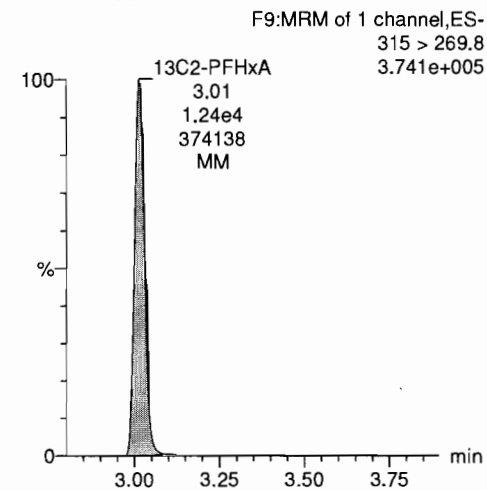
PFOA



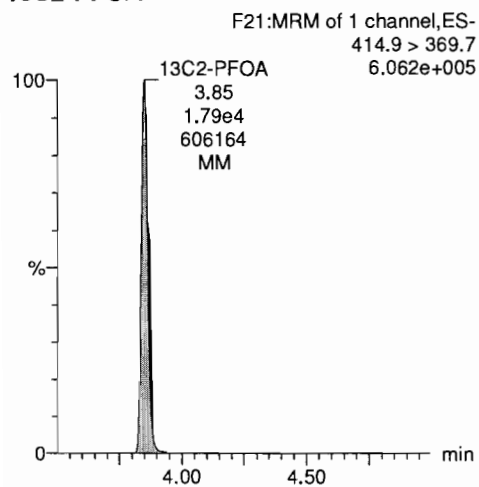
PFOS



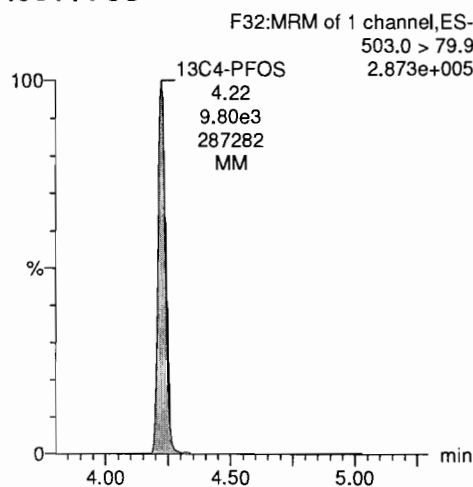
13C2-PFHxA



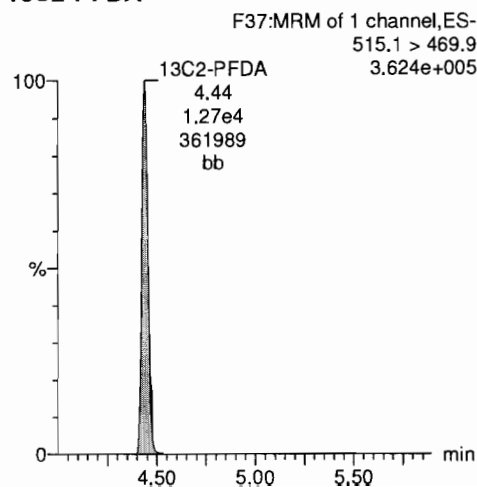
13C2-PFOA



13C4-PFOS



13C2-PFDA



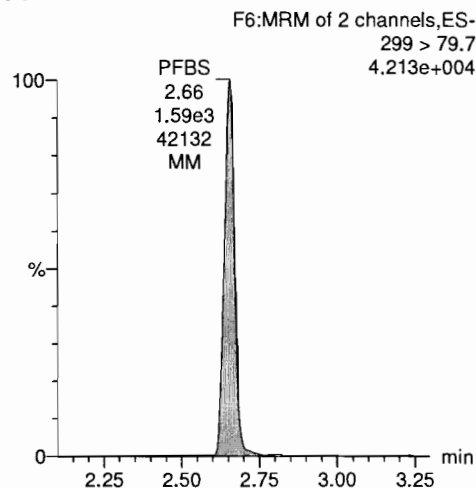
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

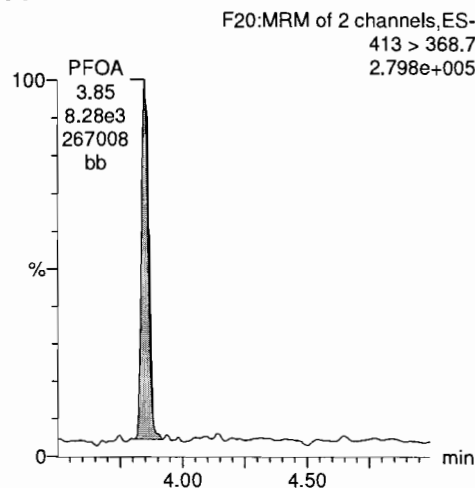
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_6, Date: 25-Apr-2018, Time: 18:02:24, ID: ST180425M1-4 PFC CS0 537 18D1813, Description: PFC CS0 18D1813

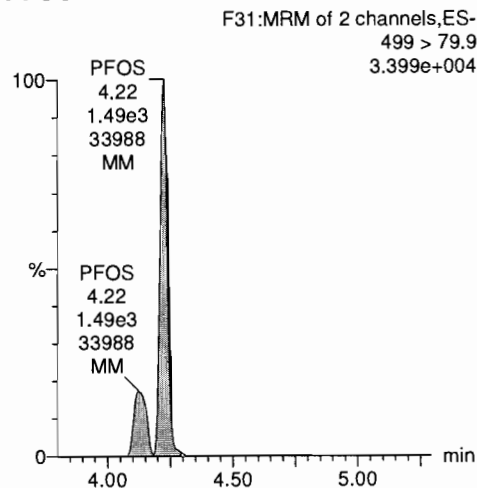
PFBS



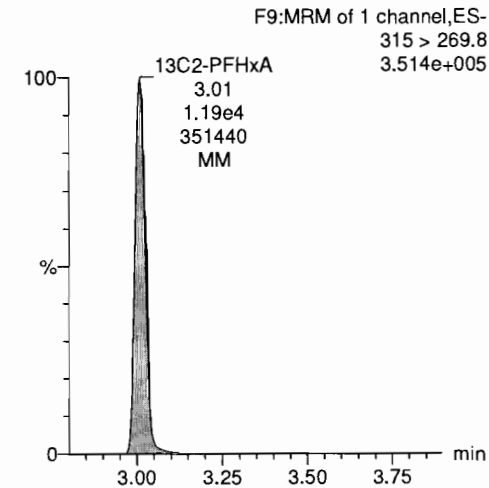
PFOA



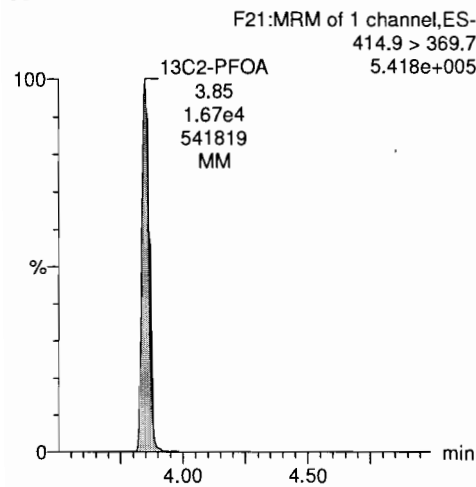
PFOS



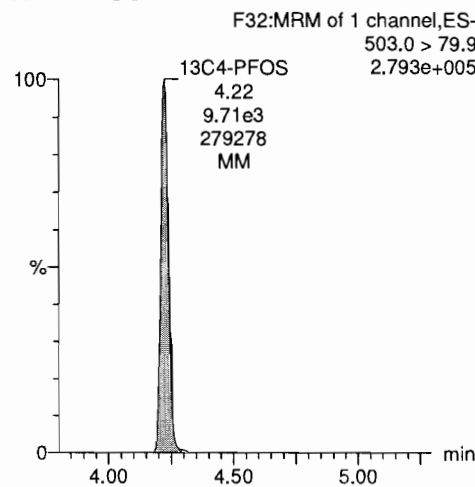
13C2-PFHxA



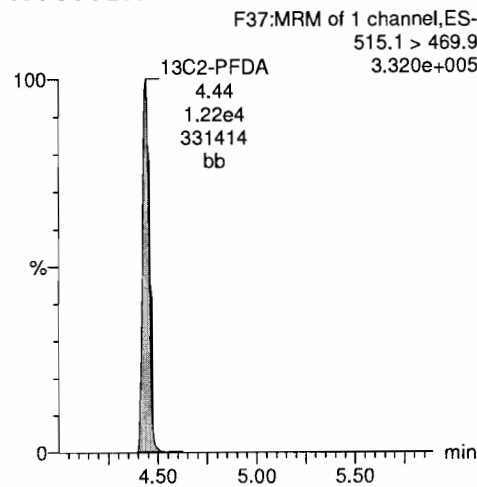
13C2-PFOA



13C4-PFOS



13C2-PFDA



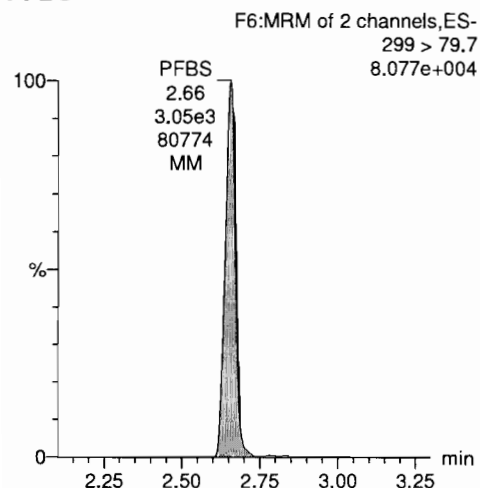
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

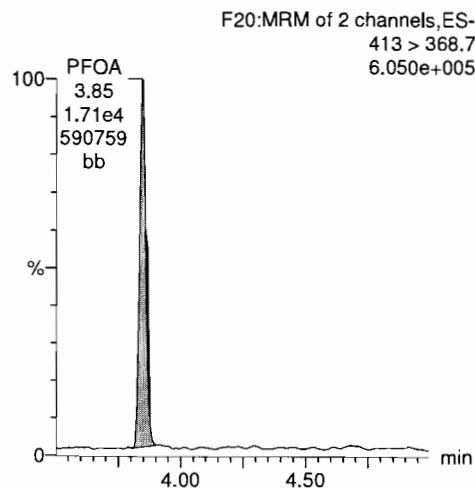
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_7, Date: 25-Apr-2018, Time: 18:13:51, ID: ST180425M1-5 PFC CS1 537 18D1814, Description: PFC CS1 18D1814

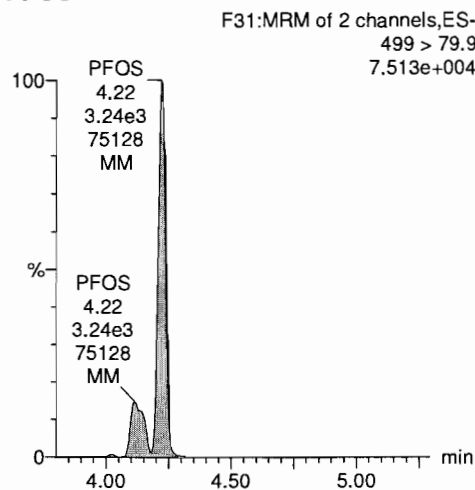
PFBS



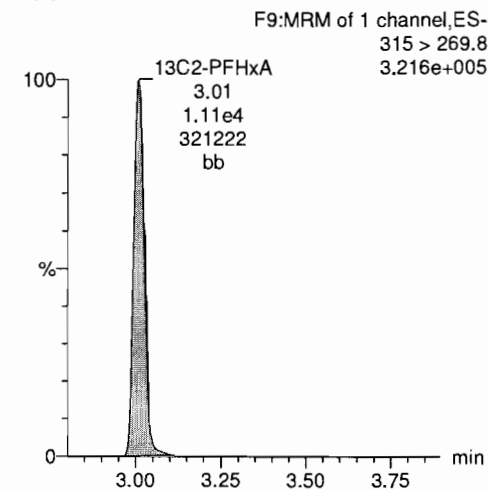
PFOA



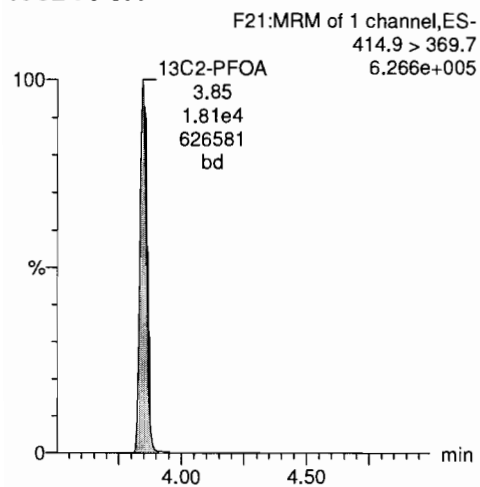
PFOS



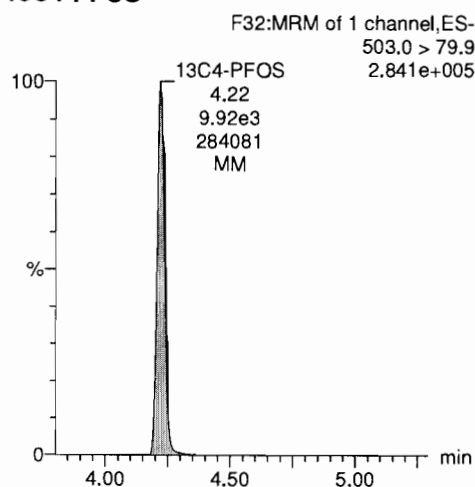
13C2-PFHxA



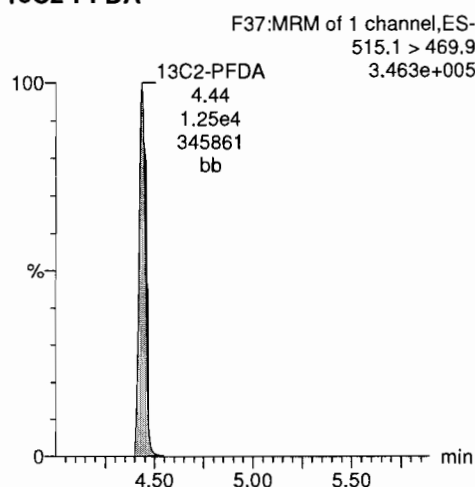
13C2-PFOA



13C4-PFOS



13C2-PFDA



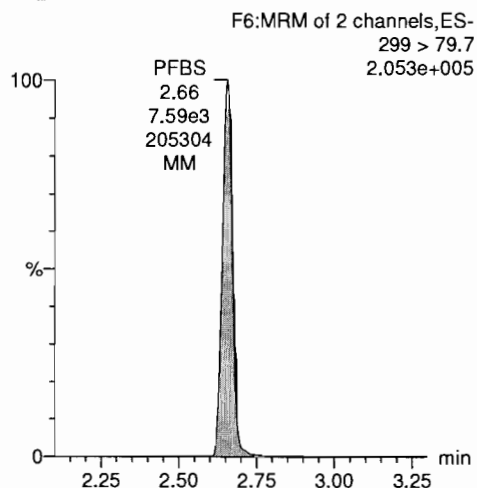
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

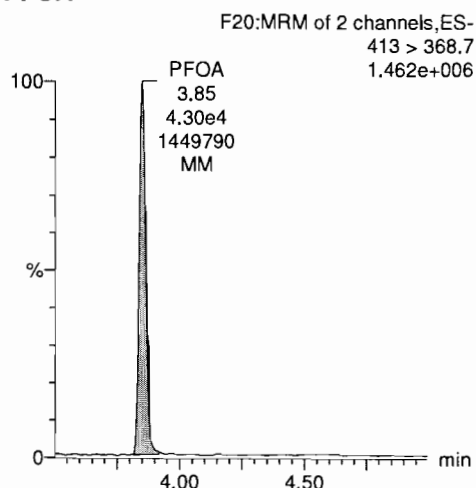
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_8, Date: 25-Apr-2018, Time: 18:25:18, ID: ST180425M1-6 PFC CS2 537 18D1815, Description: PFC CS2 18D1815

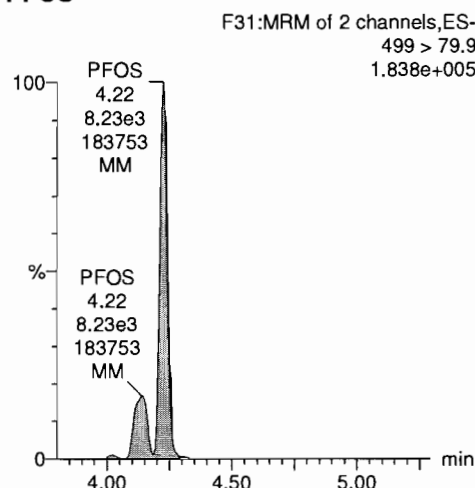
PFBS



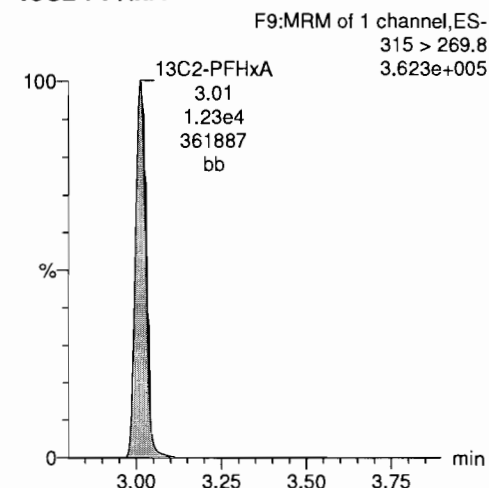
PFOA



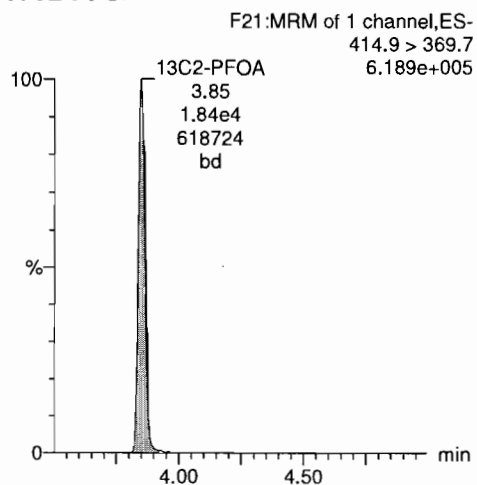
PFOS



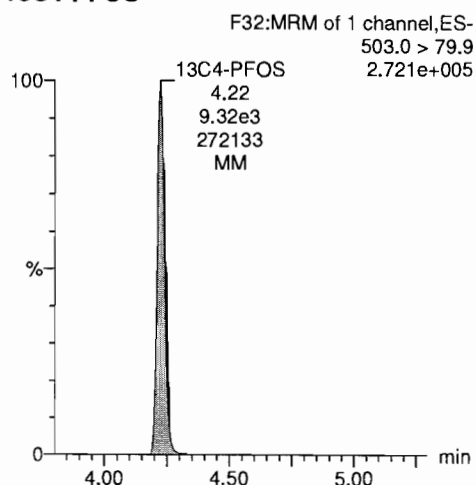
13C2-PFHxA



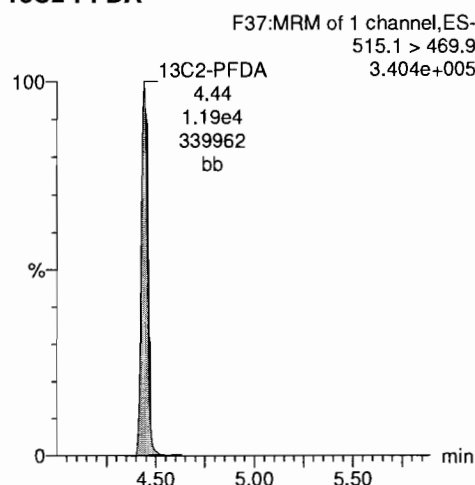
13C2-PFOA



13C4-PFOS



13C2-PFDA



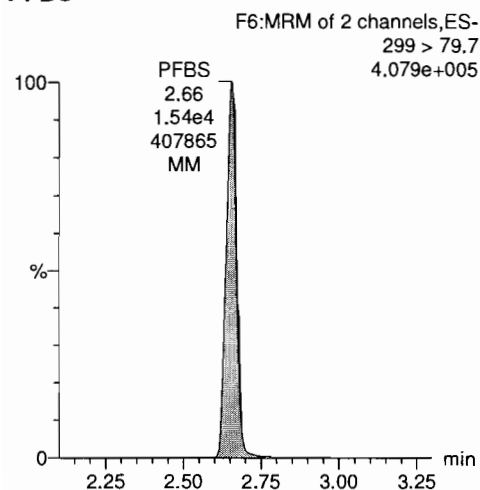
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

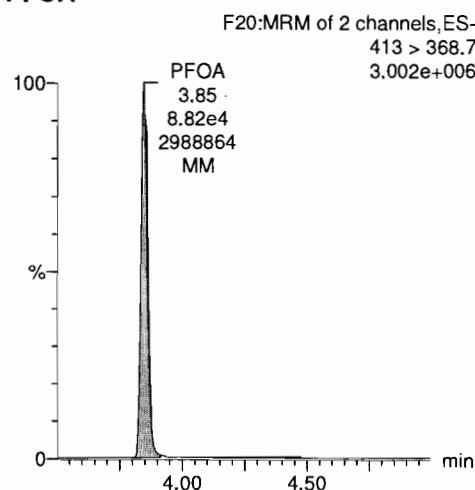
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_9, Date: 25-Apr-2018, Time: 18:36:45, ID: ST180425M1-7 PFC CS3 537 18D1816, Description: PFC CS3 18D1816

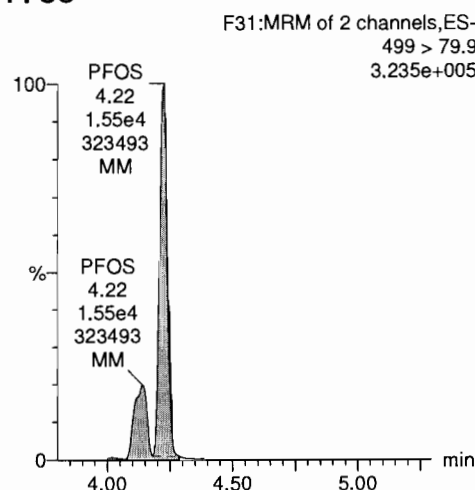
PFBS



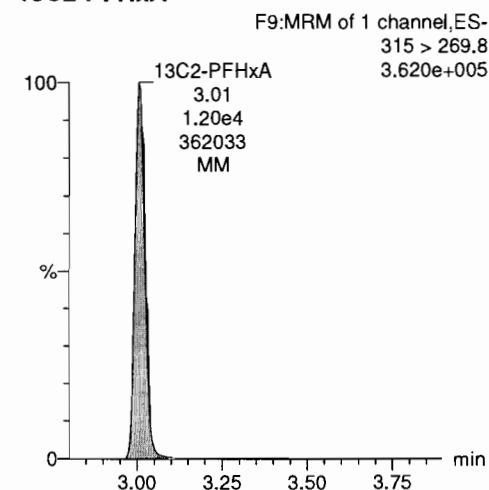
PFOA



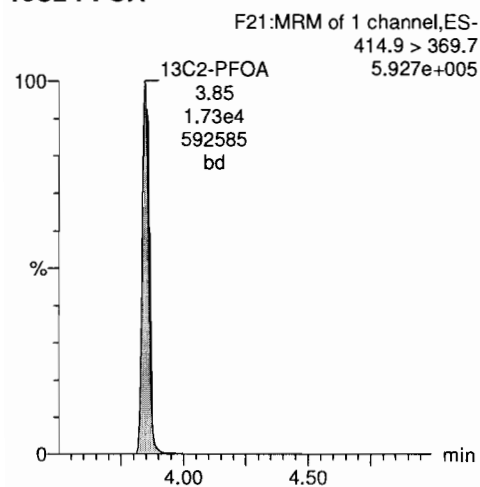
PFOS



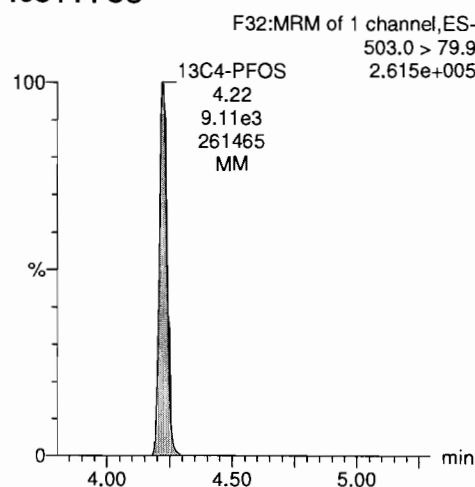
13C2-PFHxA



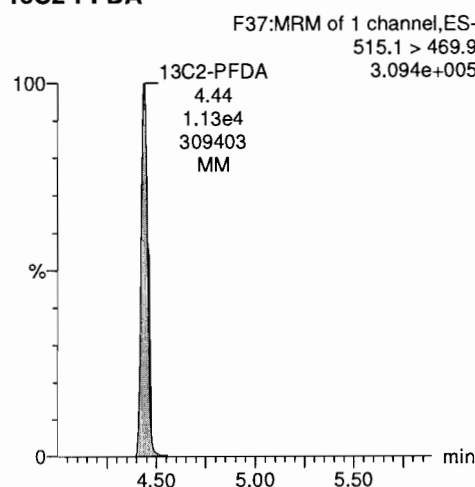
13C2-PFOA



13C4-PFOS



13C2-PFDA



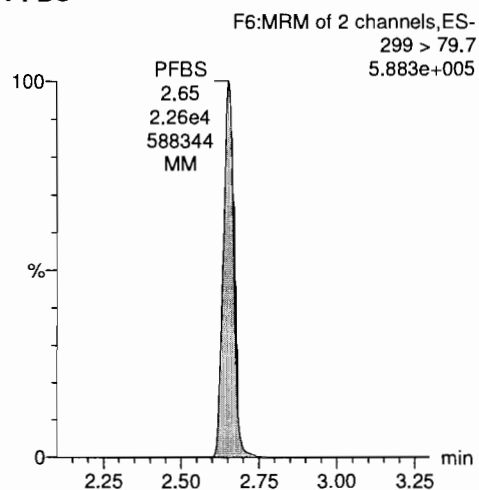
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

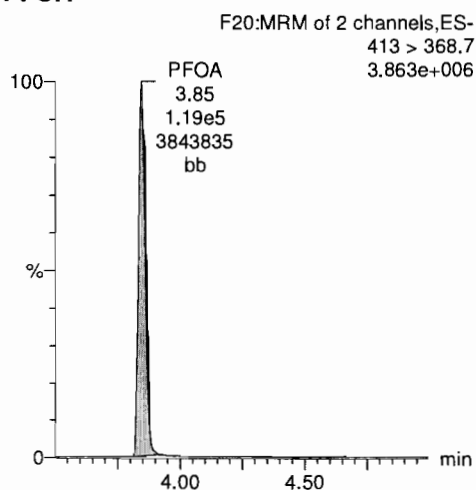
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_10, Date: 25-Apr-2018, Time: 18:48:12, ID: ST180425M1-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

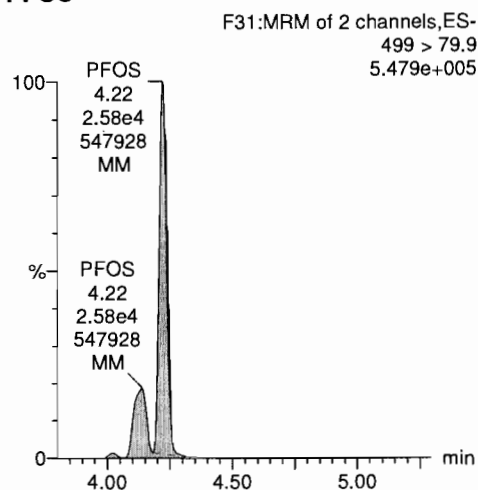
PFBS



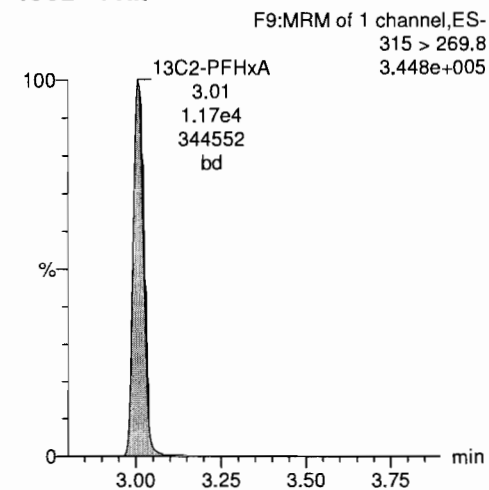
PFOA



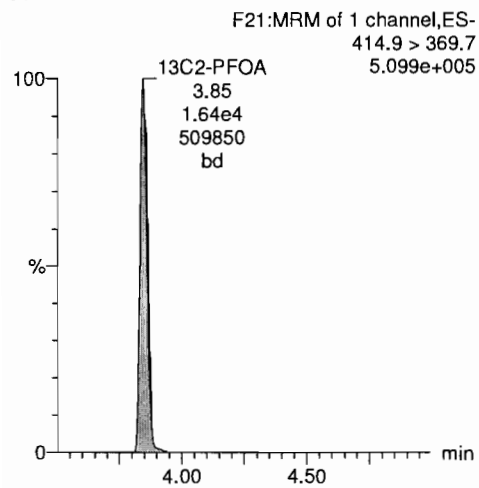
PFOS



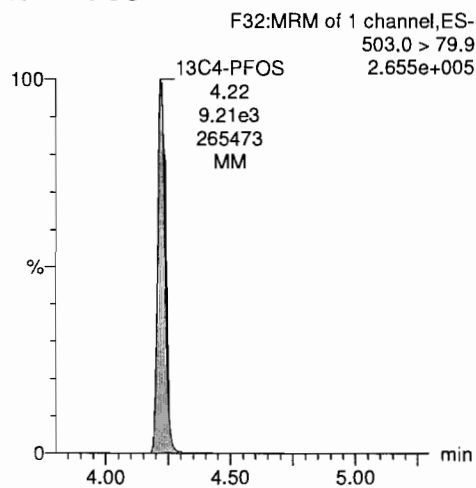
13C2-PFHxA



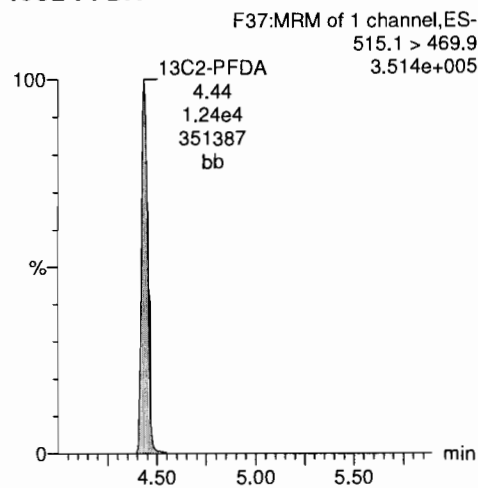
13C2-PFOA



13C4-PFOS



13C2-PFDA



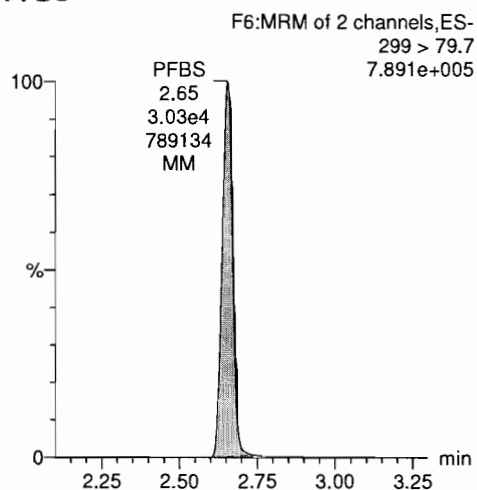
Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-CRVL3.qld

Last Altered: Thursday, April 26, 2018 11:14:52 Pacific Daylight Time

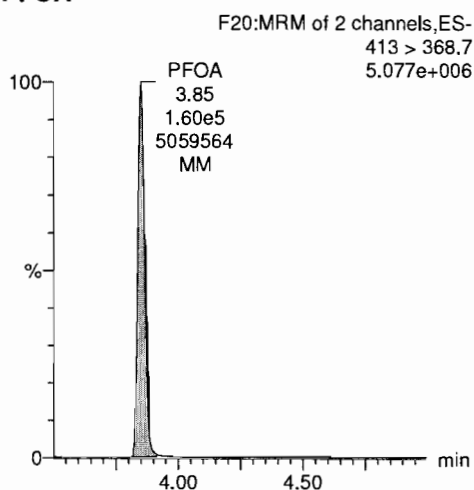
Printed: Thursday, April 26, 2018 13:53:27 Pacific Daylight Time

Name: 180425M1_11, Date: 25-Apr-2018, Time: 18:59:41, ID: ST180425M1-9 PFC CS5 537 18D1818, Description: PFC CS5 18D1818

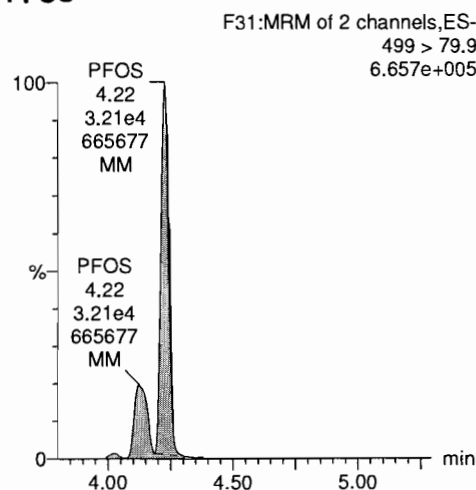
PFBS



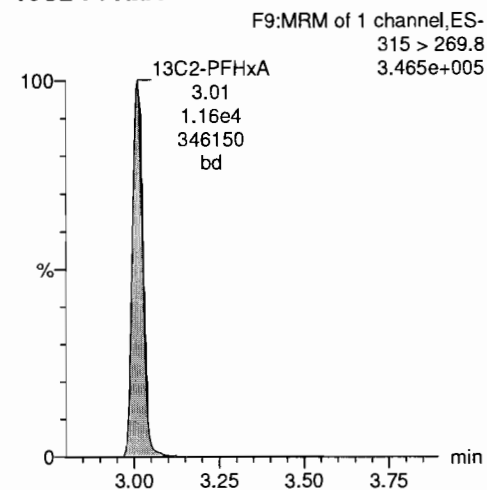
PFOA



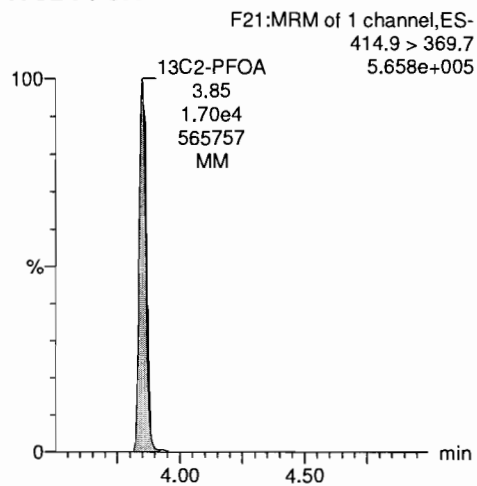
PFOS



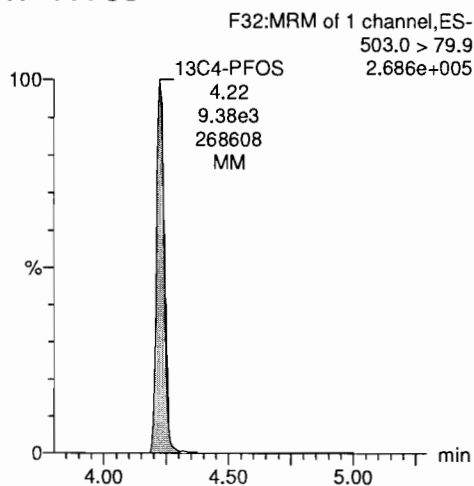
13C2-PFHxA



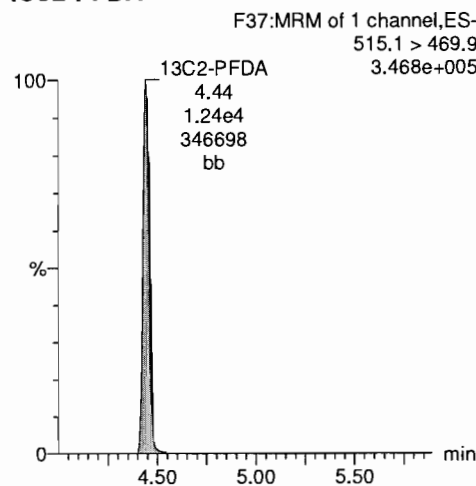
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-ICV.qld

Last Altered: Thursday, April 26, 2018 11:48:21 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:55:33 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

AD 4/26/18

Name: 180425M1_13, Date: 25-Apr-2018, Time: 19:22:38, ID: ICV180425M1-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

	# Name	Trace	Area	IS Area	Wt/Vol	RRF	Pred.RT	RT	y Axis Resp	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.64e3	9.31e3	1.0000		2.64	2.66	11.2	10.4	104.3
2	5 PFOA	413 > 368.7	1.71e4	1.69e4	1.0000		3.86	3.85	10.1	10.5	104.5
3	7 PFOS	499 > 79.9	3.73e3	9.31e3	1.0000		4.23	4.22	11.5	10.7	106.6
4	15 13C2-PFHxA	315 > 269.8	1.22e4	1.69e4	1.0000	0.689	3.09	3.01	7.22	10.5	104.9
5	16 13C2-PFDA	515.1 > 469.9	1.19e4	1.69e4	1.0000	0.696	4.43	4.44	7.00	10.1	100.7
6	17 d5-N-EtFOSAA	589.3 > 419.0	2.17e4	2.13e4	1.0000	1.114	4.55	4.66	40.9	36.7	91.8
7	18 13C2-PFOA	414.9 > 369.7	1.69e4	1.69e4	1.0000	1.000	3.92	3.85	10.0	10.0	100.0
8	19 13C4-PFOS	503.0 > 79.9	9.31e3	9.31e3	1.0000	1.000	4.29	4.22	28.7	28.7	100.0
9	20 d3-N-MeFOSAA	573.3 > 419.0	2.13e4	2.13e4	1.0000	1.000	4.62	4.55	40.0	40.0	100.0

AR 5/4/18

Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-ICV.qld

Last Altered: Thursday, April 26, 2018 11:48:21 Pacific Daylight Time

Printed: Thursday, April 26, 2018 13:55:33 Pacific Daylight Time

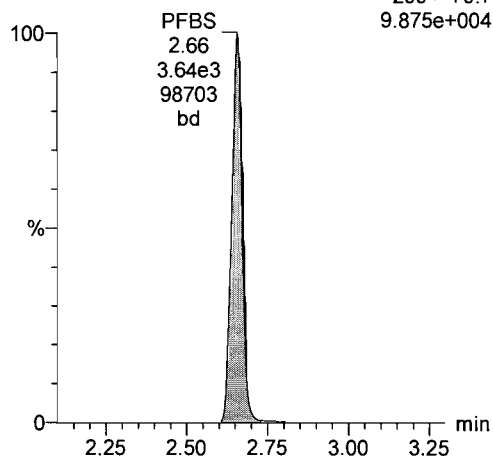
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_04-25-18_M1-L3.cdb 26 Apr 2018 11:14:52

Name: 180425M1_13, Date: 25-Apr-2018, Time: 19:22:38, ID: ICV180425M1-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

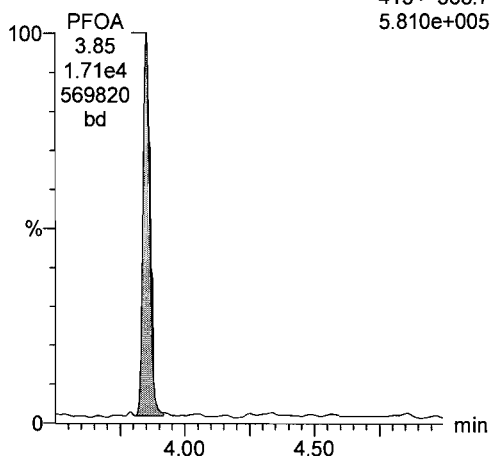
PFBS

F6:MRM of 2 channels,ES-
299 > 79.7
9.875e+004



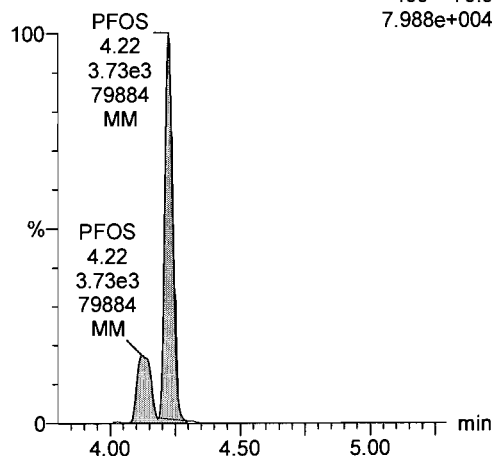
PFOA

F20:MRM of 2 channels,ES-
413 > 368.7
5.810e+005



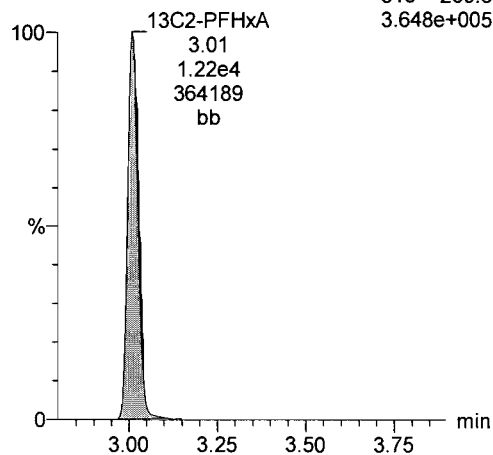
PFOS

F31:MRM of 2 channels,ES-
499 > 79.9
7.988e+004



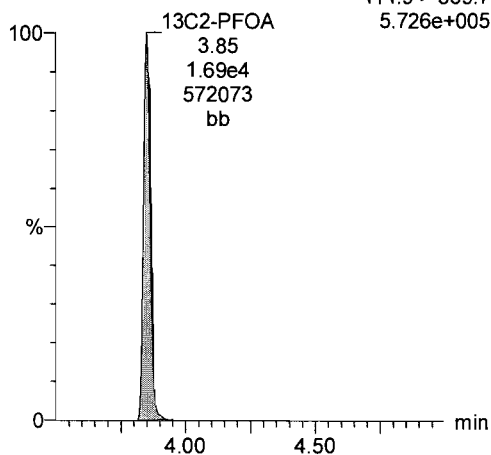
13C2-PFHxA

F9:MRM of 1 channel,ES-
315 > 269.8
3.648e+005



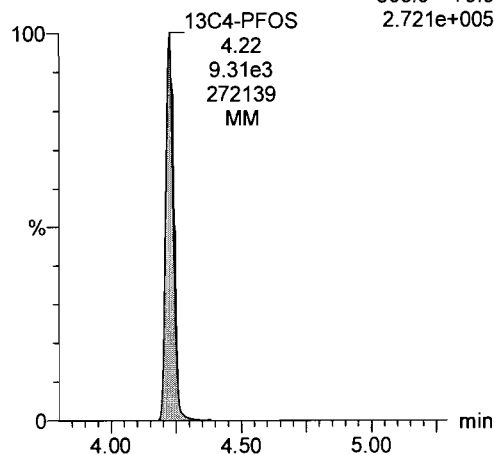
13C2-PFOA

F21:MRM of 1 channel,ES-
414.9 > 369.7
5.726e+005



13C4-PFOS

F32:MRM of 1 channel,ES-
503.0 > 79.9
2.721e+005

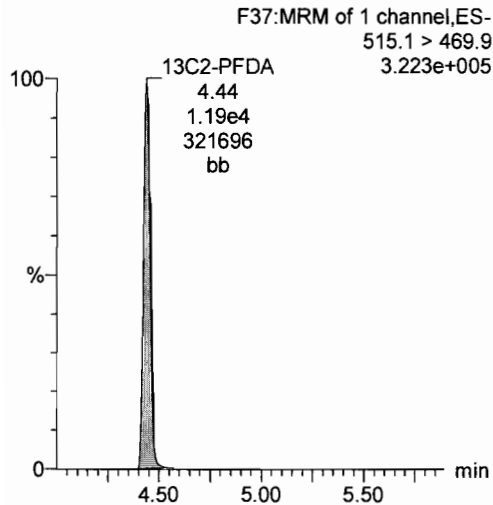


Dataset: Z:\Projects\PFAS.PRO\Results\180425M1\180425M1-ICV.qld

Last Altered: Thursday, April 26, 2018 11:48:21 Pacific Daylight Time
Printed: Thursday, April 26, 2018 13:55:33 Pacific Daylight Time

Name: 180425M1_13, Date: 25-Apr-2018, Time: 19:22:38, ID: ICV180425M1-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

13C2-PFDA



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	Leachate_Date	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	Percent_Moisture	Percent_Lipid
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:12	04/19/2018			20180423	09:00:00	20180425	20:31:00	1800702-01	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:12	04/19/2018			20180423	09:00:00	20180425	20:31:00	1800702-01	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:12	04/19/2018			20180423	09:00:00	20180425	20:31:00	1800702-01	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:12	04/19/2018			20180423	09:00:00	20180425	20:31:00	1800702-01	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:12	04/19/2018			20180423	09:00:00	20180425	20:31:00	1800702-01	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1FB189-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 13:13	04/19/2018			20180423	09:00:00	20180425	20:42:00	1800702-02	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW190-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 14:00	04/19/2018			20180423	09:00:00	20180425	20:54:00	1800702-03	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW190-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	04/17/2018 14:00	04/19/2018			20180423	09:00:00	20180425	20:54:00	1800702-03	1	-999		
N6247016D9000	0008		CERRY POINT MCAS	CH-AT-1RW190-0418	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	0																

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch	Validator_Name	Val_Date	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.92	4.92	NG L	U	U	PR	TRG									5.1	0.436	4.92	9.83	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.92	4.92	NG L	U	U	PR	TRG									5.1	1.06	4.92	9.83	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.92	4.92	NG L	U	U	PR	TRG									5.1		1.02	4.92	9.83	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	92.4	92.4	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	85.8	85.8	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.88	4.88	NG L	U	U	PR	TRG									5.1	0.433	4.88	9.78	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.88	4.88	NG L	U	U	PR	TRG									5.1	1.06	4.88	9.78	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.88	4.88	NG L	U	U	PR	TRG									5.1	1.02	4.88	9.78	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	84.6	84.6	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	84.0	84.0	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.94	4.94	NG L	U	U	PR	TRG									5.1	0.438	4.94	9.89	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.94	4.94	NG L	U	U	PR	TRG									5.1	1.07	4.94	9.89	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.94	4.94	NG L	U	U	PR	TRG									5.1	1.03	4.94	9.89	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	91.9	91.9	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	91.6	91.6	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.73	4.73	NG L	U	U	PR	TRG									5.1		0.419	4.73	9.46	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.73	4.73	NG L	U	U	PR	TRG									5.1	1.02	4.73	9.46	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.73	4.73	NG L	U	U	PR	TRG									5.1	0.984	4.73	9.46	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	100	100	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	98.0	98.0	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.83	4.83	NG L	U	U	PR	TRG									5.1	0.428	4.83	9.66	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.83	4.83	NG L	U	U	PR	TRG									5.1	1.04	4.83	9.66	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.83	4.83	NG L	U	U	PR	TRG									5.1	1.00	4.83	9.66	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	98.6	98.6	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	102	102	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.98	4.98	NG L	U	U	PR	TRG									5.1	0.442	4.98	9.97	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.98	4.98	NG L	U	U	PR	TRG									5.1	1.08	4.98	9.97	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.98	4.98	NG L	U	U	PR	TRG									5.1	1.04	4.98	9.97	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	84.9	84.9	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	92.0	92.0	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.17	5.17	NG L	U	U	PR	TRG									5.1	0.457	5.17	10.3	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	5.17	5.17	NG L	U	U	PR	TRG									5.1	1.11	5.17	10.3	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.17	5.17	NG L	U	U	PR	TRG									5.1	1.07	5.17	10.3	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	89.1	89.1	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	89.5	89.5	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.86	4.86	NG L	U	U	PR	TRG									5.1	0.430	4.86	9.71	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	4.86	4.86	NG L	U	U	PR	TRG									5.1	1.05	4.86	9.71	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.86	4.86	NG L	U	U	PR	TRG									5.1	1.01	4.86	9.71	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	90.5	90.5	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	101	101	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.00	5.00	NG L	U	U	PR	TRG									5.1	0.443	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	5.00	5.00	NG L	U	U	PR	TRG									5.1	1.08	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.00	5.00	NG L	U	U	PR	TRG									5.1	1.04	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	104	104	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	86.8	86.8	PCT REC			PR	SURR		SLSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	86.9	86.9	NG L			PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	83.6	83.6	NG L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1	82.0	82.0	NG L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA	94.2	94.2	PCT REC			PR	SURR		LSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFDA	13C2-PFDA	85.7	85.7	PCT REC			PR	SURR		LSA	130	70					5.1					1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5	72.8	72.8	NG L			PR	TRG		LSA	130	70					5.1	0.447	5.04	10.1	1800702	SBD0047	ENVIRONMENTAL DATA SERVICES INC	20180531	
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1	81.6	81.6	NG L			PR	TRG		LSA	130	70					5.1	1.09	5.0						

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

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1800702
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: May 30, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW189-0418	1800702-1	Water
1MS	CH-AT-1RW189-0418MS	1800702-1MS	Water
1MSD	CH-AT-1RW189-0418MSD	1800702-1MSD	Water
2	CH-AT-1FB189-0418	1800702-2	Water
3	CH-AT-1RW190-0418	1800702-3	Water
4	CH-AT-1FB190-0418	1800702-4	Water
5	CH-AT-1RW191-0418	1800702-5	Water
6	CH-AT-1FB191-0418	1800702-6	Water
7	CH-AT-1RW192-0418	1800702-7	Water
8	CH-AT-1FB192-0418	1800702-8	Water

A full data validation was performed on the analytical data for four water samples and four aqueous field blank samples collected on April 17-18, 2018 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 recovery (%R) 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-1FB189-0418	None - ND	-	-	-
CH-AT-1FB190-0418	None - ND	-	-	-
CH-AT-1FB191-0418	None - ND	-	-	-
CH-AT-1FB192-0418	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- The MS/MSD samples exhibited acceptable %R and RPD values.

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
Senior Chemist

Dated:

5/31/18

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-1RW189-0418										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1800702-01		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:		17-Apr-18 13:12		Date Received:		19-Apr-18 08:49					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.436	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1					
PFOA	ND	1.06	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1					
PFOS	ND	1.02	4.92	9.83		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
13C2-PFHxA	SURR	92.4	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1						
13C2-PFDA	SURR	85.8	70 - 130		B8D0126	23-Apr-18	0.254 L	25-Apr-18 20:31	1						
DL - Detection Limit	LOD - Limit of Detection	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 5/30/18

Sample ID: CH-AT-1FB189-0418										EPA Method 537					
Client Data				Laboratory Data											
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1800702-02		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:		17-Apr-18 13:13		Date Received:		19-Apr-18 08:49					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.433	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1					
PFOA	ND	1.06	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1					
PFOS	ND	1.02	4.88	9.78		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
13C2-PFHxA	SURR	84.6	70 - 130		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	1						
13C2-PFDA	SURR	84.0	70 - 130		B8D0126	23-Apr-18	0.256 L	25-Apr-18 20:42	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.

WS 1301.8

Sample ID: CH-AT-1RW190-0418									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1800702-03	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	17-Apr-18 14:00		Date Received:	19-Apr-18 08:49			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.438	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54
PFOA	ND	1.07	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54
PFOS	ND	1.03	4.94	9.89		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	91.9	70 - 130		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	I
13C2-PFDA	SURR	91.6	70 - 130		B8D0126	23-Apr-18	0.253 L	25-Apr-18 20:54	I
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 5/30/18

Sample ID: CH-AT-1FB190-0418										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1800702-04		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:		17-Apr-18 14:01		Date Received:		19-Apr-18 08:49					
Analyte		Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBS		ND	0.419	4.73	9.46		B8D0126	23-Apr-18	0.264 L	25-Apr-18 21:05	I				
PFOA		ND	1.02	4.73	9.46		B8D0126	23-Apr-18	0.264 L	25-Apr-18 21:05	I				
PFOS		ND	0.984	4.73	9.46		B8D0126	23-Apr-18	0.264 L	25-Apr-18 21:05	I				
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
I3C2-PFHxA	SURR	100	70 - 130			B8D0126	23-Apr-18	0.264 L	25-Apr-18 21:05	I					
I3C2-PFDA	SURR	98.0	70 - 130			B8D0126	23-Apr-18	0.264 L	25-Apr-18 21:05	I					
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.		Only the linear isomer is reported for all other analytes.							
		LOQ - Limit of quantitation		Results reported to the DL.											

rw 5/30/18

Sample ID: CH-AT-1RW191-0418										EPA Method 537	
Client Data					Laboratory Data						
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1800702-05		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:	17-Apr-18 14:22		Date Received:	19-Apr-18 08:49				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.428	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1	
PFOA	ND	1.04	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1	
PFOS	ND	1.00	4.83	9.66		B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
I3C2-PFHxA	SURR	98.6	70 - 130			B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	1	
I3C2-PFDA	SURR	102	70 - 130			B8D0126	23-Apr-18	0.259 L	25-Apr-18 21:17	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, PFHs, PFOA and PFOS include both linear and branched isomers.											
Only the linear isomer is reported for all other analytes.											

rw s | 301.8

Sample ID: CH-AT-1FB191-0418										EPA Method 537					
Client Data				Laboratory Data											
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1800702-06		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic PFAS DW Investigation		Date Collected:		17-Apr-18 14:23		Date Received:		19-Apr-18 08:49					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.442	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1					
PFOA	ND	1.08	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1					
PFOS	ND	1.04	4.98	9.97		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
13C2-PFHxA	SURR	84.9	70 - 130		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1						
13C2-PFDA	SURR	92.0	70 - 130		B8D0126	23-Apr-18	0.251 L	25-Apr-18 21:28	1						
DL - Detection Limit		LOD - Limit of Detection		LCL-UCL- Lower control limit - upper control limit		When reported: PFHxS, PFOA and PFOS include both linear and branched isomers.		Only the linear isomer is reported for all other analytes.							
		LOQ - Limit of quantitation		Results reported to the DL.											

new 5/30/18

Sample ID: CH-AT-1RW192-0418									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1800702-07	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	18-Apr-18 10:34		Date Received:	19-Apr-18 08:49			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.457	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40
PFOA	ND	1.11	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40
PFOS	ND	1.07	5.17	10.3		B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	89.1	70 - 130			B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40
13C2-PFDA	SURR	89.5	70 - 130			B8D0126	23-Apr-18	0.242 L	25-Apr-18 21:40
LOD - Limit of Detection LOQ - Limit of quantitation DL - Detection Limit 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.									

W 5/30/18

Sample ID: CH-AT-1FB192-0418										EPA Method 537					
Client Data					Laboratory Data										
Name:	CH2M Hill				Matrix:	Drinking Water				Lab Sample:	1800702-08				
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation				Date Collected:	18-Apr-18 10:35				Date Received:	19-Apr-18 08:49				
Analyte	Conc. (ng/L)				DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBS	ND				0.430	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1		
PFOA	ND				1.05	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1		
PFOS	ND				1.01	4.86	9.71		B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1		
Labeled Standards	Type	% Recovery			Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C2-PFHxA	SURR	90.5			70 - 130			B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	1			
13C2-PFDA	SURR	101			70 - 130			B8D0126	23-Apr-18	0.257 L	25-Apr-18 21:51	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 51301.8

