Naval Facilities Engineering Command

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 1802841

Naval Research Laboratory – Chesapeake Bay Detachment
Chesapeake Beach, Maryland

February 2019

September 06, 2018

Vista Work Order No. 1802841

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on August 31, 2018 under your Project Name 'CTO-08 PN:679580.14.FI-FS'.

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 Work Order No. 1802841
Case Narrative

Sample Condition on Receipt:

One drinking water sample and one QC water sample were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 537, Rev. 1.1

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 "CBD-1RW40-0818". The analyte recoveries and RPDs were within the method acceptance criteria.

Table of Contents

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1802841-01	CBD-1RW40-0818	MS/MSD30-Aug-18 15:23	31-Aug-18 09:12	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1802841-02	CBD-1FB40-0818	30-Aug-18 15:25	31-Aug-18 09:12	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Vista Project: 1802841

Client Project: CTO-08 PN:679580.14.FI-FS

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8I0001-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFHxA	307-24-4	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFOA	335-67-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFNA	375-95-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFDA	335-76-2	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFUnA	2058-94-8	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFTrDA	72629-94-8	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFTeDA	376-06-7	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
13C2-PFDA	SURR	94.5	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
d5-EtFOSAA	SURR	87.5	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: LFB **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8I0001-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	43.0	35.4	122	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHxA	307-24-4	46.2	40.0	115	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHpA	375-85-9	43.7	40.0	109	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHxS	355-46-4	42.1	36.4	116	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFOA	335-67-1	46.1	40.0	115	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFNA	375-95-1	39.2	40.0	98.1	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFOS	1763-23-1	43.7	37.0	118	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFDA	335-76-2	42.7	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
MeFOSAA	2355-31-9	40.8	40.0	102	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
EtFOSAA	2991-50-6	42.6	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFUnA	2058-94-8	42.9	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFDoA	307-55-1	43.1	40.0	108	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFTrDA	72629-94-8	41.2	40.0	103	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFTeDA	376-06-7	39.7	40.0	99.1	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.0	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
13C2-PFDA	SURR	99.0	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
d5-EtFOSAA	SURR	95.9	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1

Sample ID: CBD-1RW40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Drinking Water
Date Collected: 30-Aug-18 15:23

Laboratory Data

Lab Sample: 1802841-01
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxA	307-24-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHpA	375-85-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxS	355-46-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOA	335-67-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFNA	375-95-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOS	1763-23-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDA	335-76-2	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
MeFOSAA	2355-31-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
EtFOSAA	2991-50-6	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFUnA	2058-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDoA	307-55-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTrDA	72629-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTeDA	376-06-7	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.5	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
13C2-PFDA	SURR	89.7	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
d5-EtFOSAA	SURR	83.0	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

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

Results reported to the DL.

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

Sample ID: CBD-1RW40-0818 **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B8I0001-MS1/B8I0001-MSD1	Source Lab Sample:	1802841-01
Project:	CTO-08 PN:679580.14.FI-FS	QC Batch:	B8I0001	Date Extracted:	01-Sep-18
Matrix:	Aqueous	Samp Size:	0.261/0.261 L	Column:	BEH C18

Analyte	CAS Number	Sample (ng/L)	LFSM (ng/L)	LFSM Spike Amt	LFSM % Rec	LFSM Quals	LFSMD (ng/L)	LFSMD Spike Amt	LFSMD % Rec	RPD	LFSMD Quals	%Rec Limits	RPD Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
PFBS	375-73-5	ND	38.9	34.0	114		43.5	33.9	128	11.6		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHxA	307-24-4	ND	37.8	38.4	97.8		42.5	38.3	110	11.7		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHpA	375-85-9	ND	35.9	38.4	93.5		40.9	38.3	107	13.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHxS	355-46-4	ND	35.0	34.9	100		39.2	34.9	112	11.3		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFOA	335-67-1	ND	38.1	38.4	98.5		42.8	38.3	111	11.9		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFNA	375-95-1	ND	32.6	38.4	85.0		37.3	38.3	97.3	13.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFOS	1763-23-1	ND	37.8	35.5	106		39.4	35.4	111	4.61		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFDA	335-76-2	ND	35.0	38.4	90.8		40.3	38.3	105	14.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
MeFOSAA	2355-31-9	ND	35.0	38.4	91.2		37.2	38.3	97.1	6.27		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
EtFOSAA	2991-50-6	ND	34.4	38.4	89.6		38.5	38.3	101	12.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFUnA	2058-94-8	ND	33.4	38.4	86.9		39.0	38.3	102	16.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFDoA	307-55-1	ND	34.2	38.4	89.2		38.6	38.3	101	12.4		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFTrDA	72629-94-8	ND	32.9	38.4	85.6		37.4	38.3	97.6	13.1		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFTeDA	376-06-7	ND	30.4	38.4	79.2		34.5	38.3	90.2	13.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1

Labeled Standards	Type	LFSM % Rec	LFSM Quals	LFSMD % Rec	LFSMD Quals	Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
13C2-PFHxA	SURR	87.9		97.9		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1
13C2-PFDA	SURR	82.6		93.0		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1
d5-EtFOSAA	SURR	79.1		83.8		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1

Sample ID: CBD-1FB40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: QC Water
Date Collected: 30-Aug-18 15:25

Laboratory Data

Lab Sample: 1802841-02
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxA	307-24-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHpA	375-85-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxS	355-46-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOA	335-67-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFNA	375-95-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOS	1763-23-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDA	335-76-2	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
MeFOSAA	2355-31-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
EtFOSAA	2991-50-6	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFUnA	2058-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDoA	307-55-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTrDA	72629-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTeDA	376-06-7	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.9	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
13C2-PFDA	SURR	89.5	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
d5-EtFOSAA	SURR	89.2	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

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

September 06, 2018

Vista Work Order No. 1802841

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on August 31, 2018 under your Project Name 'CTO-08 PN:679580.14.FI-FS'.

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. 1802841
Case Narrative

Sample Condition on Receipt:

One drinking water sample and one QC water sample were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 537, Rev. 1.1

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 "CBD-1RW40-0818". The analyte recoveries and RPDs were within the method acceptance criteria.

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				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1802841-02	CBD-1FB40-0818	30-Aug-18 15:25	31-Aug-18 09:12	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8I0001-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
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PFHxA	307-24-4	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFOA	335-67-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFNA	375-95-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFDA	335-76-2	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFUnA	2058-94-8	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFTrDA	72629-94-8	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
PFTeDA	376-06-7	ND	3.04	5.00	10.0		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
13C2-PFDA	SURR	94.5	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1
d5-EtFOSAA	SURR	87.5	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:22	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: LFB **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8I0001-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	43.0	35.4	122	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHxA	307-24-4	46.2	40.0	115	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHpA	375-85-9	43.7	40.0	109	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFHxS	355-46-4	42.1	36.4	116	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFOA	335-67-1	46.1	40.0	115	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFNA	375-95-1	39.2	40.0	98.1	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFOS	1763-23-1	43.7	37.0	118	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFDA	335-76-2	42.7	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
MeFOSAA	2355-31-9	40.8	40.0	102	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
EtFOSAA	2991-50-6	42.6	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFUnA	2058-94-8	42.9	40.0	107	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFDoA	307-55-1	43.1	40.0	108	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFTrDA	72629-94-8	41.2	40.0	103	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
PFTeDA	376-06-7	39.7	40.0	99.1	70 - 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.0	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
13C2-PFDA	SURR	99.0	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1
d5-EtFOSAA	SURR	95.9	70- 130		B8I0001	01-Sep-18	0.250 L	04-Sep-18 15:35	1

Sample ID: CBD-1RW40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Drinking Water
Date Collected: 30-Aug-18 15:23

Laboratory Data

Lab Sample: 1802841-01
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxA	307-24-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHpA	375-85-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxS	355-46-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOA	335-67-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFNA	375-95-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOS	1763-23-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDA	335-76-2	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
MeFOSAA	2355-31-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
EtFOSAA	2991-50-6	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFUnA	2058-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDoA	307-55-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTrDA	72629-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTeDA	376-06-7	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.5	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
13C2-PFDA	SURR	89.7	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
d5-EtFOSAA	SURR	83.0	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

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

Results reported to the DL.

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

Sample ID: CBD-1RW40-0818 **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B8I0001-MS1/B8I0001-MSD1	Source Lab Sample:	1802841-01
Project:	CTO-08 PN:679580.14.FI-FS	QC Batch:	B8I0001	Date Extracted:	01-Sep-18
Matrix:	Aqueous	Samp Size:	0.261/0.261 L	Column:	BEH C18

Analyte	CAS Number	Sample (ng/L)	LFSM (ng/L)	LFSM Spike Amt	LFSM % Rec	LFSM Quals	LFSMD (ng/L)	LFSMD Spike Amt	LFSMD % Rec	RPD	LFSMD Quals	%Rec Limits	RPD Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
PFBS	375-73-5	ND	38.9	34.0	114		43.5	33.9	128	11.6		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHxA	307-24-4	ND	37.8	38.4	97.8		42.5	38.3	110	11.7		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHpA	375-85-9	ND	35.9	38.4	93.5		40.9	38.3	107	13.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFHxS	355-46-4	ND	35.0	34.9	100		39.2	34.9	112	11.3		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFOA	335-67-1	ND	38.1	38.4	98.5		42.8	38.3	111	11.9		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFNA	375-95-1	ND	32.6	38.4	85.0		37.3	38.3	97.3	13.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFOS	1763-23-1	ND	37.8	35.5	106		39.4	35.4	111	4.61		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFDA	335-76-2	ND	35.0	38.4	90.8		40.3	38.3	105	14.5		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
MeFOSAA	2355-31-9	ND	35.0	38.4	91.2		37.2	38.3	97.1	6.27		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
EtFOSAA	2991-50-6	ND	34.4	38.4	89.6		38.5	38.3	101	12.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFUnA	2058-94-8	ND	33.4	38.4	86.9		39.0	38.3	102	16.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFDoA	307-55-1	ND	34.2	38.4	89.2		38.6	38.3	101	12.4		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFTrDA	72629-94-8	ND	32.9	38.4	85.6		37.4	38.3	97.6	13.1		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1
PFTeDA	376-06-7	ND	30.4	38.4	79.2		34.5	38.3	90.2	13.0		70-130	30	04-Sep-18 15:48	1	04-Sep-18 16:01	1

Labeled Standards	Type	LFSM % Rec	LFSM Quals	LFSMD % Rec	LFSMD Quals	Limits	LFSM Analyzed	LFSM Dil	LFSMD Analyzed	LFS MD
13C2-PFHxA	SURR	87.9		97.9		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1
13C2-PFDA	SURR	82.6		93.0		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1
d5-EtFOSAA	SURR	79.1		83.8		70-130	04-Sep-18 15:48	1	04-Sep-18 16:01	1

Sample ID: CBD-1FB40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: QC Water
Date Collected: 30-Aug-18 15:25

Laboratory Data

Lab Sample: 1802841-02
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxA	307-24-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHpA	375-85-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxS	355-46-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOA	335-67-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFNA	375-95-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOS	1763-23-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDA	335-76-2	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
MeFOSAA	2355-31-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
EtFOSAA	2991-50-6	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFUnA	2058-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDoA	307-55-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTrDA	72629-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTeDA	376-06-7	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.9	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
13C2-PFDA	SURR	89.5	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
d5-EtFOSAA	SURR	89.2	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

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

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1802841 Temp: 0.9 °C
Storage ID: WR2 Storage Secured: Yes ☑ No ☐

Project ID: CTO-08 PN: 679580.14.F1.F5 PO#: 10100 1982 Sampler: ROBERT MCELHINNY (name)

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

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
TIFFANY HILL	CH2M	5701 CLEVELAND ST.	VIRGINIA BEACH	VA	541-768-3109	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ROBERT MCELHINNY	8-30-18	1605			
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	8/31/18 Date	1035 Time

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

ATTN: MARTHA MAIER

Method of Shipment: FEDEX

Tracking No.: 782527681180

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	PFAS Isotope Dilution: List of 21	List of 21 w/isomers	List of 24	List of 24 w/isomers	List of 28	Other: Please List Below	USEPA Method 537: PFOA/PFOS	UCMR3 PFAS List 8	PFAS List: 14	Comments
CBD-1RW40-0818	8-30-18	1523		2	PJ	DW									X	
CBD-1RW40-0818-MS	8-30-18	1523		2	PJ	DW									X	
CBD-1RW40-0818-SD	8-30-18	1523		2	PJ	DW									X	
CBD-1FB40-0818	8-30-18	1525		2	PJ	FB									X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
Name: TIFFANY HILL
Company: CH2M
Address: 5701 CLEVELAND ST
City: VA. BCH State: VA Zip: 23462
Phone: 541-768-3109 Fax:
Email:

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

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

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

Vista Analytical Laboratory

Sample Log in Checklist

PAGE # 1 of 1
WO# 1802841
SDG# –
TAT 7 DAYS

Section 1: Container Receipt

Delivered By: ☑ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other:

Number of Containers	Arrival Date	Arrival time	Cooler Received LR-SLC Initiated By/Date
1	08/31/18	0912	KE 8/31/18

Section 2: Sample Receipt Condition and Initial Storage

Container Condition	Chain of Custody	Preservation Type	Temperature	Storage Location	Initials/ Date
☑ Shipping container intact ☑ Shipping seals intact ☑ Custody Seals present ☑ Custody seals intact	☑ COC present ☐ Multiple COC's: ☑ "Relinquished By" Section complete	☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ Other	Thermometer ID: **IR-4** ☐ Probe used Temp (uncorrected): 1.0 °C Temp (corrected): 0.9 °C	☑ WR2 ☐ WF2 ☐ NA	KE 8/31/18

Section 3: Sample Log In

Airbill/Trk # 7825 2768 1180

	By/date
Shipping container ☐ Vista ☑ Client ☐ Retain ☑ Return ☐ Dispose	
Log In Time: 1156	KE 8/31/18
COC clearly identifies: • Sample name • Sample matrix • Test method • Sample collection date or time • Collector's name • Preservation type	☑ Acceptable ☐ Not acceptable – anomaly form required KE 8/31/18
All samples present and accounted for on COC	KE 8/31/18
Sample IDs are legible	KE 8/31/18
Samples conform to the description on the COC	KE 8/31/18
Samples are intact and suitable for testing	KE 8/31/18
Preservation documented as required: ☐ NA ☐ $Na_2S_2O_3$ ☑ Trizma ☐ Other _____	KE 8/31/18
Samples stored ☑ WR2 Shelf: F3/B4 ☐ WF2 Shelf: _____ ☐ R1 Shelf: _____	KE 8/31/18
Comments: N/A	–

EXTRACTION INFORMATION

Process Sheet

Workorder: 1802841

RUSH

Prep Expiration: 2018-Sep-13
Client: CH2M Hill

Workorder Due: 07-Sep-18 00:00

TAT: 7

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

Prep Batch: B8I0001

Prep Data Entered: 9/4/18 GE
Date and Initials

Version: 537 (14 Analytes)
DoD: DoD QSM 5.1

Initial Sequence: S8I0008

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1802841-01	A	☑	☑	CBD-1RW40-0818	**MS/MSD**	WR-2 A-3	HDPE Bottle, 250 mL
1802841-02	↓	☑	☑	CBD-1FB40-0818		WR-2 A-3	HDPE Bottle, 250 mL

Pre-Prep Check Out: KC 9/1/18
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: KC 9/1/18
Spike Reconciled Initals/Date: MJ 09/01/18
VialBoxID: Lee

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DW DoD Unmodified
Method: 537 PFAS DW Unmodified
Method: 537 PFAS DW Unmodified MI Sp Sig Digs

B8I0001

Prepared using: LCMS - SPE Extraction-LCMS

Chemist: KC
Prep Date: 9/1/18
Prep Time: 1115

BalanceID: HRM5-0

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g) ~C 9/4/18	Sample Amt. (L) ~C 9/4/18	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B8I0001-BLK1 (A)	NA	NA	(0.250) ✓	KC MJ 9/1/18	AE 9/1/18	AE JR 9/4/18
☐	B8I0001-BS1	↓	↓	(0.250) ✓	↓	↓	↓
☐	B8I0001-MS1 1802841-01	288.80	28.28	0.26052 ✓	↓	↓	↓
☐	B8I0001-MSD1 1802841-01	287.88	26.93	0.26095 ✓	↓	↓	↓
☐	1802785-01	278.10	27.50	0.25060	↓	↓	↓
☐	1802786-01	280.91	28.18	0.25273	↓	↓	↓
☐	1802787-01	285.44	27.31	0.25813	↓	↓	↓
☐	1802788-01	279.34	27.33	0.25201	↓	↓	↓
☐	1802789-01	278.66	27.53	0.25113	↓	↓	↓
☐	1802790-01	285.55	27.45	0.25810	↓	↓	↓
☐	1802841-01	286.49	27.09	0.25940 ✓	↓	↓	↓
☐	1802841-02	292.69	28.11	0.26458 ✓	↓	↓	↓

SS/IS: 18H1309, 20 µL (V2)
NS: 18G2506, 10 µL (V1) 9/1/18 AE
IS/RS: 18H1310, 10 µL (V2) 20 mL

SPE Chem: Strata-X 33 µm 500 mg / 6 mL
Lot#: 518-003824
Ele SOLV: MeOH
Lot#: JB069209
Final Volume(s): 1 mL

Notes: (A) Trizma added. KC 9/1/18

Comments: Assume 1 g = 1 mL
Cen = Centrifuged

Batch: B8I0001

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1802785-01	0.2506 ✓	NA	NA	1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802786-01	0.25273 ✓	↓	↓	1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802787-01	0.25813 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802788-01	0.25201 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802789-01	0.25113 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802790-01	0.2581 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802841-01	0.2594 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW DoD Unmoc
1802841-01RE1	0.2594 ✓			1000	01-Sep-18 11:15	KC			Drinking Water	537 PFAS DW Unmodified
1802841-02	0.26458 ✓			1000	01-Sep-18 11:15	KC			QC Water	537 PFAS DW DoD Unmoc
B8I0001-BLK1	0.25 ✓			1000	01-Sep-18 11:15	KC				QC
B8I0001-BS1	0.25 ✓			1000	01-Sep-18 11:15	KC	18G2506 ✓	10 ✓		QC
B8I0001-MS1	0.26052 ✓			1000	01-Sep-18 11:15	JMR	18G2506 ✓	10 ✓		QC
B8I0001-MSD1	0.26095 ✓	↓	↓	1000	01-Sep-18 11:15	JMR	18G2506 ✓	10 ✓		QC

~C 9/4/18

Printed: 9/4/2018 8:23:43AM

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-31.qld

Last Altered: Wednesday, September 05, 2018 09:25:25 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:26:07 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_31, Date: 04-Sep-2018, Time: 15:22:04, ID: B8I0001-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	298.6> 80.5		2.16e4	0.250		2.93				
2	2	PFHxA	312.7 > 268.8	4.74e1	1.33e4	0.250		3.27	3.29	0.0356	0.201	
3	3	PFHpA	362.7 > 318.8	3.18e1	1.33e4	0.250		3.78	3.78	0.0239	0.123	
4	4	PFHxS	398.7 > 80.7	8.78e-1	2.16e4	0.250		3.93	3.83	0.00117	0.00565	
5	5	PFOA	412.8 > 369.0	6.84e1	1.33e4	0.250		4.21	4.21	0.0514	0.282	
6	6	PFNA	462.9 > 419.1		1.33e4	0.250		4.57				
7	7	PFOS	498.8 >80.7		2.16e4	0.250		4.67				
8	8	PFDA	512.8 > 469.0	5.96e1	1.33e4	0.250		4.89	4.92	0.0448	0.202	
9	9	N-MeFOSAA	569.7 > 419.0		1.79e4	0.250		5.03				
10	10	N-EtFOSAA	583.6 >419.1		1.79e4	0.250		5.16				
11	11	PFUnA	562.7 > 518.9		1.33e4	0.250		5.14				
12	12	PFDoA	612.5 > 319.0		1.33e4	0.250		5.38				
13	13	PFTrDA	662.4 > 618.7		1.33e4	0.250		5.58				
14	14	PFTeDA	712.2>668.4		1.33e4	0.250		5.76				
15	15	13C2-PFHxA	314.8 > 269.9	7.94e3	1.33e4	0.250	0.651	3.38	3.29	5.96	36.6	91.6
16	16	13C2-PFDA	514.8 > 470.0	1.29e4	1.33e4	0.250	1.028	4.80	4.92	9.72	37.8	94.5
17	17	d5-N-EtFOSAA	588.7> 419.1	2.28e4	1.79e4	0.250	1.457	5.03	5.15	51.0	140	87.5
18	18	13C2-PFOA	414.7 > 369.9	1.33e4	1.33e4	0.250	1.000	4.22	4.21	10.0	40.0	100.0
19	19	13C4-PFOS	502.8>80.5	2.16e4	2.16e4	0.250	1.000	4.65	4.66	28.7	115	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.79e4	1.79e4	0.250	1.000	5.02	5.03	40.0	160	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

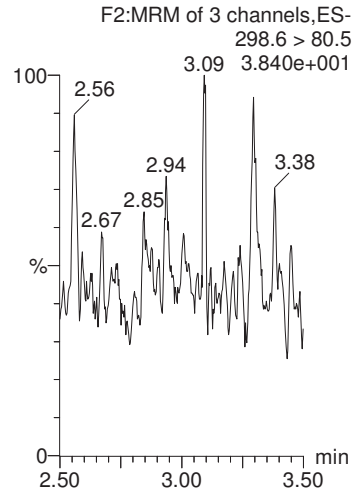
Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-31.qld

Last Altered: Wednesday, September 05, 2018 09:25:25 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:26:07 Pacific Daylight Time

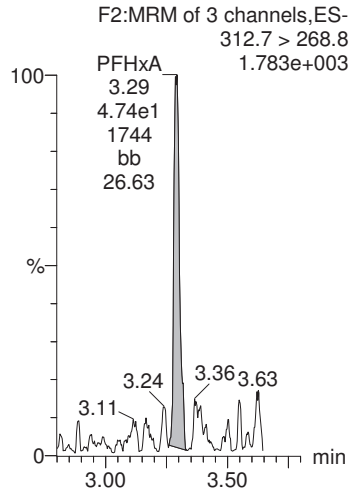
Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_31, Date: 04-Sep-2018, Time: 15:22:04, ID: B8I0001-BLK1 LRB 0.25, Description: LRB

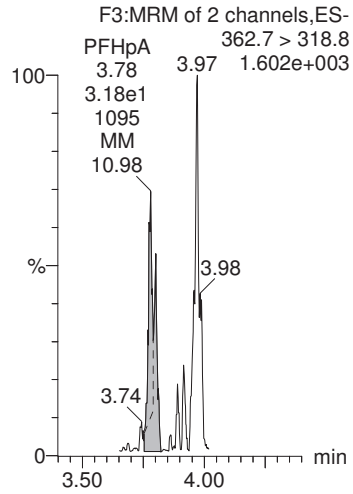
PFBS



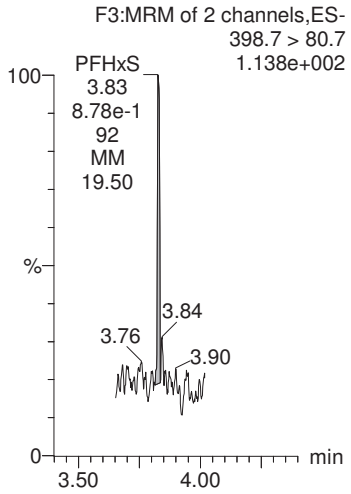
PFHxA



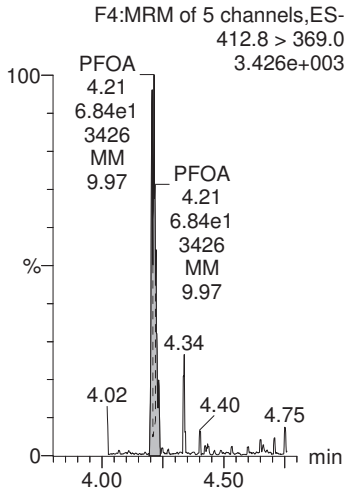
PFHpA



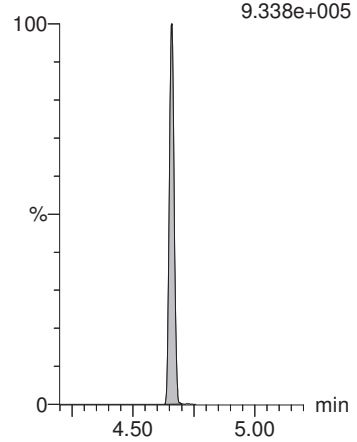
PFHxS



PFOA



13C4-PFOS



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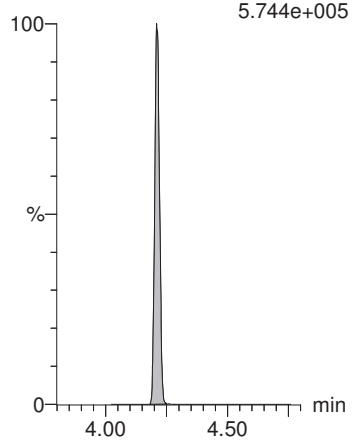

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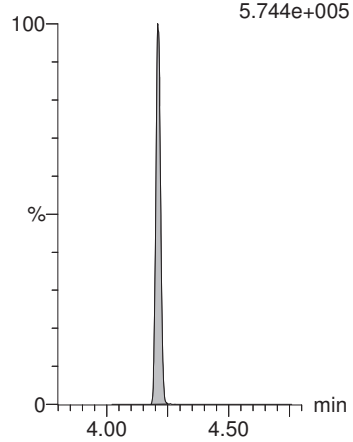

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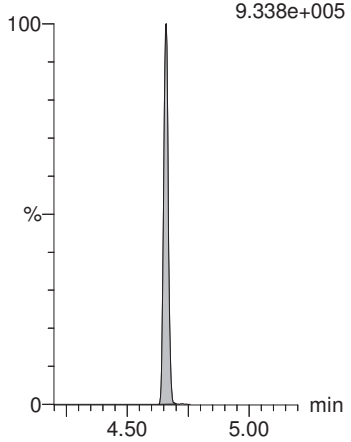

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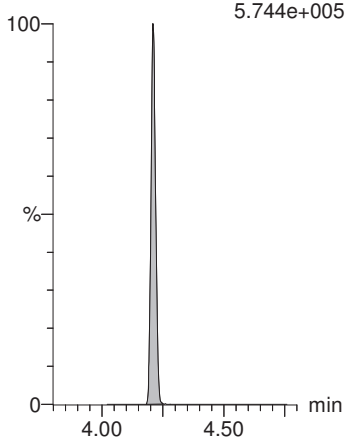


CGH 9/5/2018

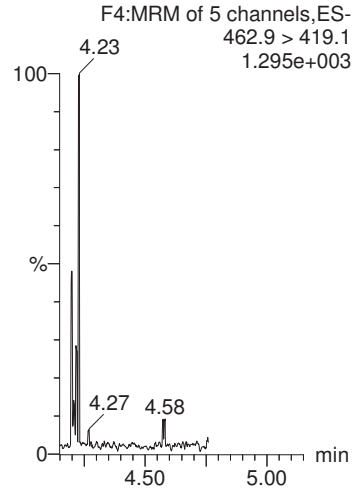
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-31.qld

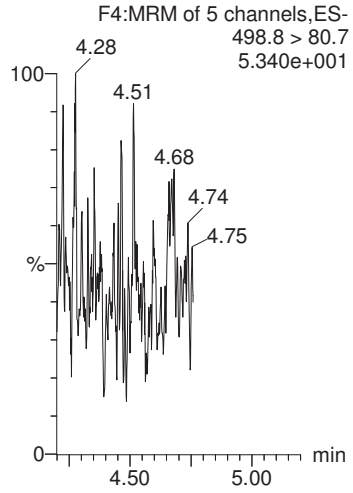
Last Altered: Wednesday, September 05, 2018 09:25:25 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:26:07 Pacific Daylight Time

Name: 180904G1_31, Date: 04-Sep-2018, Time: 15:22:04, ID: B8I0001-BLK1 LRB 0.25, Description: LRB

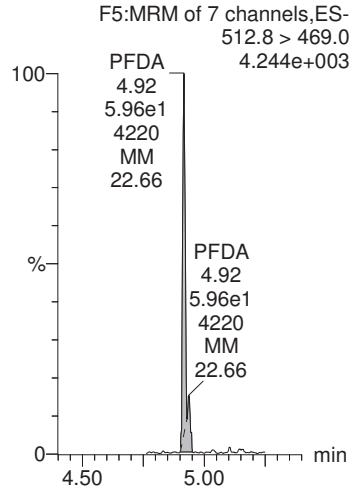
PFNA



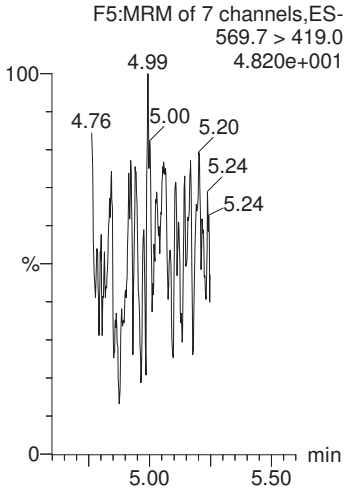
PFOS



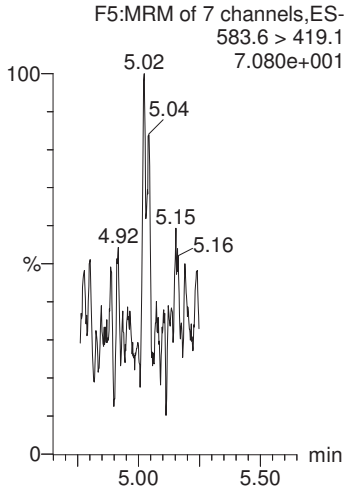
PFDA



N-MeFOSAA



N-EtFOSAA



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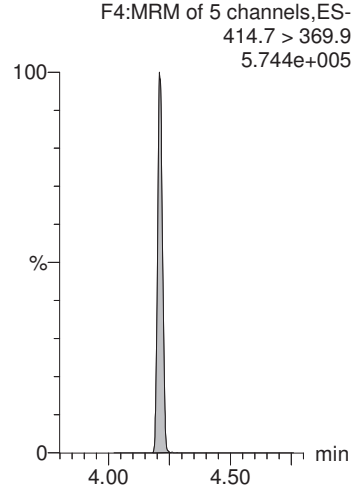

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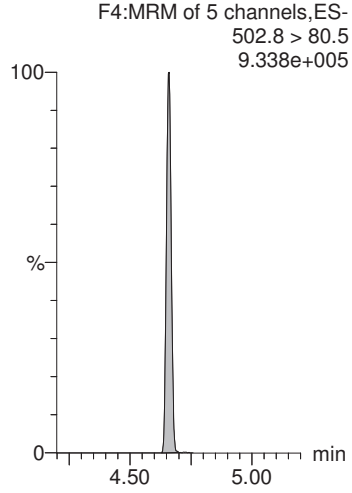

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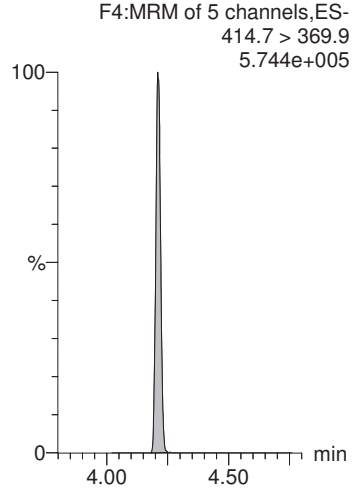
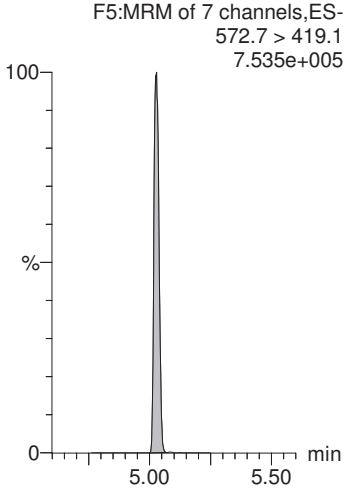
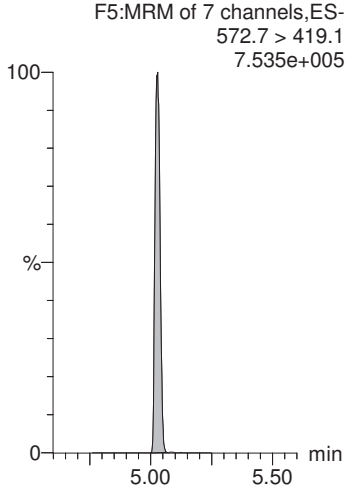


d3-N-MeFOSAA



d3-N-MeFOSAA



CGH 9/5/2018

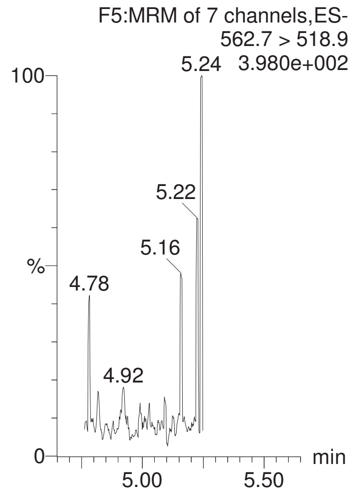
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-31.qld

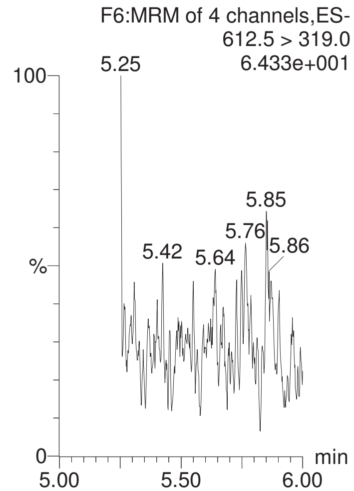
Last Altered: Wednesday, September 05, 2018 09:25:25 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:26:07 Pacific Daylight Time

Name: 180904G1_31, Date: 04-Sep-2018, Time: 15:22:04, ID: B8I0001-BLK1 LRB 0.25, Description: LRB

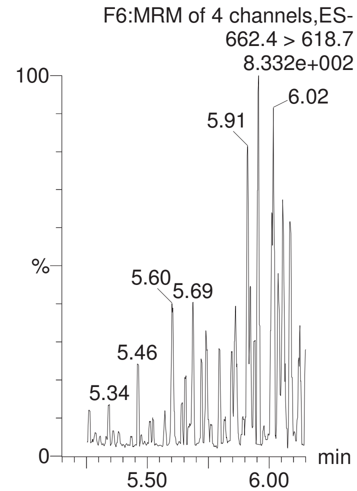
PFUnA



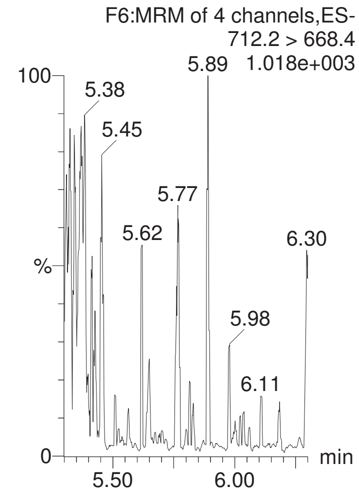
PFDoA



PFTrDA



PFTeDA



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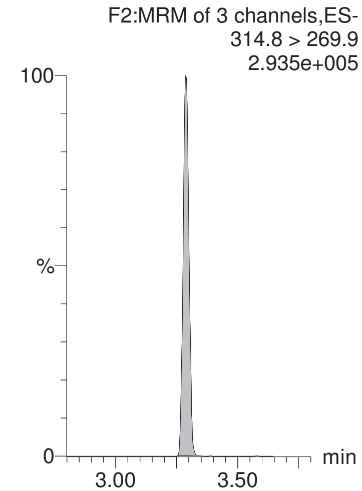

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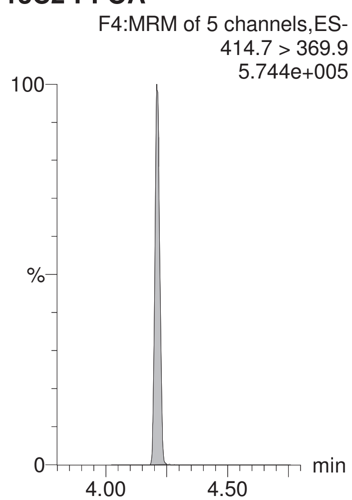

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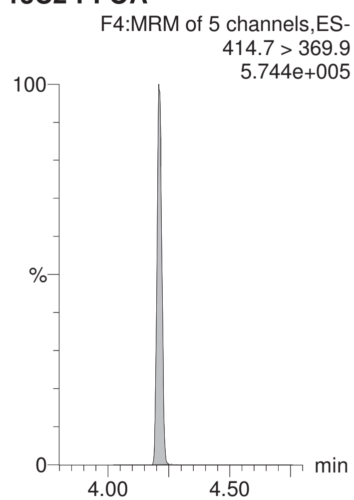

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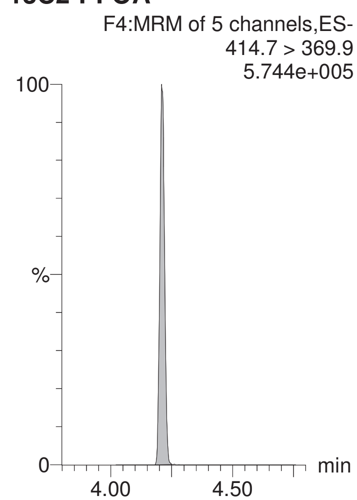

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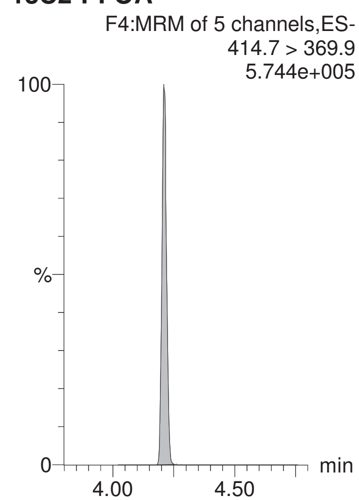

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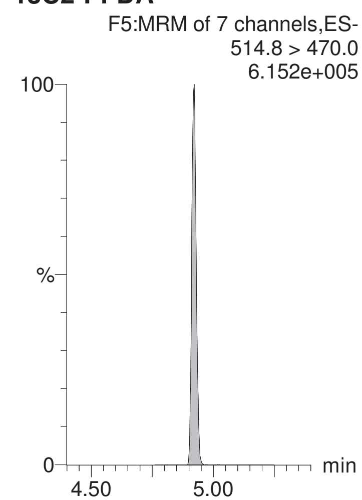


CGH 9/5/2018

Vista Analytical Laboratory

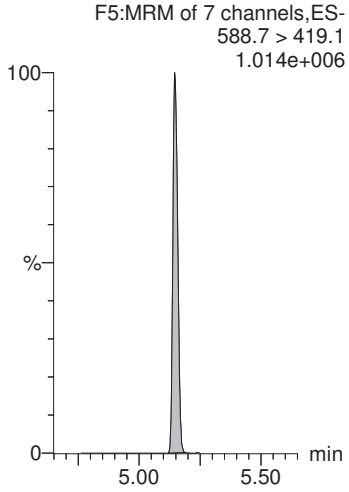
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-31.qld

Last Altered: Wednesday, September 05, 2018 09:25:25 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:26:07 Pacific Daylight Time

Name: 180904G1_31, Date: 04-Sep-2018, Time: 15:22:04, ID: B8I0001-BLK1 LRB 0.25, Description: LRB

d5-N-EtFOSAA



CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-32.qld

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Printed: Wednesday, September 05, 2018 09:23:46 Pacific Daylight Time

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Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_32, Date: 04-Sep-2018, Time: 15:35:05, ID: B8I0001-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	298.6> 80.5	4.86e3	2.02e4	0.250		2.93	2.93	6.92	43.0	121.7
2	2	PFHxA	312.7 > 268.8	9.94e3	1.22e4	0.250		3.28	3.29	8.18	46.2	115.4
3	3	PFHpA	362.7 > 318.8	1.04e4	1.22e4	0.250		3.79	3.80	8.51	43.7	109.3
4	4	PFHxS	398.7 > 80.7	6.12e3	2.02e4	0.250		3.93	3.91	8.71	42.1	115.5
5	5	PFOA	412.8 > 369.0	1.02e4	1.22e4	0.250		4.21	4.21	8.41	46.1	115.1
6	6	PFNA	462.9 > 419.1	1.02e4	1.22e4	0.250		4.58	4.59	8.41	39.2	98.1
7	7	PFOS	498.8 >80.7	2.40e3	2.02e4	0.250		4.67	4.66	3.42	43.7	118.2
8	8	PFDA	512.8 > 469.0	1.15e4	1.22e4	0.250		4.89	4.92	9.47	42.7	106.7
9	9	N-MeFOSAA	569.7 > 419.0	5.42e3	1.69e4	0.250		5.03	5.03	12.9	40.8	102.0
10	10	N-EtFOSAA	583.6 >419.1	5.19e3	1.69e4	0.250		5.15	5.16	12.3	42.6	106.6
11	11	PFUnA	562.7 > 518.9	1.27e4	1.22e4	0.250		5.15	5.17	10.4	42.9	107.2
12	12	PFDoA	612.5 > 319.0	2.01e3	1.22e4	0.250		5.38	5.39	1.65	43.1	107.7
13	13	PFTrDA	662.4 > 618.7	1.23e4	1.22e4	0.250		5.59	5.59	10.1	41.2	103.1
14	14	PFTeDA	712.2>668.4	1.23e4	1.22e4	0.250		5.76	5.77	10.2	39.7	99.1
15	15	13C2-PFHxA	314.8 > 269.9	7.68e3	1.22e4	0.250	0.651	3.38	3.29	6.32	38.8	97.0
16	16	13C2-PFDA	514.8 > 470.0	1.24e4	1.22e4	0.250	1.028	4.80	4.92	10.2	39.6	99.0
17	17	d5-N-EtFOSAA	588.7> 419.1	2.36e4	1.69e4	0.250	1.457	5.03	5.15	55.9	153	95.9
18	18	13C2-PFOA	414.7 > 369.9	1.22e4	1.22e4	0.250	1.000	4.22	4.21	10.0	40.0	100.0
19	19	13C4-PFOS	502.8>80.5	2.02e4	2.02e4	0.250	1.000	4.65	4.66	28.7	115	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.69e4	1.69e4	0.250	1.000	5.02	5.03	40.0	160	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

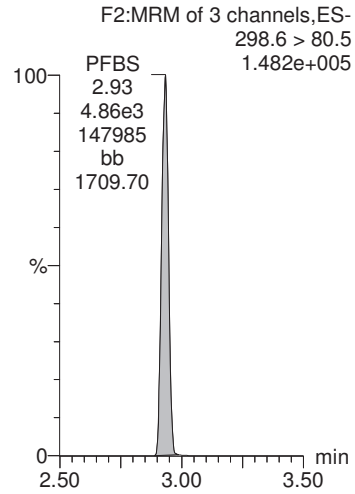
Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-32.qld

Last Altered: Wednesday, September 05, 2018 09:22:55 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:23:46 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_32, Date: 04-Sep-2018, Time: 15:35:05, ID: B8I0001-BS1 LFB 0.25, Description: LFB

PFBS



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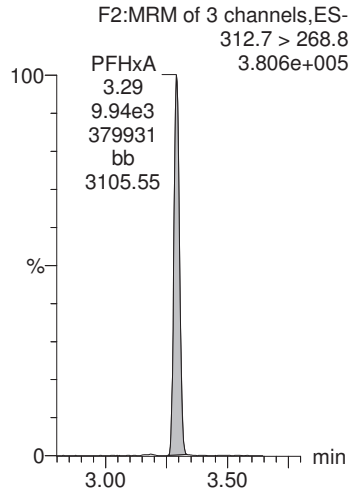
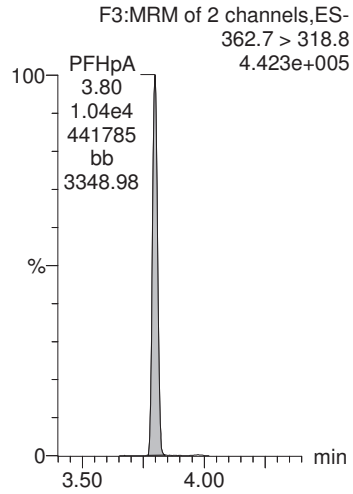


PFHpA



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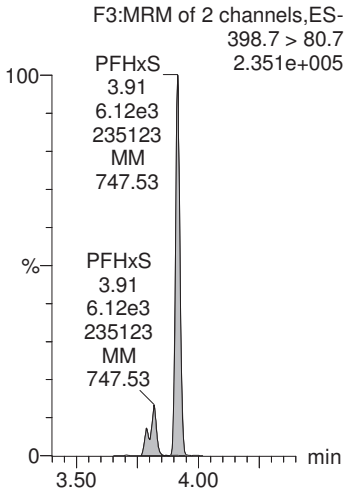

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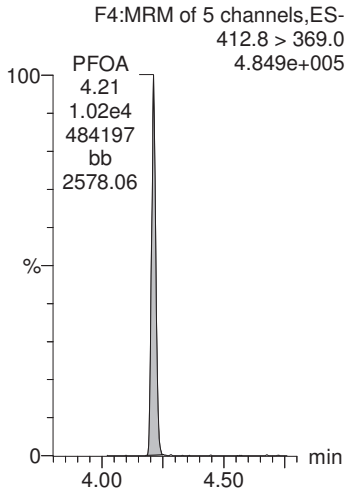

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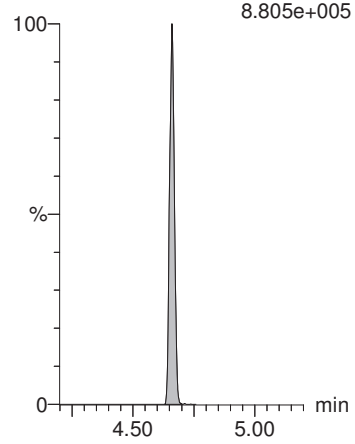

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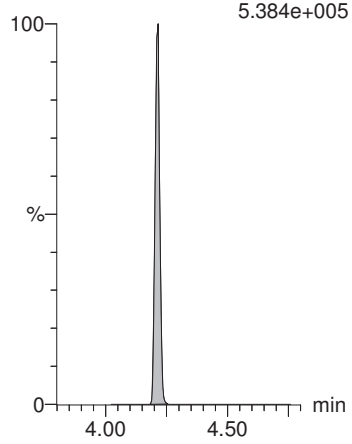

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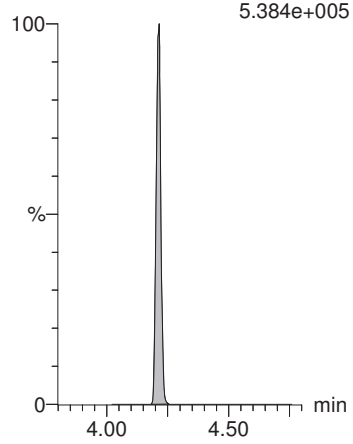

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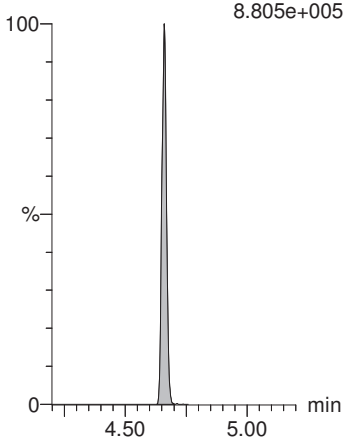

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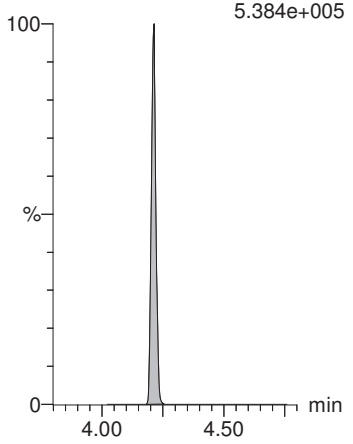

CGH 9/5/2018

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-32.qld

Last Altered: Wednesday, September 05, 2018 09:22:55 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:23:46 Pacific Daylight Time

Name: 180904G1_32, Date: 04-Sep-2018, Time: 15:35:05, ID: B8I0001-BS1 LFB 0.25, Description: LFB

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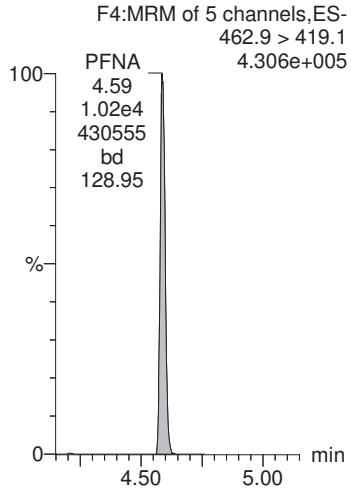

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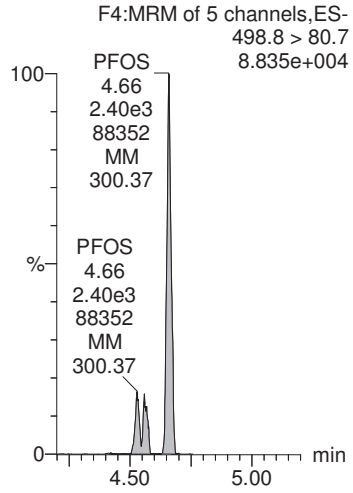

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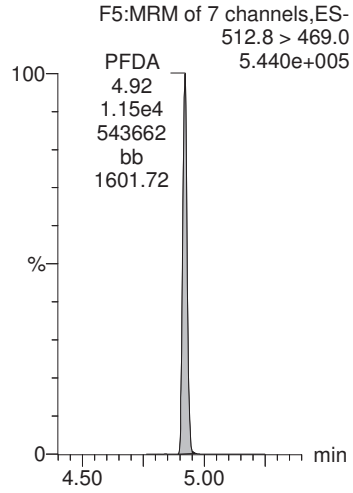
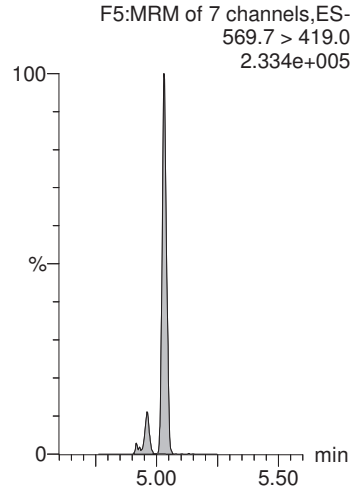


N-MeFOSAA



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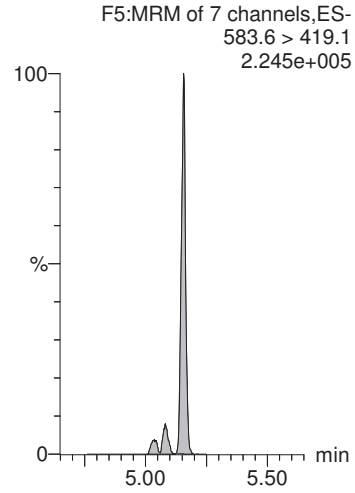

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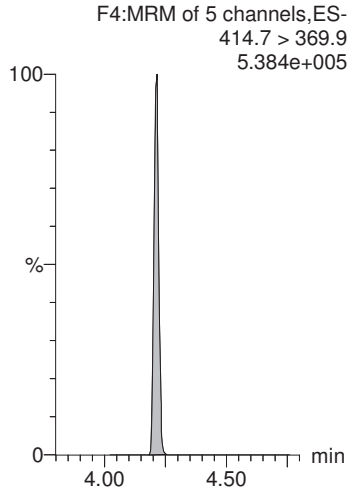

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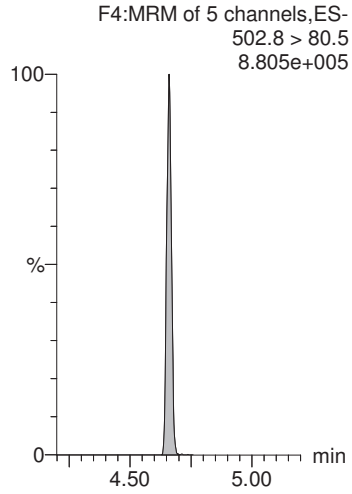

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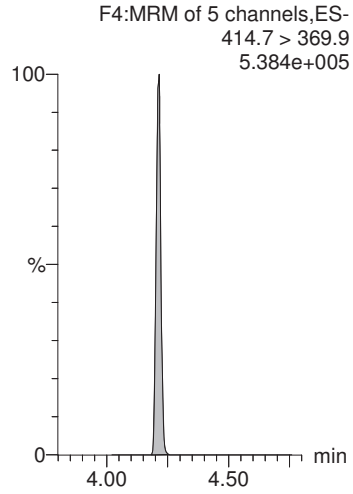

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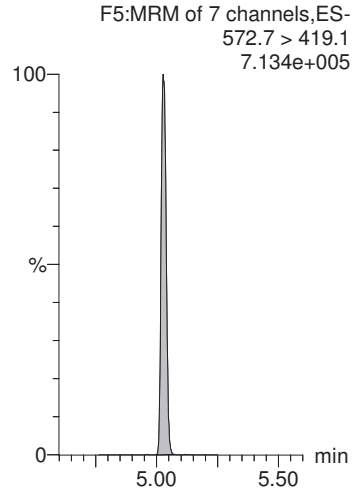

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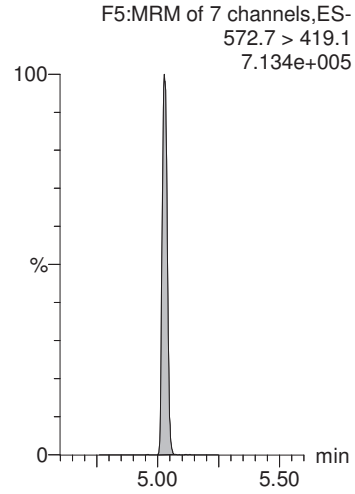

CGH 9/5/2018

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-32.qld

Last Altered: Wednesday, September 05, 2018 09:22:55 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:23:46 Pacific Daylight Time

Name: 180904G1_32, Date: 04-Sep-2018, Time: 15:35:05, ID: B8I0001-BS1 LFB 0.25, Description: LFB

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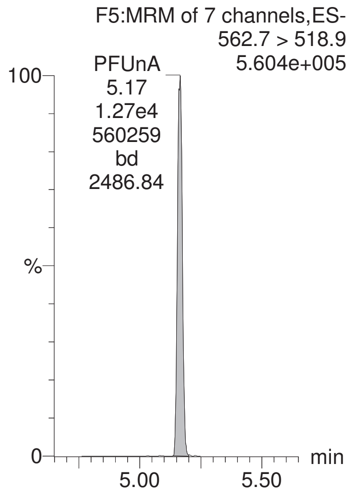

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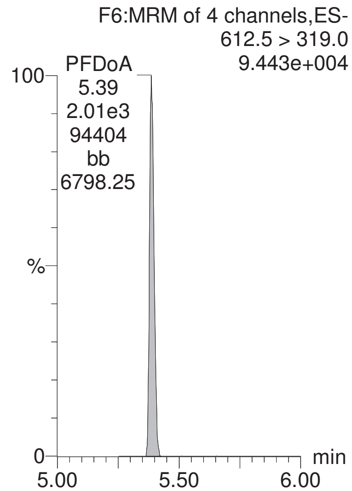

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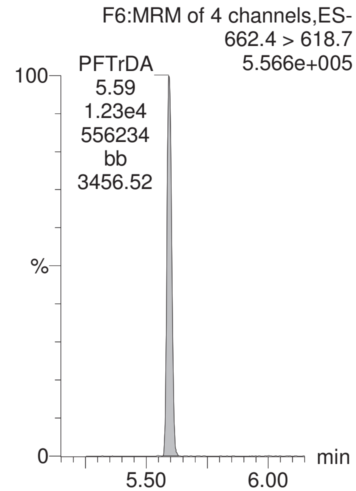
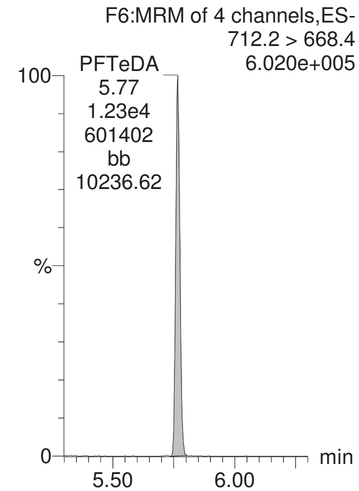


PFTeDA



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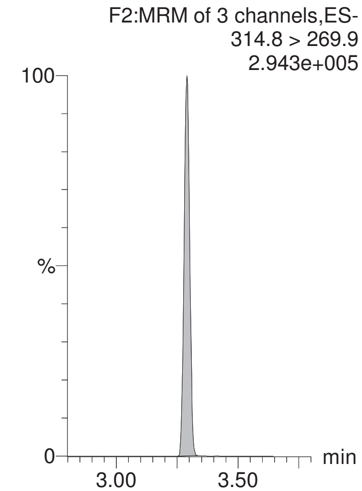

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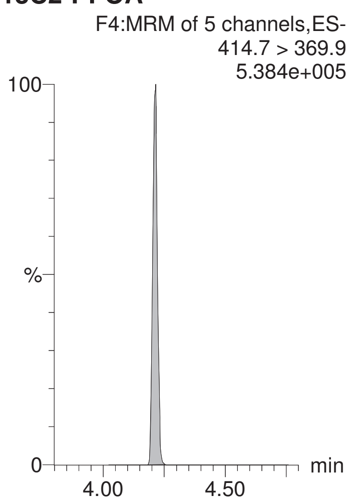

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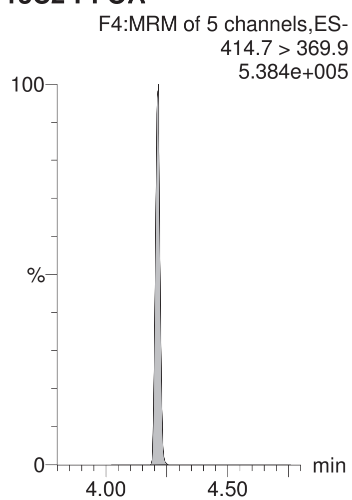

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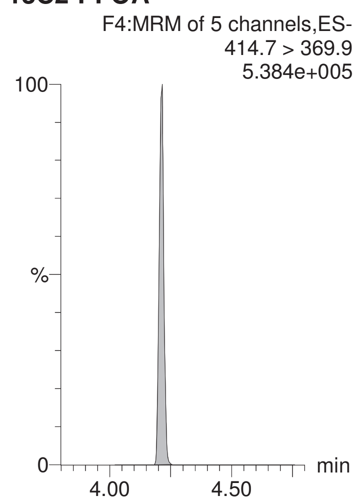

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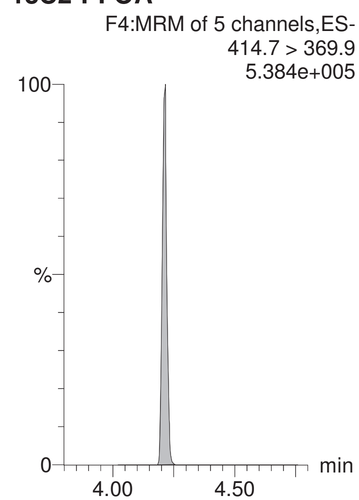

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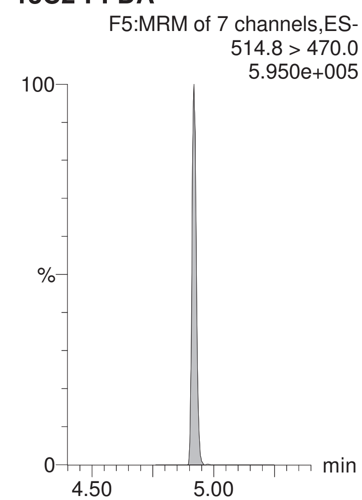


CGH 9/5/2018

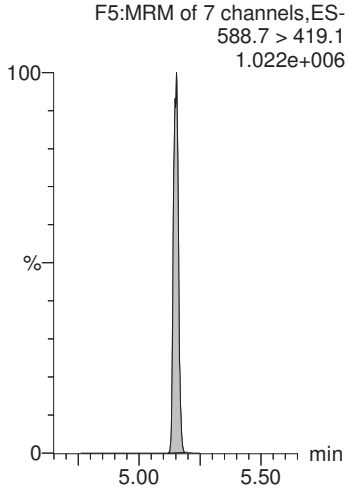
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-32.qld

Last Altered: Wednesday, September 05, 2018 09:22:55 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:23:46 Pacific Daylight Time

Name: 180904G1_32, Date: 04-Sep-2018, Time: 15:35:05, ID: B8I0001-BS1 LFB 0.25, Description: LFB

d5-N-EtFOSAA



CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-35.qld

Last Altered: Wednesday, September 05, 2018 09:32:35 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:33:20 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_35, Date: 04-Sep-2018, Time: 16:14:02, ID: 1802841-01 CBD-1RW40-0818 0.2594, Description: CBD-1RW40-0818

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	298.6> 80.5		2.19e4	0.259		2.93				
2	2	PFHxA	312.7 > 268.8	5.25e1	1.31e4	0.259		3.28	3.30	0.0401	0.218	
3	3	PFHpA	362.7 > 318.8		1.31e4	0.259		3.79				
4	4	PFHxS	398.7 > 80.7		2.19e4	0.259		3.93				
5	5	PFOA	412.8 > 369.0	6.66e1	1.31e4	0.259		4.21	4.22	0.0509	0.269	
6	6	PFNA	462.9 > 419.1		1.31e4	0.259		4.58				
7	7	PFOS	498.8 >80.7		2.19e4	0.259		4.67				
8	8	PFDA	512.8 > 469.0	4.37e1	1.31e4	0.259		4.89	4.94	0.0334	0.145	
9	9	N-MeFOSAA	569.7 > 419.0	3.67e0	1.78e4	0.259		5.03	5.02	0.00826	0.0252	
10	10	N-EtFOSAA	583.6 >419.1		1.78e4	0.259		5.16				
11	11	PFUnA	562.7 > 518.9		1.31e4	0.259		5.15				
12	12	PFDoA	612.5 > 319.0		1.31e4	0.259		5.38				
13	13	PFTrDA	662.4 > 618.7		1.31e4	0.259		5.59				
14	14	PFTeDA	712.2>668.4		1.31e4	0.259		5.76				
15	15	13C2-PFHxA	314.8 > 269.9	7.20e3	1.31e4	0.259	0.651	3.38	3.29	5.50	32.6	84.5
16	16	13C2-PFDA	514.8 > 470.0	1.21e4	1.31e4	0.259	1.028	4.80	4.92	9.22	34.6	89.7
17	17	d5-N-EtFOSAA	588.7> 419.1	2.15e4	1.78e4	0.259	1.457	5.03	5.15	48.4	128	83.0
18	18	13C2-PFOA	414.7 > 369.9	1.31e4	1.31e4	0.259	1.000	4.22	4.21	10.0	38.6	100.0
19	19	13C4-PFOS	502.8>80.5	2.19e4	2.19e4	0.259	1.000	4.65	4.66	28.7	111	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.78e4	1.78e4	0.259	1.000	5.02	5.03	40.0	154	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-35.qld

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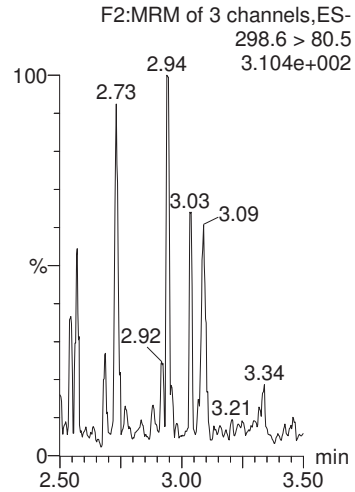
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_35, Date: 04-Sep-2018, Time: 16:14:02, ID: 1802841-01 CBD-1RW40-0818 0.2594, Description: CBD-1RW40-0818

PFBS



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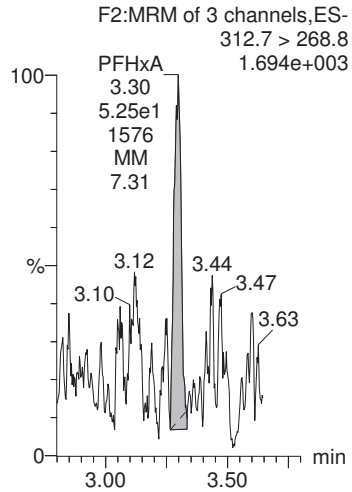

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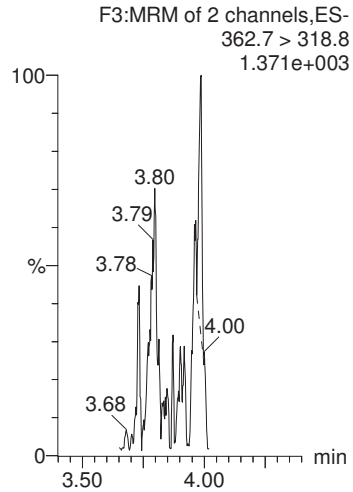

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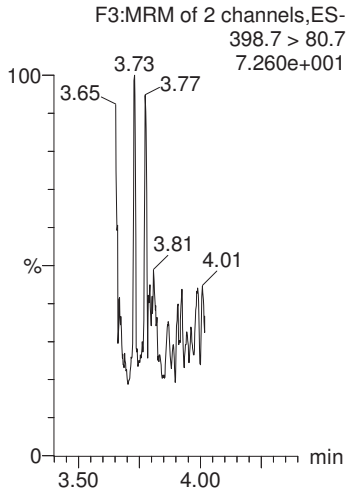

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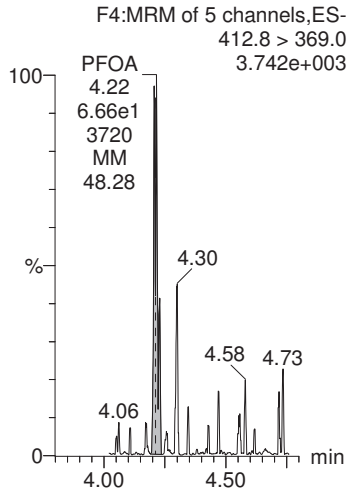

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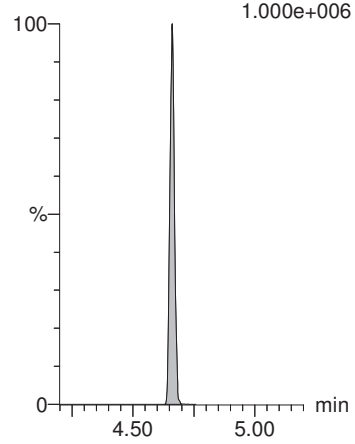

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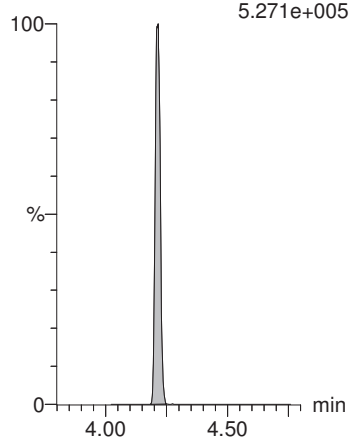

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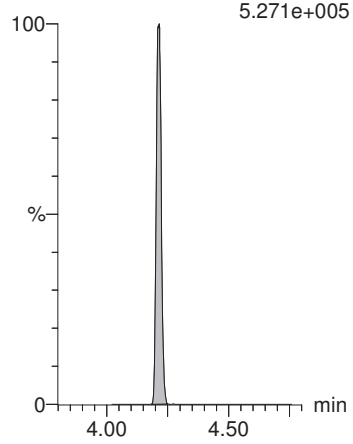

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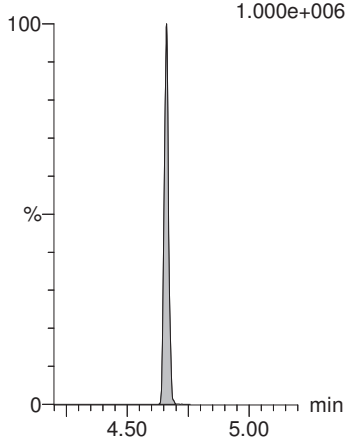

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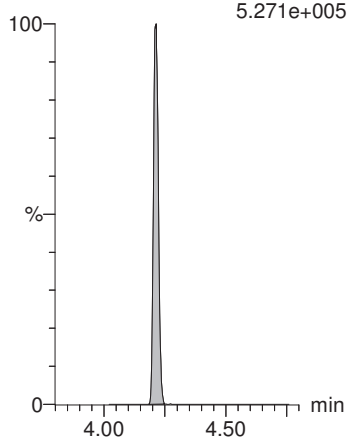

CGH 9/5/2018

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-35.qld

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Printed: Wednesday, September 05, 2018 09:33:20 Pacific Daylight Time

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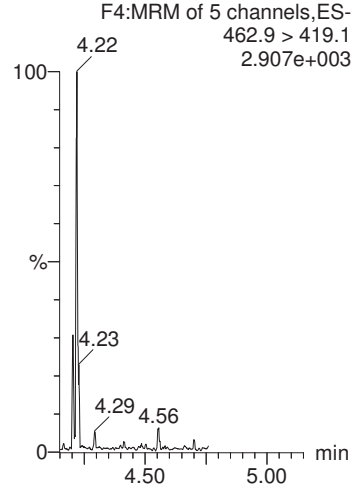
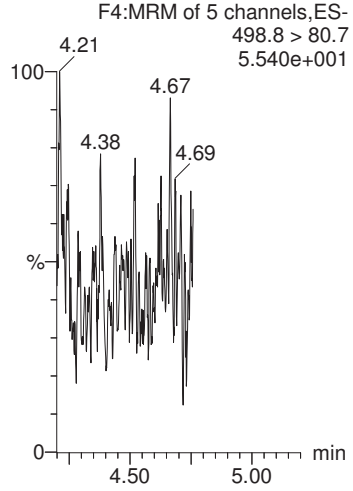
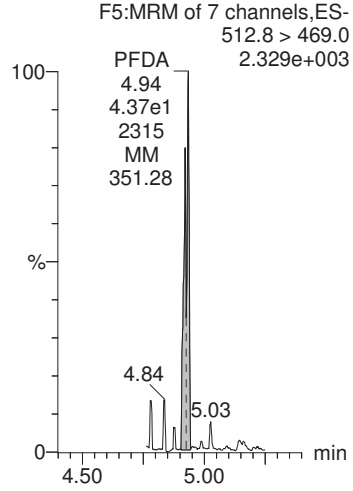
PFNA



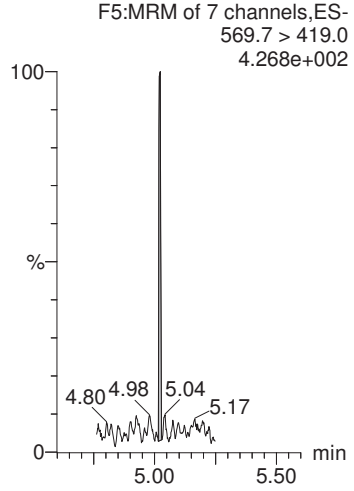
PFOS



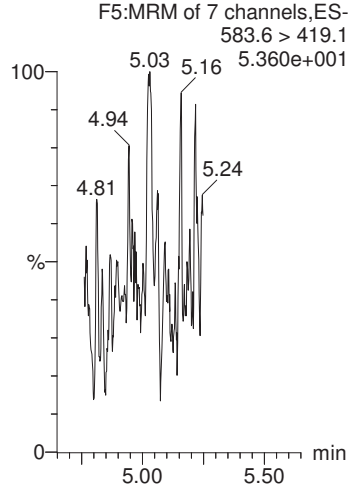
PFDA



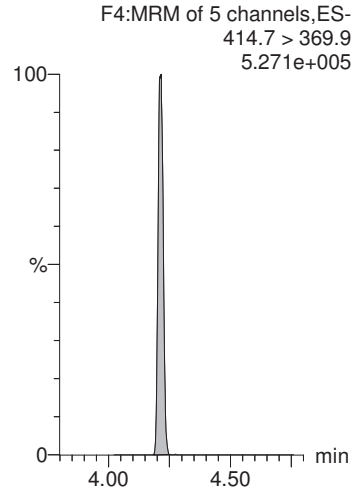
N-MeFOSAA



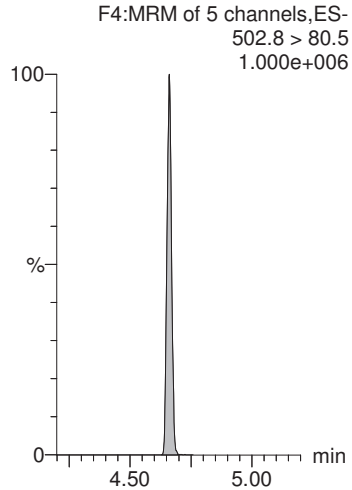
N-EtFOSAA



13C2-PFOA



13C4-PFOS



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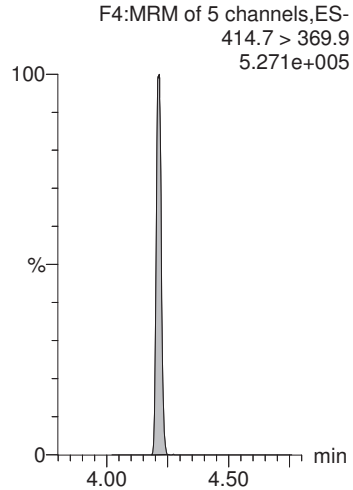
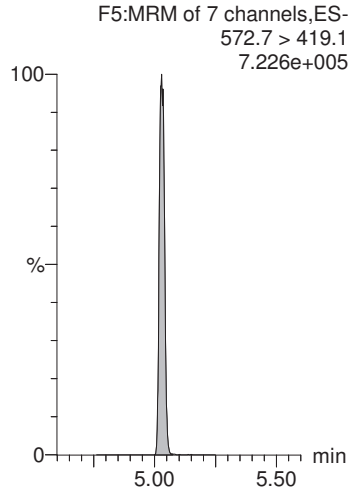
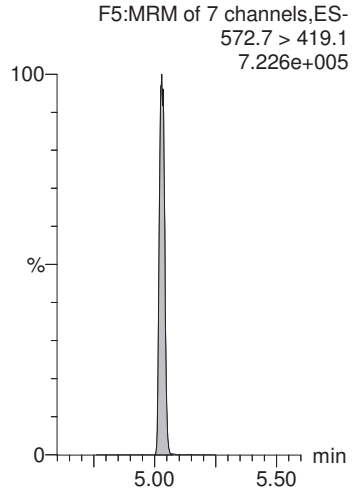


d3-N-MeFOSAA



d3-N-MeFOSAA



CGH 9/5/2018

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-35.qld

Last Altered: Wednesday, September 05, 2018 09:32:35 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:33:20 Pacific Daylight Time

Name: 180904G1_35, Date: 04-Sep-2018, Time: 16:14:02, ID: 1802841-01 CBD-1RW40-0818 0.2594, Description: CBD-1RW40-0818

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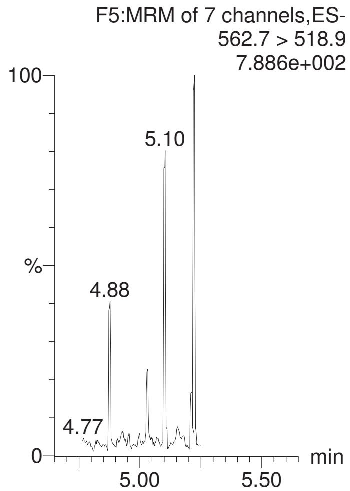
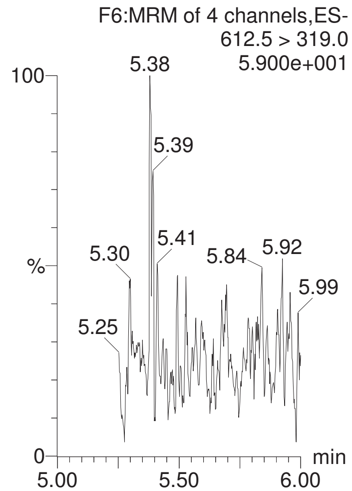
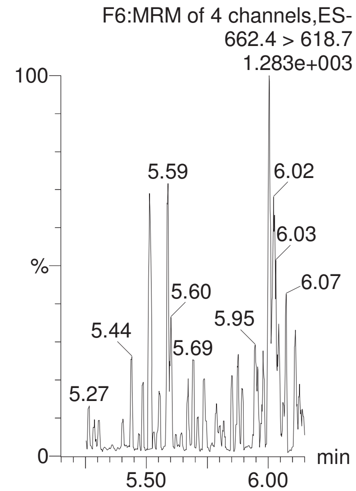


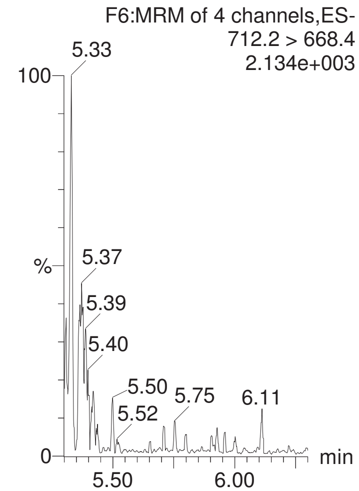
PFDoA



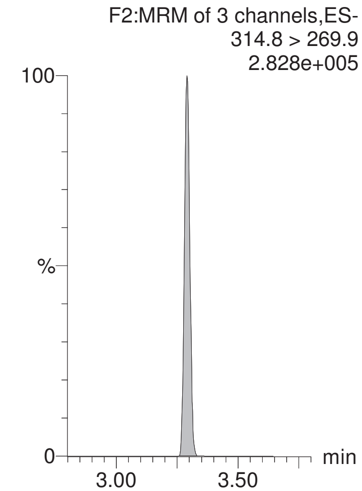
PFTrDA



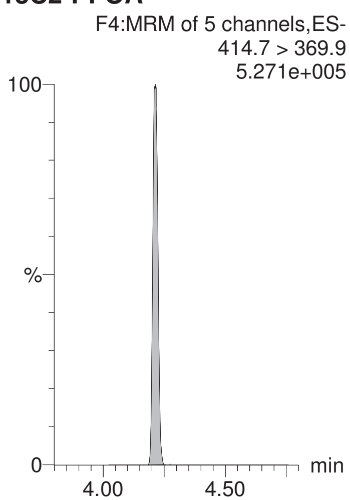
PFTeDA



13C2-PFHxA



13C2-PFOA



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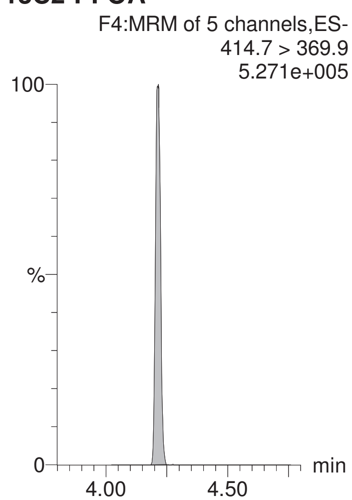

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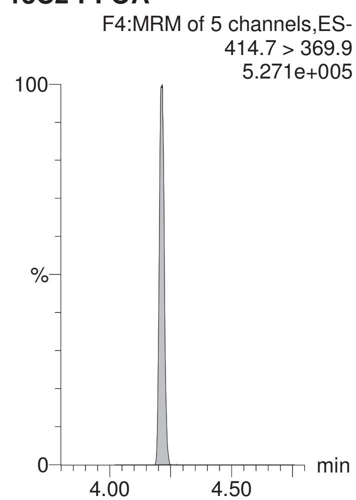

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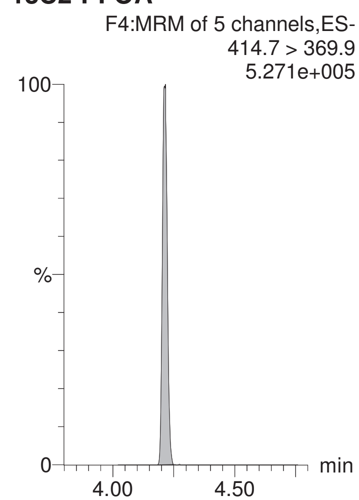

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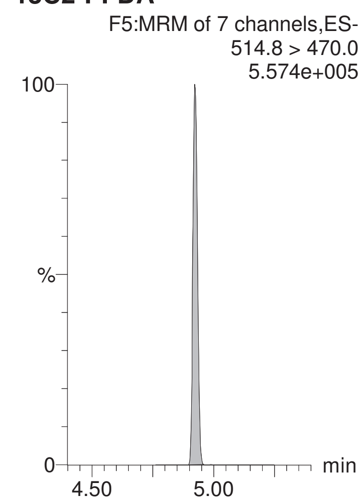


CGH 9/5/2018

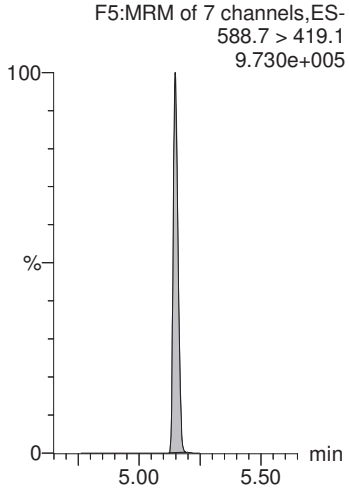
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-35.qld

Last Altered: Wednesday, September 05, 2018 09:32:35 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:33:20 Pacific Daylight Time

Name: 180904G1_35, Date: 04-Sep-2018, Time: 16:14:02, ID: 1802841-01 CBD-1RW40-0818 0.2594, Description: CBD-1RW40-0818

d5-N-EtFOSAA



CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-33.qld

Last Altered: Wednesday, September 05, 2018 09:28:00 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:28:41 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_33, Date: 04-Sep-2018, Time: 15:48:07, ID: B8I0001-MS1 LFSM 0.26052, Description: LFSM

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	298.6> 80.5	4.85e3	2.14e4	0.261		2.93	2.93	6.51	38.9	
2	2	PFHxA	312.7 > 268.8	9.21e3	1.32e4	0.261		3.27	3.29	6.97	37.8	
3	3	PFHpA	362.7 > 318.8	9.62e3	1.32e4	0.261		3.79	3.80	7.28	35.9	
4	4	PFHxS	398.7 > 80.7	5.62e3	2.14e4	0.261		3.93	3.92	7.54	35.0	
5	5	PFOA	412.8 > 369.0	9.57e3	1.32e4	0.261		4.21	4.21	7.25	38.1	
6	6	PFNA	462.9 > 419.1	9.63e3	1.32e4	0.261		4.57	4.58	7.29	32.6	
7	7	PFOS	498.8 >80.7	2.29e3	2.14e4	0.261		4.67	4.66	3.08	37.8	
8	8	PFDA	512.8 > 469.0	1.07e4	1.32e4	0.261		4.89	4.93	8.10	35.0	
9	9	N-MeFOSAA	569.7 > 419.0	5.12e3	1.78e4	0.261		5.04	5.04	11.5	35.0	
10	10	N-EtFOSAA	583.6 >419.1	4.61e3	1.78e4	0.261		5.16	5.16	10.4	34.4	
11	11	PFUnA	562.7 > 518.9	1.12e4	1.32e4	0.261		5.14	5.17	8.46	33.4	
12	12	PFDoA	612.5 > 319.0	1.81e3	1.32e4	0.261		5.38	5.39	1.37	34.2	
13	13	PFTrDA	662.4 > 618.7	1.11e4	1.32e4	0.261		5.59	5.60	8.37	32.9	
14	14	PFTeDA	712.2>668.4	1.07e4	1.32e4	0.261		5.76	5.77	8.12	30.4	
15	15	13C2-PFHxA	314.8 > 269.9	7.55e3	1.32e4	0.261	0.651	3.38	3.29	5.72	33.7	87.9
16	16	13C2-PFDA	514.8 > 470.0	1.12e4	1.32e4	0.261	1.028	4.80	4.93	8.49	31.7	82.6
17	17	d5-N-EtFOSAA	588.7> 419.1	2.05e4	1.78e4	0.261	1.457	5.03	5.15	46.1	121	79.1
18	18	13C2-PFOA	414.7 > 369.9	1.32e4	1.32e4	0.261	1.000	4.22	4.21	10.0	38.4	100.0
19	19	13C4-PFOS	502.8>80.5	2.14e4	2.14e4	0.261	1.000	4.65	4.66	28.7	110	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.78e4	1.78e4	0.261	1.000	5.02	5.03	40.0	154	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

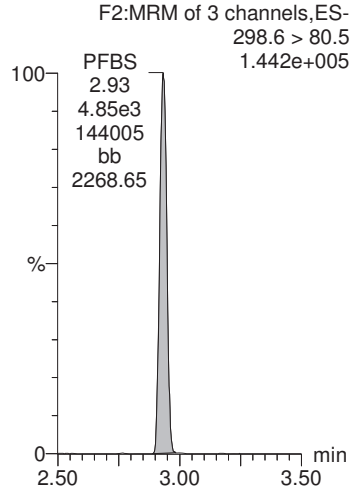
Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-33.qld

Last Altered: Wednesday, September 05, 2018 09:28:00 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:28:41 Pacific Daylight Time

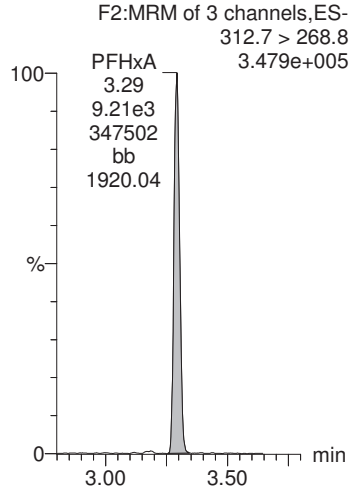
Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_33, Date: 04-Sep-2018, Time: 15:48:07, ID: B8I0001-MS1 LFSM 0.26052, Description: LFSM

PFBS



PFHxA



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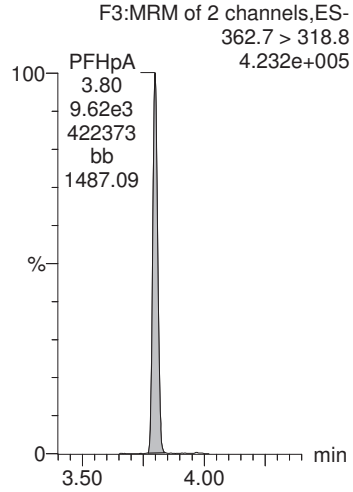
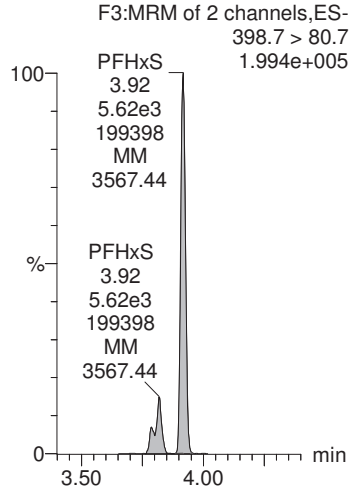
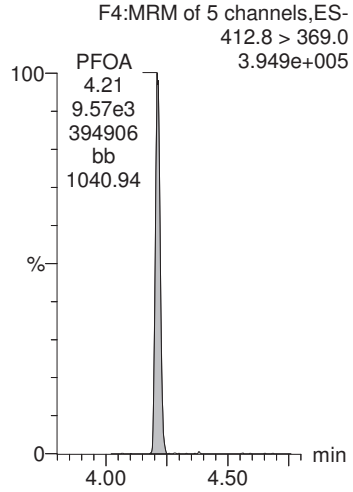


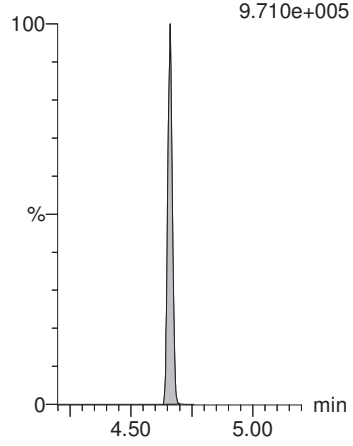
PFHxS



PFOA



13C4-PFOS



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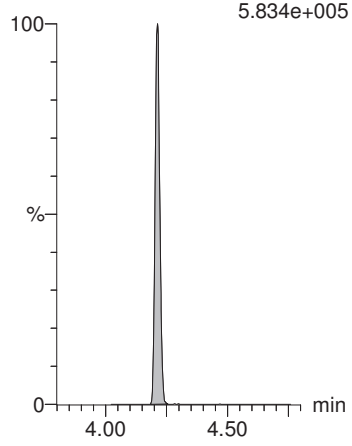

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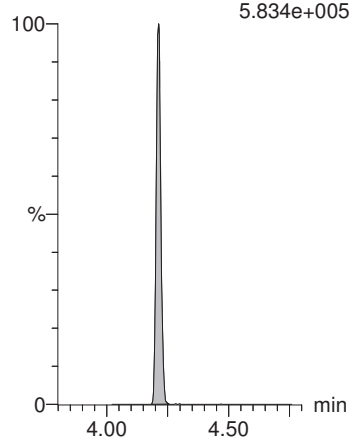

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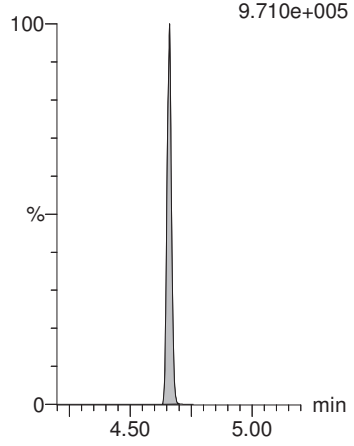

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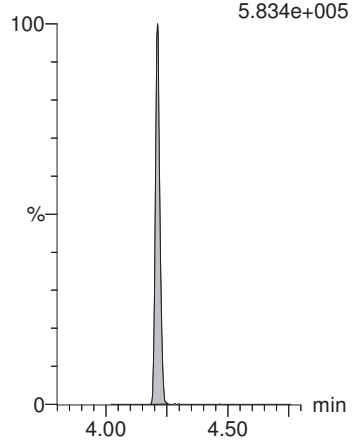

CGH 9/5/2018

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-33.qld

Last Altered: Wednesday, September 05, 2018 09:28:00 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:28:41 Pacific Daylight Time

Name: 180904G1_33, Date: 04-Sep-2018, Time: 15:48:07, ID: B8I0001-MS1 LFSM 0.26052, Description: LFSM

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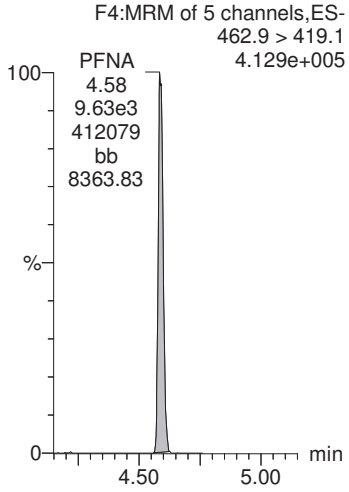
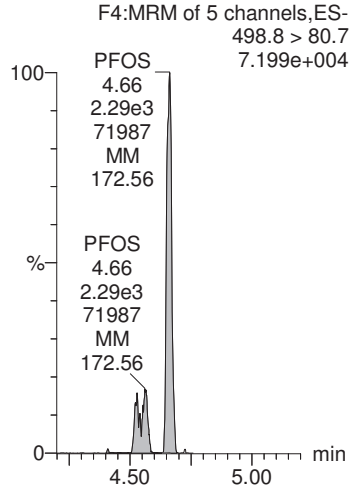


PFOS



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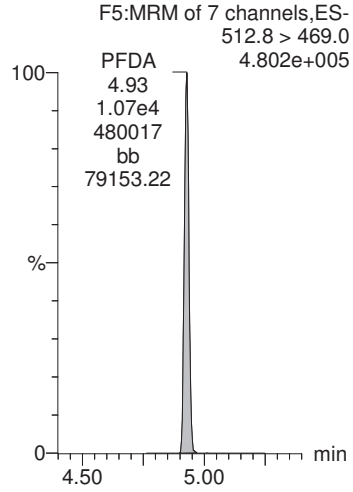
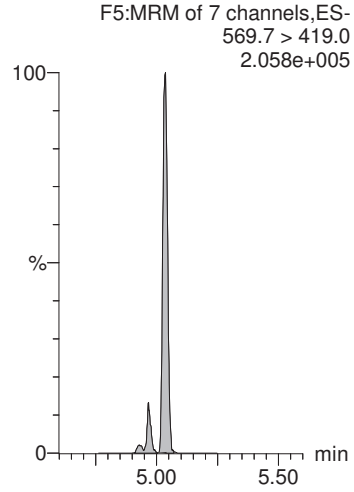


N-MeFOSAA



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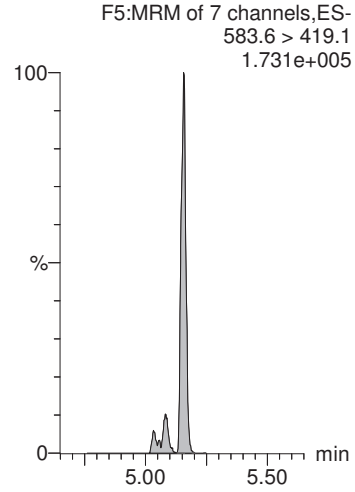

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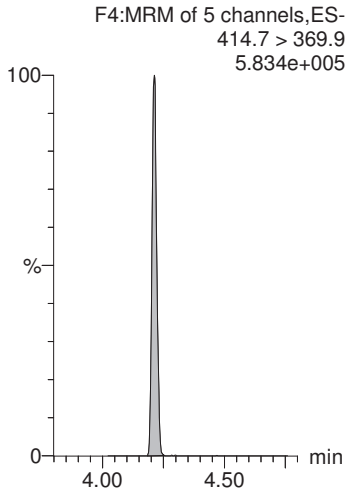

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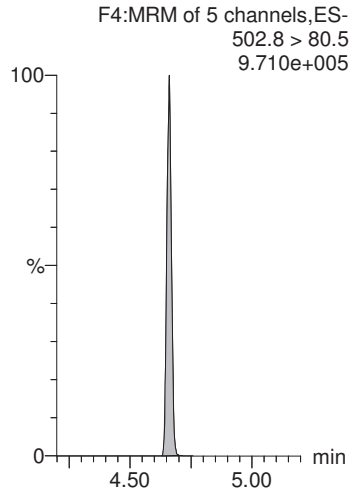

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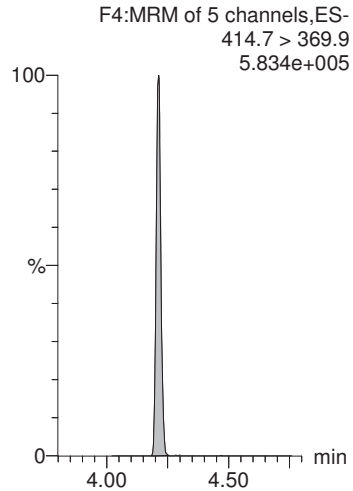

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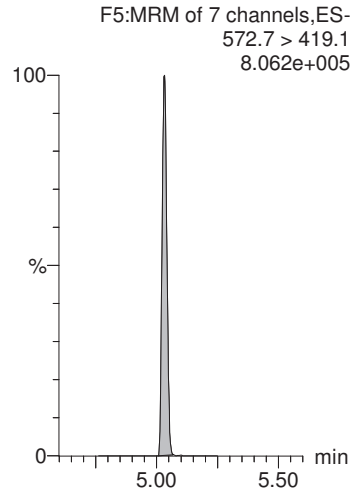

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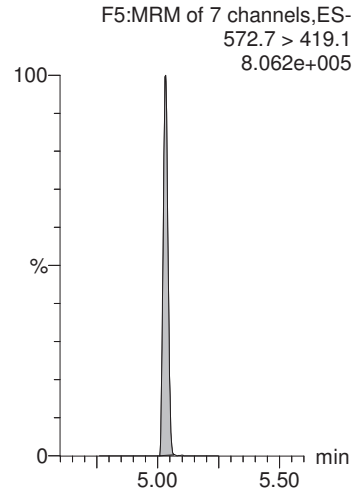


CGH 9/5/2018

Vista Analytical Laboratory

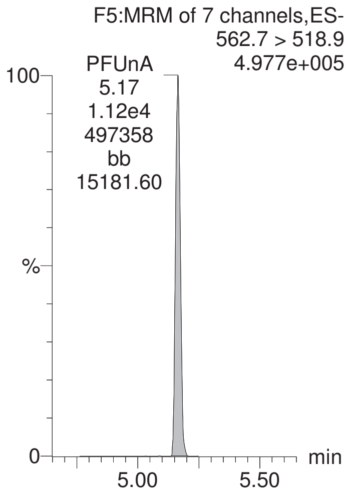
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-33.qld

Last Altered: Wednesday, September 05, 2018 09:28:00 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:28:41 Pacific Daylight Time

Name: 180904G1_33, Date: 04-Sep-2018, Time: 15:48:07, ID: B8I0001-MS1 LFSM 0.26052, Description: LFSM

PFUnA



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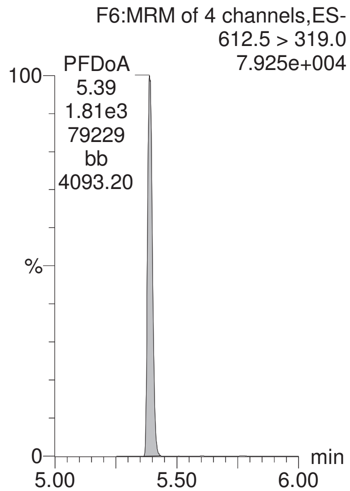

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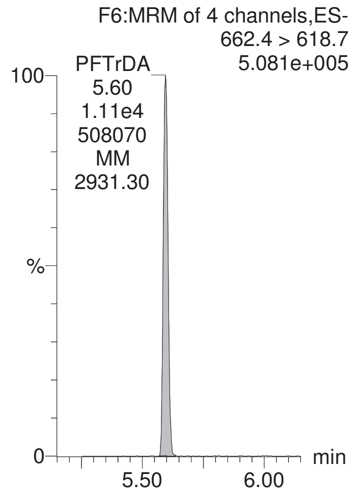
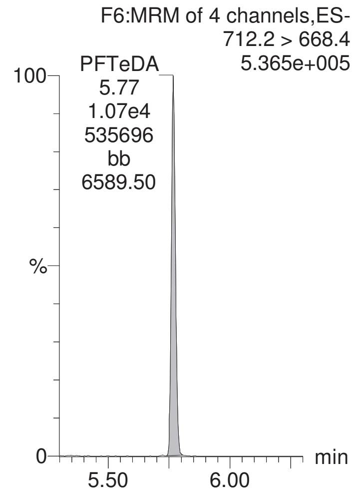
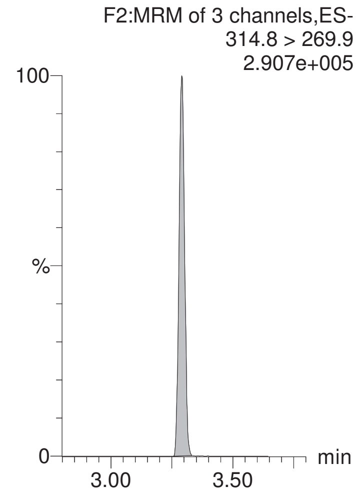


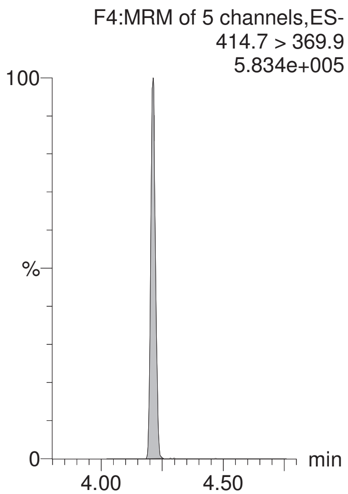
PFTeDA



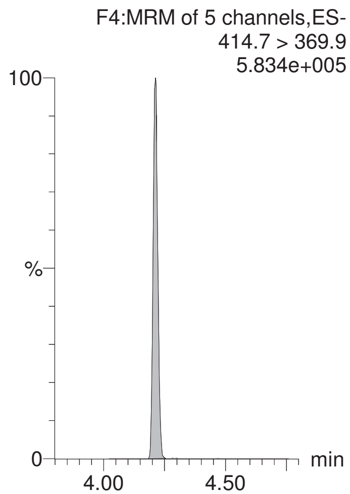
13C2-PFHxA



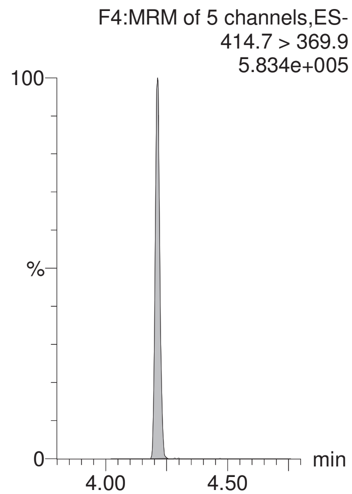
13C2-PFOA



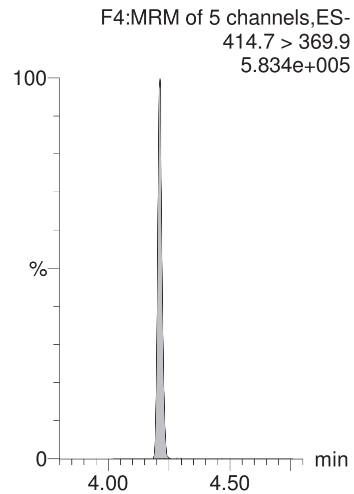
13C2-PFOA



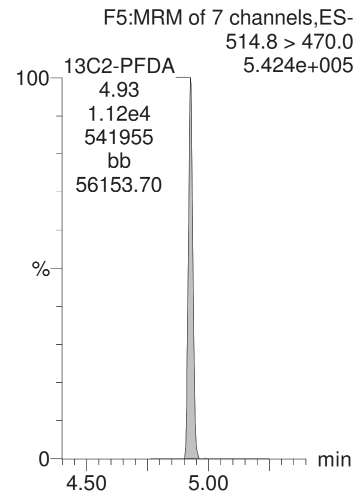
13C2-PFOA



13C2-PFOA



13C2-PFDA



CGH 9/5/2018

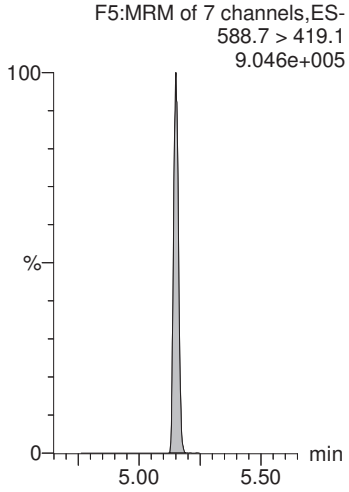
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-33.qld

Last Altered: Wednesday, September 05, 2018 09:28:00 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:28:41 Pacific Daylight Time

Name: 180904G1_33, Date: 04-Sep-2018, Time: 15:48:07, ID: B8I0001-MS1 LFSM 0.26052, Description: LFSM

d5-N-EtFOSAA



CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-34.qld

Last Altered: Wednesday, September 05, 2018 09:30:10 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:30:51 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_34, Date: 04-Sep-2018, Time: 16:01:04, ID: B8I0001-MSD1 LFSMD 0.26095, Description: LFSMD

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	298.6> 80.5	5.00e3	1.97e4	0.261		2.93	2.93	7.29	43.5	
2	2	PFHxA	312.7 > 268.8	9.62e3	1.23e4	0.261		3.27	3.29	7.85	42.5	
3	3	PFHpA	362.7 > 318.8	1.02e4	1.23e4	0.261		3.78	3.80	8.31	40.9	
4	4	PFHxS	398.7 > 80.7	5.79e3	1.97e4	0.261		3.93	3.91	8.45	39.2	
5	5	PFOA	412.8 > 369.0	9.99e3	1.23e4	0.261		4.21	4.21	8.15	42.8	
6	6	PFNA	462.9 > 419.1	1.02e4	1.23e4	0.261		4.57	4.59	8.34	37.3	
7	7	PFOS	498.8 >80.7	2.20e3	1.97e4	0.261		4.67	4.66	3.22	39.4	
8	8	PFDA	512.8 > 469.0	1.14e4	1.23e4	0.261		4.89	4.92	9.33	40.3	
9	9	N-MeFOSAA	569.7 > 419.0	5.33e3	1.74e4	0.261		5.04	5.04	12.3	37.2	
10	10	N-EtFOSAA	583.6 >419.1	5.05e3	1.74e4	0.261		5.16	5.15	11.6	38.5	
11	11	PFUnA	562.7 > 518.9	1.21e4	1.23e4	0.261		5.14	5.16	9.89	39.0	
12	12	PFDoA	612.5 > 319.0	1.89e3	1.23e4	0.261		5.38	5.39	1.54	38.6	
13	13	PFTrDA	662.4 > 618.7	1.17e4	1.23e4	0.261		5.58	5.59	9.54	37.4	
14	14	PFTeDA	712.2>668.4	1.13e4	1.23e4	0.261		5.76	5.77	9.23	34.5	
15	15	13C2-PFHxA	314.8 > 269.9	7.81e3	1.23e4	0.261	0.651	3.38	3.29	6.37	37.5	97.9
16	16	13C2-PFDA	514.8 > 470.0	1.17e4	1.23e4	0.261	1.028	4.80	4.92	9.56	35.6	93.0
17	17	d5-N-EtFOSAA	588.7> 419.1	2.13e4	1.74e4	0.261	1.457	5.03	5.15	48.8	128	83.8
18	18	13C2-PFOA	414.7 > 369.9	1.23e4	1.23e4	0.261	1.000	4.22	4.21	10.0	38.3	100.0
19	19	13C4-PFOS	502.8>80.5	1.97e4	1.97e4	0.261	1.000	4.65	4.66	28.7	110	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.74e4	1.74e4	0.261	1.000	5.02	5.03	40.0	153	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

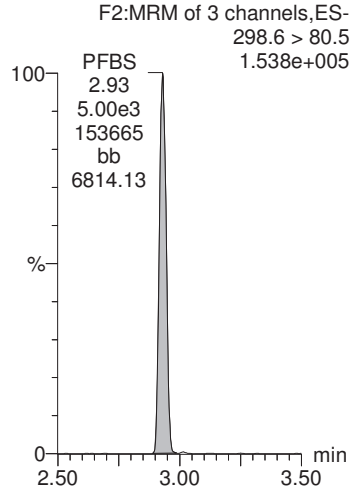
Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-34.qld

Last Altered: Wednesday, September 05, 2018 09:30:10 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:30:51 Pacific Daylight Time

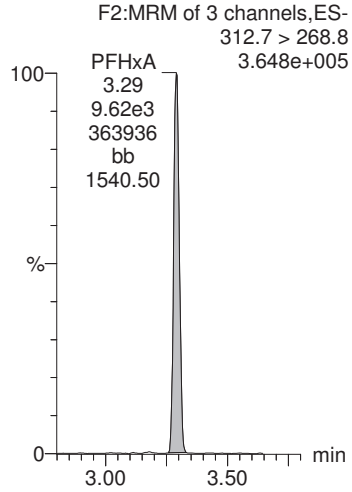
Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_34, Date: 04-Sep-2018, Time: 16:01:04, ID: B8I0001-MSD1 LFSMD 0.26095, Description: LFSMD

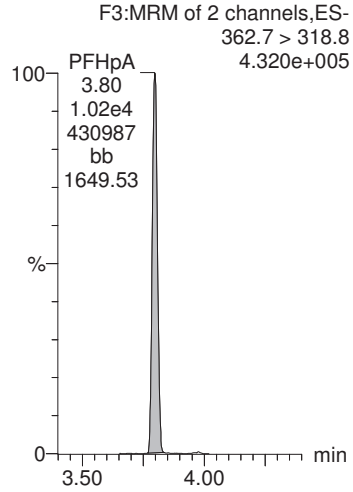
PFBS



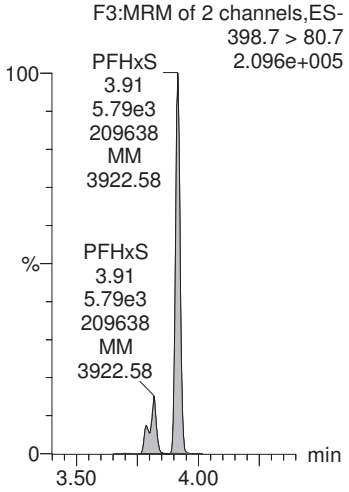
PFHxA



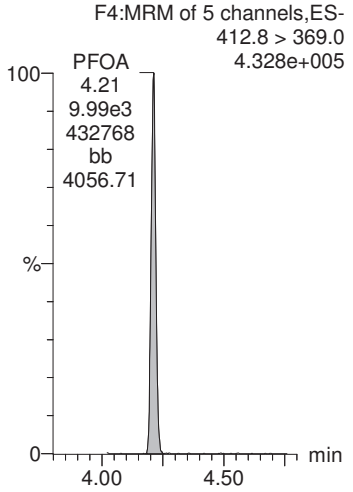
PFHpA



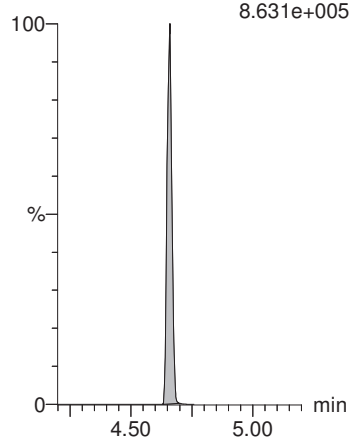
PFHxS



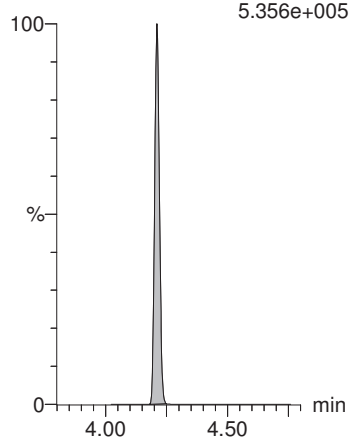
PFOA



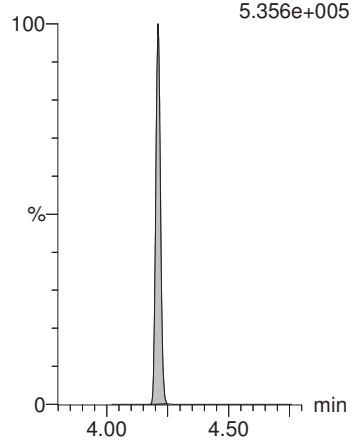
13C4-PFOS



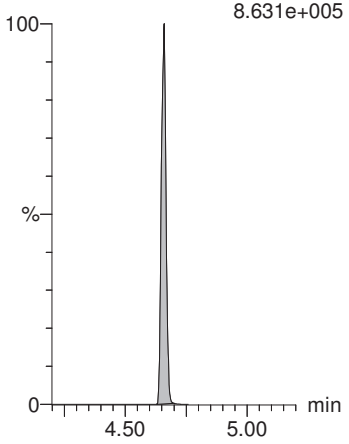
13C2-PFOA



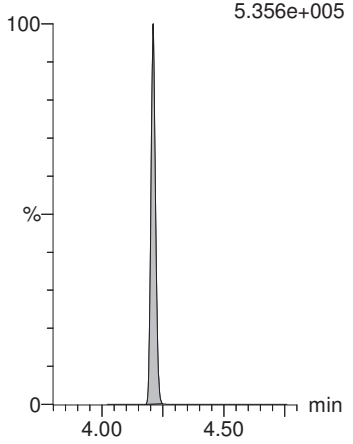
13C2-PFOA



13C4-PFOS



13C2-PFOA



CGH 9/5/2018

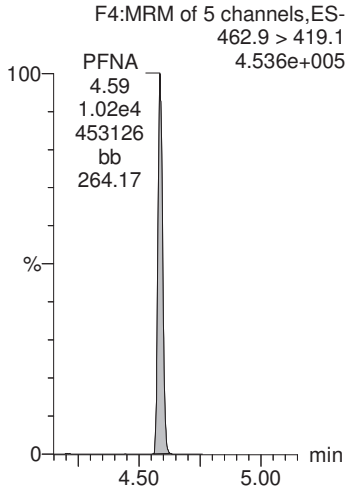
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-34.qld

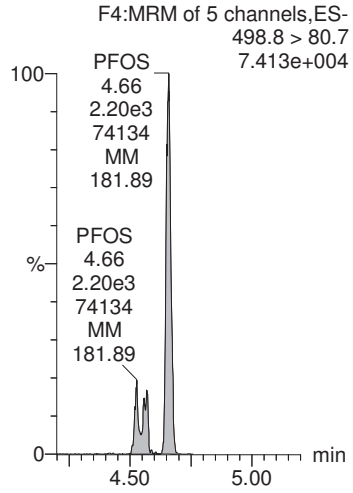
Last Altered: Wednesday, September 05, 2018 09:30:10 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:30:51 Pacific Daylight Time

Name: 180904G1_34, Date: 04-Sep-2018, Time: 16:01:04, ID: B8I0001-MSD1 LFSMD 0.26095, Description: LFSMD

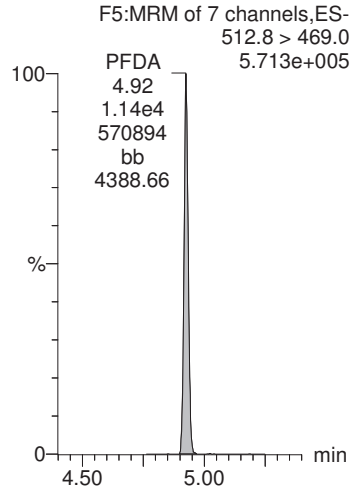
PFNA



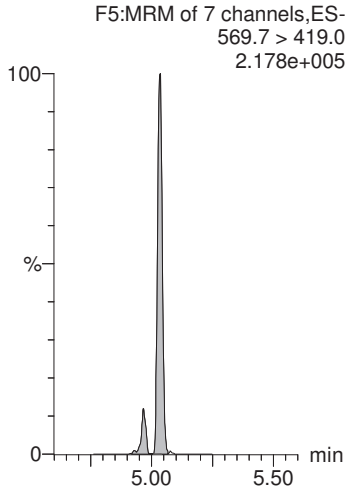
PFOS



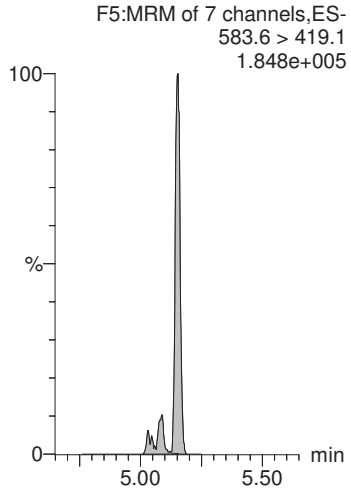
PFDA



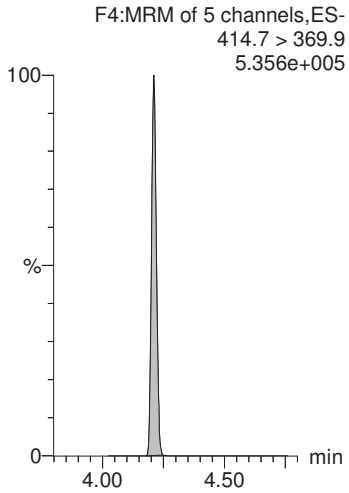
N-MeFOSAA



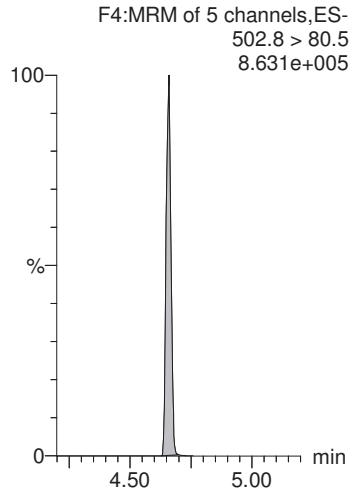
N-EtFOSAA



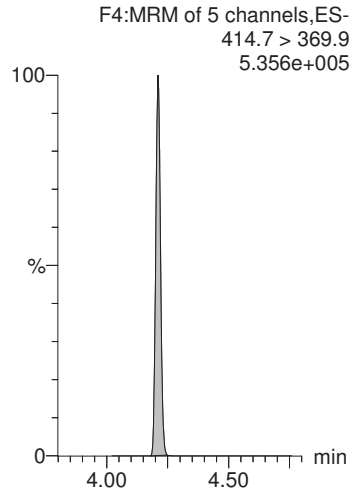
13C2-PFOA



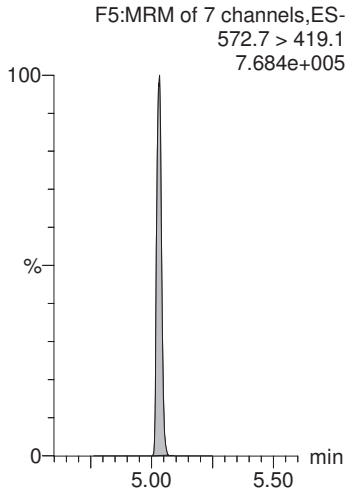
13C4-PFOS



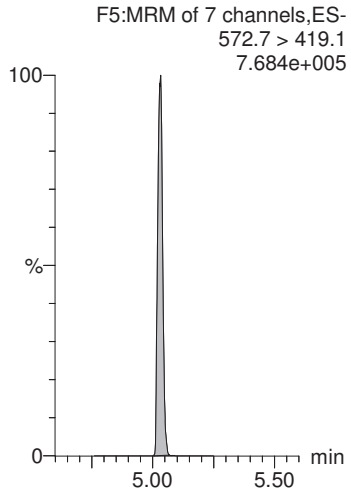
13C2-PFOA



d3-N-MeFOSAA



d3-N-MeFOSAA



CGH 9/5/2018

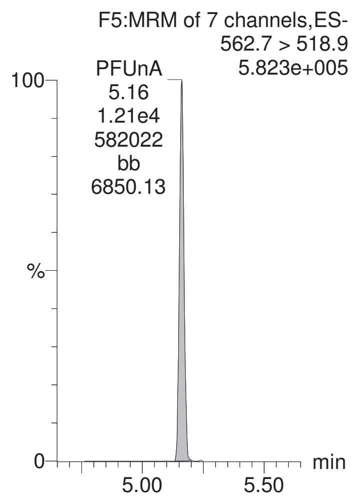
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-34.qld

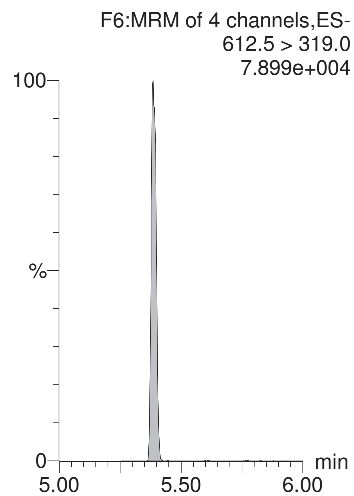
Last Altered: Wednesday, September 05, 2018 09:30:10 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:30:51 Pacific Daylight Time

Name: 180904G1_34, Date: 04-Sep-2018, Time: 16:01:04, ID: B8I0001-MSD1 LFSMD 0.26095, Description: LFSMD

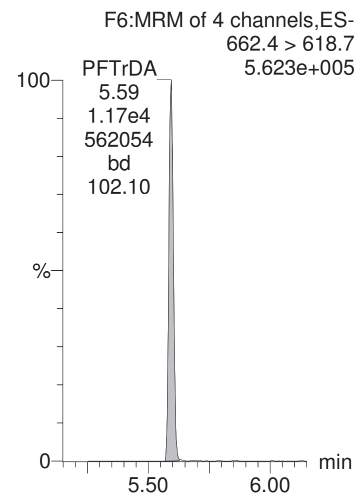
PFUnA



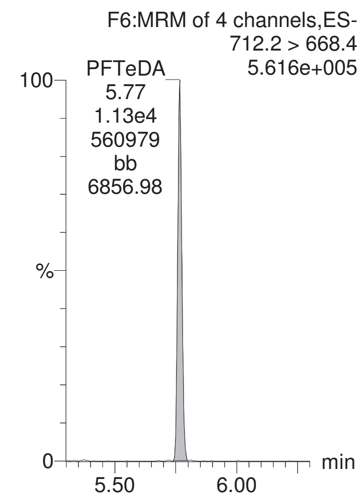
PFDoA



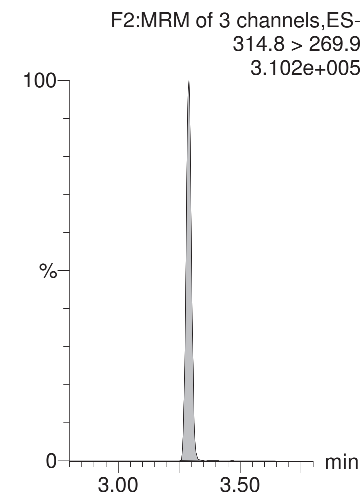
PFTrDA



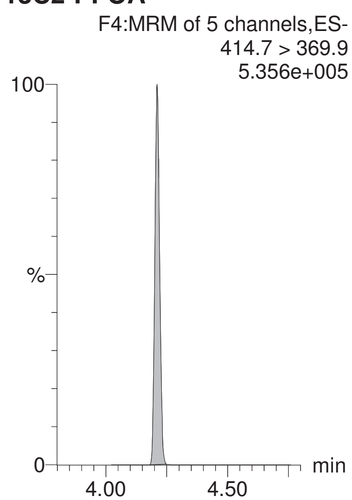
PFTeDA



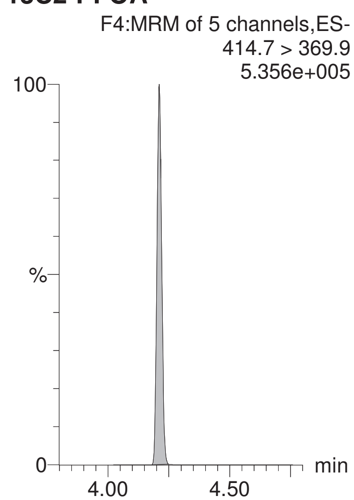
13C2-PFHxA



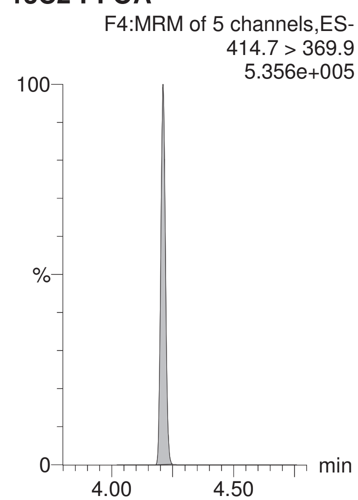
13C2-PFOA



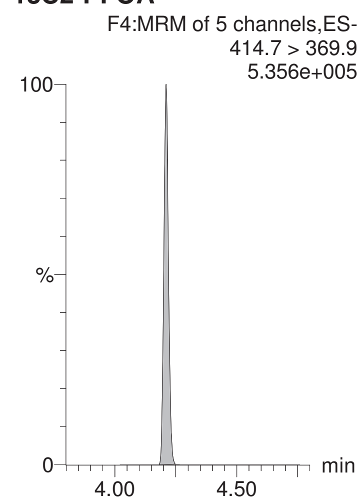
13C2-PFOA



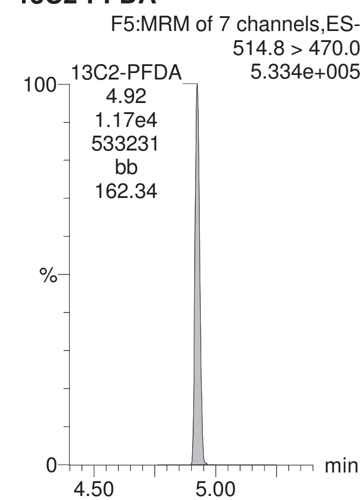
13C2-PFOA



13C2-PFOA



13C2-PFDA



CGH 9/5/2018

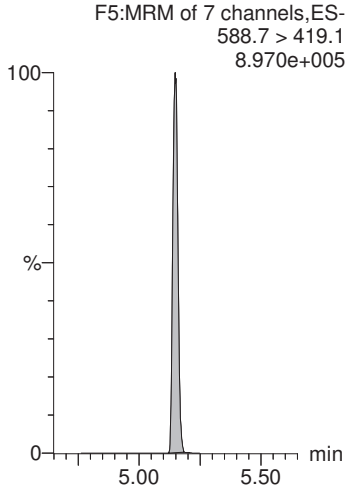
MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-34.qld

Last Altered: Wednesday, September 05, 2018 09:30:10 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:30:51 Pacific Daylight Time

Name: 180904G1_34, Date: 04-Sep-2018, Time: 16:01:04, ID: B8I0001-MSD1 LFSMD 0.26095, Description: LFSMD

d5-N-EtFOSAA



CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-36.qld

Last Altered: Wednesday, September 05, 2018 09:35:34 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:39:19 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_0904.mdb 05 Sep 2018 08:29:26
Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_36, Date: 04-Sep-2018, Time: 16:26:59, ID: 1802841-02 CBD-1FB40-0818 0.26458, Description: CBD-1FB40-0818

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	298.6> 80.5		2.37e4	0.265		2.93				
2	2	PFHxA	312.7 > 268.8	4.41e1	1.49e4	0.265		3.27	3.29	0.0297	0.158	
3	3	PFHpA	362.7 > 318.8	1.46e1	1.49e4	0.265		3.79	3.79	0.00982	0.0476	
4	4	PFHxS	398.7 > 80.7		2.37e4	0.265		3.93				
5	5	PFOA	412.8 > 369.0	5.73e1	1.49e4	0.265		4.21	4.21	0.0386	0.200	
6	6	PFNA	462.9 > 419.1		1.49e4	0.265		4.57				
7	7	PFOS	498.8 >80.7		2.37e4	0.265		4.67				
8	8	PFDA	512.8 > 469.0	3.19e1	1.49e4	0.265		4.89	4.93	0.0215	0.0915	
9	9	N-MeFOSAA	569.7 > 419.0		1.88e4	0.265		5.04				
10	10	N-EtFOSAA	583.6 >419.1		1.88e4	0.265		5.16				
11	11	PFUnA	562.7 > 518.9		1.49e4	0.265		5.14				
12	12	PFDoA	612.5 > 319.0		1.49e4	0.265		5.38				
13	13	PFTrDA	662.4 > 618.7		1.49e4	0.265		5.59				
14	14	PFTeDA	712.2>668.4		1.49e4	0.265		5.76				
15	15	13C2-PFHxA	314.8 > 269.9	8.12e3	1.49e4	0.265	0.651	3.38	3.29	5.46	31.7	83.9
16	16	13C2-PFDA	514.8 > 470.0	1.37e4	1.49e4	0.265	1.028	4.80	4.93	9.20	33.8	89.5
17	17	d5-N-EtFOSAA	588.7> 419.1	2.45e4	1.88e4	0.265	1.457	5.03	5.15	52.0	135	89.2
18	18	13C2-PFOA	414.7 > 369.9	1.49e4	1.49e4	0.265	1.000	4.22	4.21	10.0	37.8	100.0
19	19	13C4-PFOS	502.8>80.5	2.37e4	2.37e4	0.265	1.000	4.65	4.66	28.7	108	100.0
20	20	d3-N-MeFOSAA	572.7 > 419.1	1.88e4	1.88e4	0.265	1.000	5.02	5.03	40.0	151	100.0

CGH 9/5/2018

Vista Analytical Laboratory

MMM 9/5/2018

Dataset: X:\G1.PRO\Results\2018\180904G1\180904G1-36.qld

Last Altered: Wednesday, September 05, 2018 09:35:34 Pacific Daylight Time
Printed: Wednesday, September 05, 2018 09:39:19 Pacific Daylight Time

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Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_08-24-18_L14.cdb 25 Aug 2018 10:37:11

Name: 180904G1_36, Date: 04-Sep-2018, Time: 16:26:59, ID: 1802841-02 CBD-1FB40-0818 0.26458, Description: CBD-1FB40-0818

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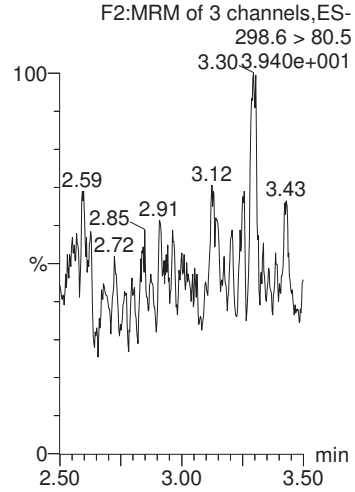

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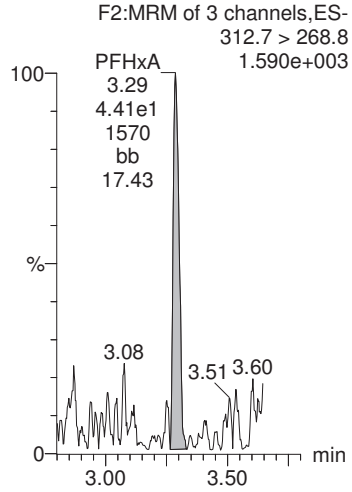

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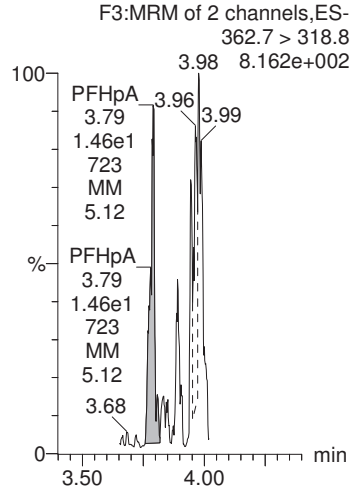

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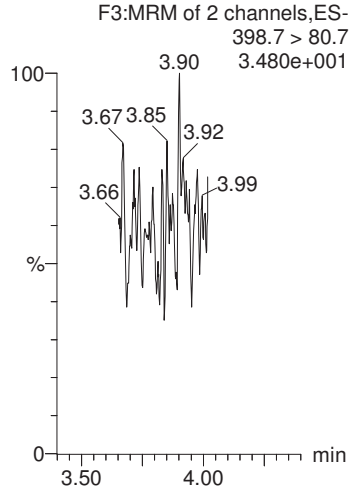

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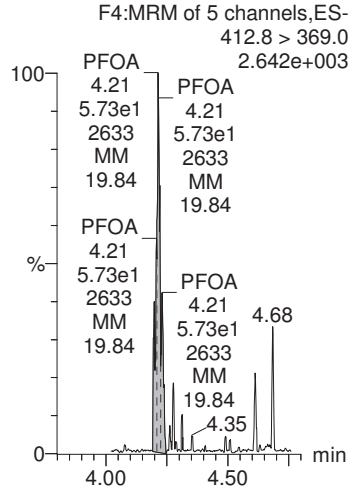

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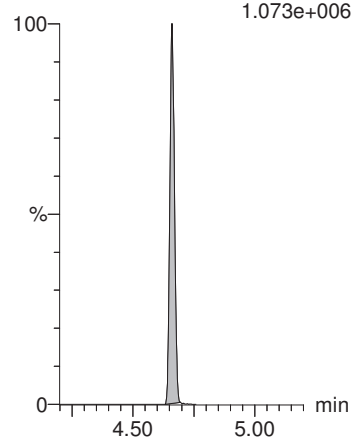

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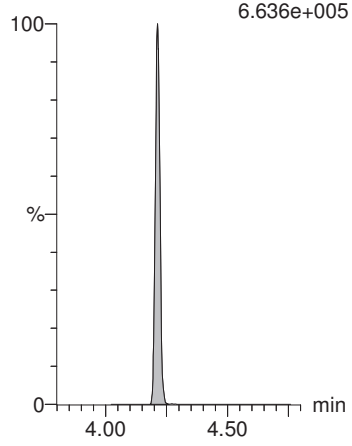

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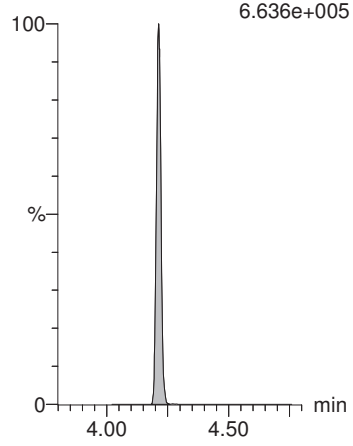

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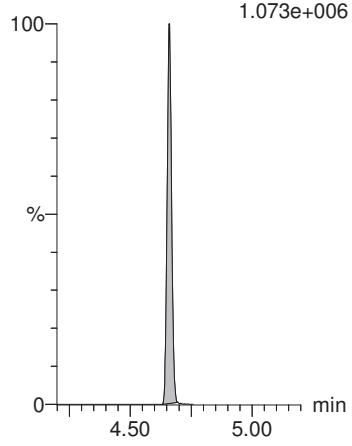

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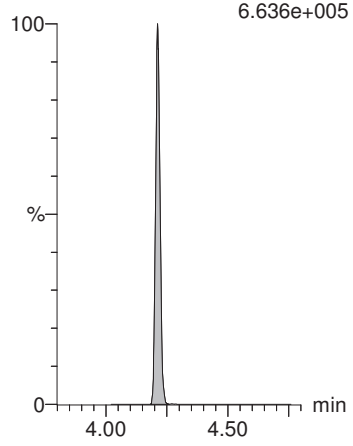

CGH 9/5/2018

MMM 9/5/2018

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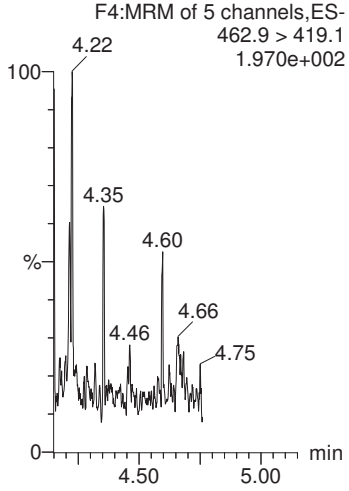

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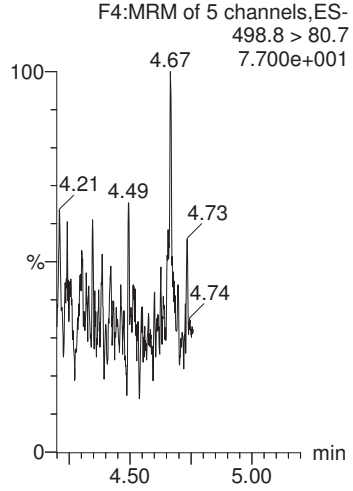

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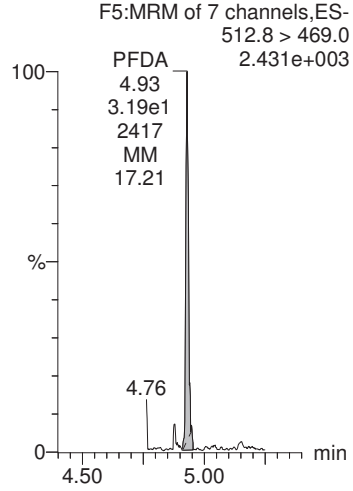

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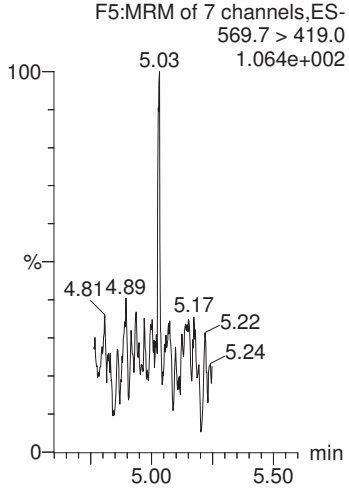

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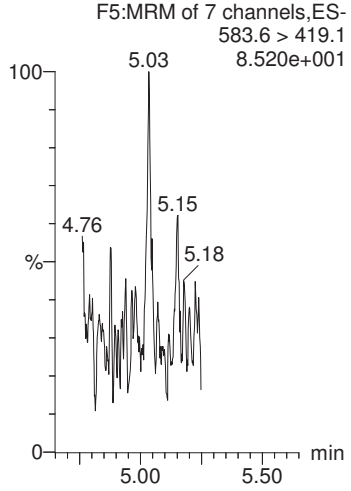

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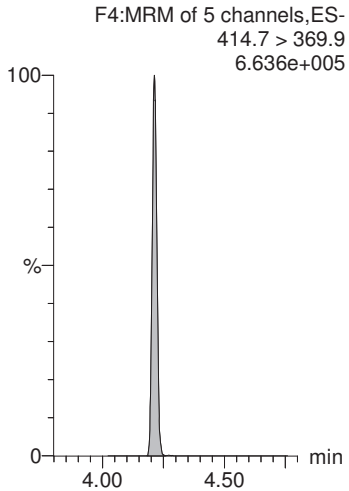

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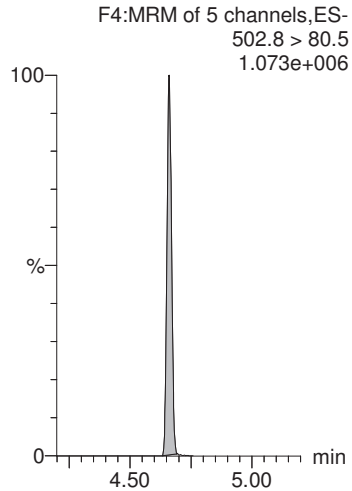

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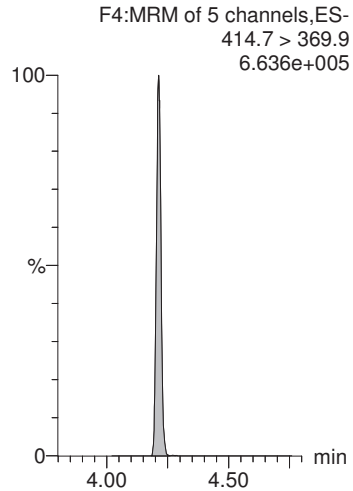

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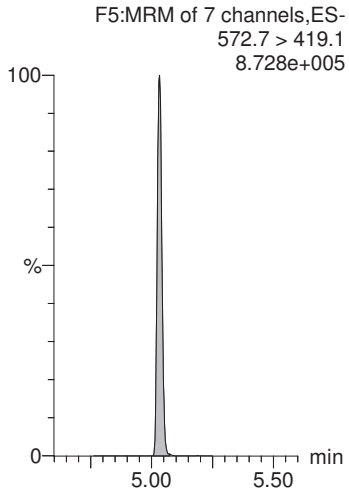

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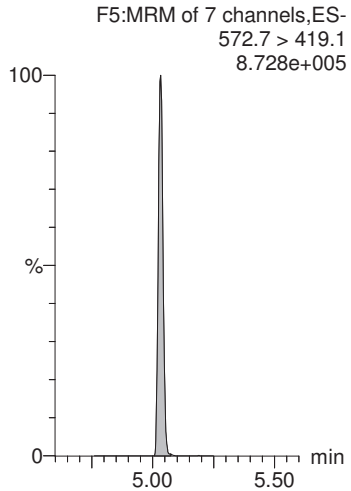

CGH 9/5/2018

MMM 9/5/2018

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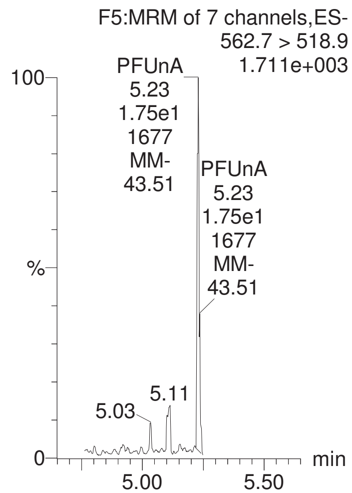

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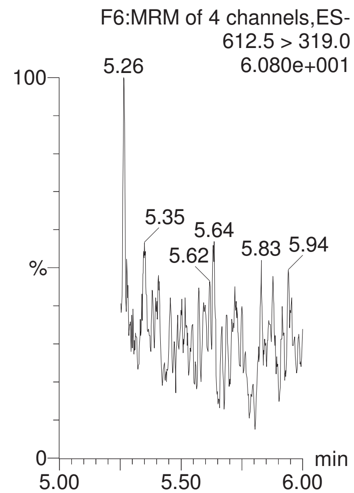

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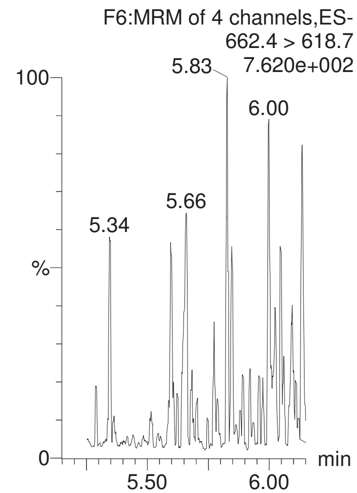

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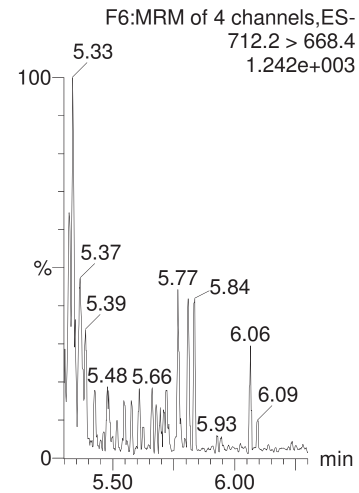

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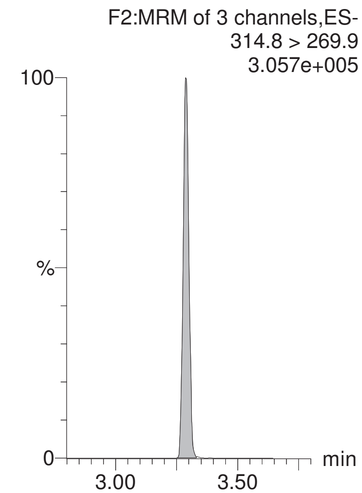

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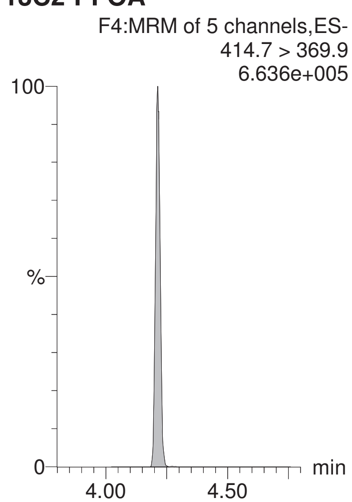

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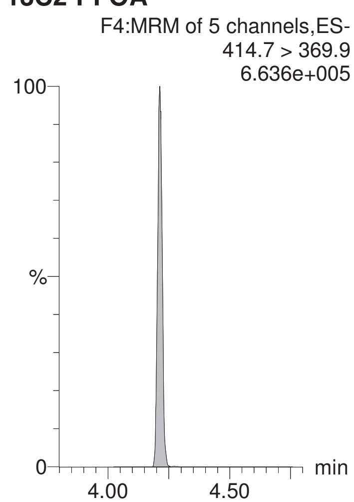

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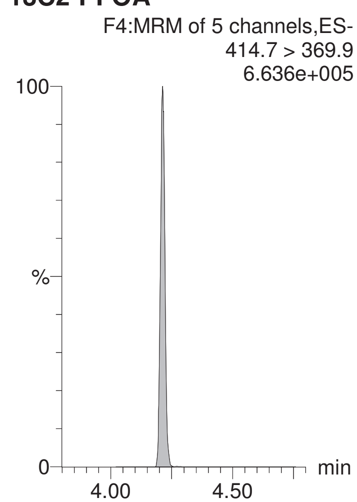

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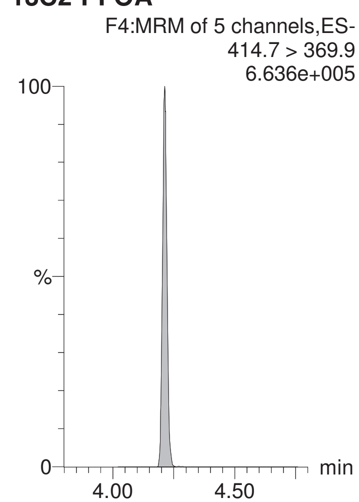

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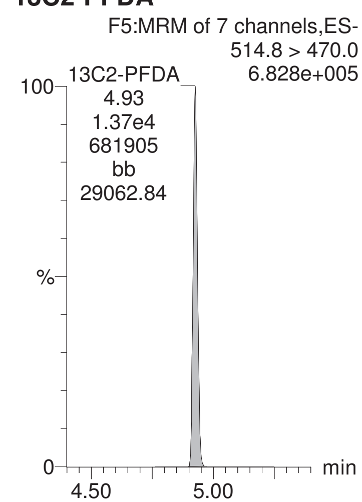

CGH 9/5/2018

MMM 9/5/2018

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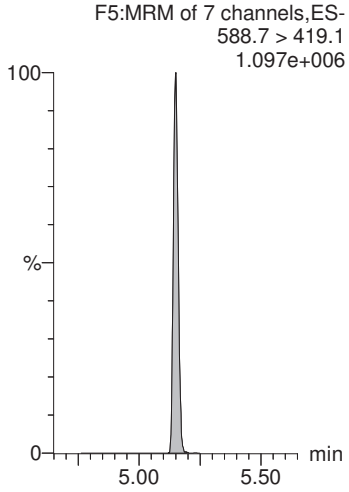
d5-N-EtFOSAA



CGH 9/5/2018

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N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		

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	DateTime_Collected	Date_Received	Leachate_ Date	Leachate_ Time
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	09/01/2018 11:15	09/01/2018		

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	Extraction_ Date	Extraction_ Time	Analysis_ Date	Analysis_ Time	Lab_ Sample_ID	Dilution	Run_ Number	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	4.83	4.83	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			13C2-PFHxA	13C2-PFHxA	84.5	84.5	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			13C2-PFDA	13C2-PFDA	89.7	89.7	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	20180901	11:15:00	20180904	16:14:00	1802841-01	1	-999			d5-EtFOSAA	d5-EtFOSAA	83.0	83.0	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	4.72	4.72	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			13C2-PFHxA	13C2-PFHxA	83.9	83.9	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			13C2-PFDA	13C2-PFDA	89.5	89.5	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	20180901	11:15:00	20180904	16:26:00	1802841-02	1	-999			d5-EtFOSAA	d5-EtFOSAA	89.2	89.2	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	5.00	5.00	NG_L	U	U
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA	91.6	91.6	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			13C2-PFDA	13C2-PFDA	94.5	94.5	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	20180901	11:15:00	20180904	15:22:00	B8I0001-BLK1	1	-999			d5-EtFOSAA	d5-EtFOSAA	87.5	87.5	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	43.0	43.0	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	46.2	46.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	43.7	43.7	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	42.1	42.1	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	46.1	46.1	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	39.2	39.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	43.7	43.7	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	42.7	42.7	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	40.8	40.8	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	42.6	42.6	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	42.9	42.9	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	43.1	43.1	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	41.2	41.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	39.7	39.7	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			13C2-PFHxA	13C2-PFHxA	97.0	97.0	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			13C2-PFDA	13C2-PFDA	99.0	99.0	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	20180901	11:15:00	20180904	15:35:00	B8I0001-BS1	1	-999			d5-EtFOSAA	d5-EtFOSAA	95.9	95.9	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	38.9	38.9	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	37.8	37.8	NG_L		

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	Extraction_ Date	Extraction_ Time	Analysis_ Date	Analysis_ Time	Lab_ Sample_ID	Dilution	Run_ Number	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	35.9	35.9	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	35.0	35.0	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	38.1	38.1	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	32.6	32.6	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	37.8	37.8	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	35.0	35.0	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	35.0	35.0	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	34.4	34.4	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	33.4	33.4	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	34.2	34.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	32.9	32.9	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	30.4	30.4	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			13C2-PFHxA	13C2-PFHxA	87.9	87.9	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			13C2-PFDA	13C2-PFDA	82.6	82.6	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	20180901	11:15:00	20180904	15:48:00	B8I0001-MS1	1	-999			d5-EtFOSAA	d5-EtFOSAA	79.1	79.1	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	43.5	43.5	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorohexanoic Acid (PFHxA)	307-24-4	42.5	42.5	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluoroheptanoic acid (PFHpA)	375-85-9	40.9	40.9	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39.2	39.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	42.8	42.8	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorononanoic acid (PFNA)	375-95-1	37.3	37.3	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	39.4	39.4	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorodecanoic Acid (PFDA)	335-76-2	40.3	40.3	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	37.2	37.2	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	38.5	38.5	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	39.0	39.0	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorododecanoic Acid (PFDoA)	307-55-1	38.6	38.6	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	37.4	37.4	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	34.5	34.5	NG_L		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			13C2-PFHxA	13C2-PFHxA	97.9	97.9	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			13C2-PFDA	13C2-PFDA	93.0	93.0	PCT_REC		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	20180901	11:15:00	20180904	16:01:00	B8I0001-MSD1	1	-999			d5-EtFOSAA	d5-EtFOSAA	83.8	83.8	PCT_REC		

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	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		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR	TRG									5.1	2.93	4.83	9.64	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1RW40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR	TRG									5.1	2.87	4.72	9.45	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	CBD-1FB40-0818	PR			SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	TRG									5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	SUR		SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	SUR		SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Blank	PR	SUR		SLSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	LCS	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	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		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	TRG		LSA	130	70					5.1	2.92	4.79	9.60	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	TRG		LSA	130	70					5.1	2.91	4.79	9.58	1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		
N6247016D9000	0008		CHESAPEAKE_NSGA	Matrix Spike Dup	PR	SUR		LSA	130	70					5.1				1802841	S8I0008		

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
NRL-CBD, MARYLAND

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1802841
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: NRL-CBD, CTO-0008, Maryland
Date: September 19, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CBD-1RW40-0818	1802841-01	Water
1MS	CBD-1RW40-0818MS	1802841-01MS	Water
1MSD	CBD-1RW40-0818MSD	1802841-01MSD	Water
2	CBD-1FB40-0818	1802841-02	Water

A full data validation was performed on the analytical data for one water sample and one aqueous field blank sample collected on August 30, 2018 by CH2M HILL at the NRL-CBD site in Maryland. 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	*Method References*
PFCs	USEPA Method 537, Rev 1.1

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 5.1 (2017) 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
CBD-1FB40-0818	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 percent recoveries (%R) and RPD values.

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed: _____ Dated: _____

Nancy Weaver
Senior Chemist

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.

Vista Analytical Laboratory

Sample ID: CBD-1RW40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: Drinking Water
Date Collected: 30-Aug-18 15:23

Laboratory Data

Lab Sample: 1802841-01
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxA	307-24-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHpA	375-85-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFHxS	355-46-4	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOA	335-67-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFNA	375-95-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFOS	1763-23-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDA	335-76-2	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
MeFOSAA	2355-31-9	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
EtFOSAA	2991-50-6	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFUnA	2058-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFDoA	307-55-1	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTrDA	72629-94-8	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
PFTeDA	376-06-7	ND	2.93	4.83	9.64		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.5	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
13C2-PFDA	SURR	89.7	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1
d5-EtFOSAA	SURR	83.0	70 - 130		B8I0001	01-Sep-18	0.259 L	04-Sep-18 16:14	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

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

NW 9/19/18

Vista Analytical Laboratory 2

Sample ID: CBD-1FB40-0818

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08 PN:679580.14.FI-FS
Matrix: QC Water
Date Collected: 30-Aug-18 15:25

Laboratory Data

Lab Sample: 1802841-02
Date Received: 31-Aug-18 09:12
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxA	307-24-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHpA	375-85-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFHxS	355-46-4	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOA	335-67-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFNA	375-95-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFOS	1763-23-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDA	335-76-2	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
MeFOSAA	2355-31-9	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
EtFOSAA	2991-50-6	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFUnA	2058-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFDoA	307-55-1	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTrDA	72629-94-8	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
PFTeDA	376-06-7	ND	2.87	4.72	9.45		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.9	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
13C2-PFDA	SURR	89.5	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1
d5-EtFOSAA	SURR	89.2	70 - 130		B8I0001	01-Sep-18	0.265 L	04-Sep-18 16:26	1

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

Results reported to the DL.

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

9/9/18

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Legend

- Sampling Area
- Sampling Area
- Site 10 Boundary
- Base Boundary
- Surface Water
- 5-foot Contour Interval (dashed where inferred)
- Direction of Shallow Groundwater Flow
- Assumed Stream Channel
- Stream

N

0 200 400 Feet

1 inch equals 400 feet

Figure 1
Off-Base Drinking Water Sampling Results through November 2018
NRL - Chesapeake Bay Detachment
Chesapeake Beach, Maryland