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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1800728

Naval Air Station Whidbey Island
Oak Harbor, Washington

June 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

May 03, 2018

Vista Work Order No. 1800728

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 April 21, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-4041 695610.06.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. 1800728
Case Narrative

Sample Condition on Receipt:

Five drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. Selected sample IDs were amended as requested on April 24, 2018.

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)/Laboratory Fortified Blank Duplicate (LFBD) 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/LFBD recoveries were within the method acceptance criteria.

The surrogate recoveries outside the acceptance criteria are listed in the table below:

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1800728-01	WI-A06-RW18-0418	EPA Method 537	d5-EtFOSAA	H	68.7

H = Recovery was outside laboratory acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1800728-01	WI-A06-RW18-0418	20-Apr-18 10:27	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-02	WI-A06-RW18P-0418	20-Apr-18 10:30	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-03	WI-A06-FB18-0418	20-Apr-18 10:27	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-04	WI-A06-RW20-0418	20-Apr-18 10:10	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-05	WI-A06-FB20-0418	20-Apr-18 10:10	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8D0148-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHxA	ND	0.871	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHpA	ND	0.533	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHxS	ND	0.415	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFOA	ND	1.08	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFNA	ND	1.44	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFOS	ND	1.04	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFDA	ND	1.28	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
MeFOSAA	ND	3.04	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
EtFOSAA	ND	1.93	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFUnA	ND	0.255	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFDoA	ND	0.952	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFTrDA	ND	0.943	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFTeDA	ND	0.777	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.8	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
13C2-PFDA	SURR	104	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
d5-EtFOSAA	SURR	91.9	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1

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

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B8D0148-BS1/B8D0148-BSD1
Project:	CTO:4041 695610.06.FI.FS	QC Batch:	B8D0148
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	27-Apr-18
		Column:	BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	33.7	35.4	95.3		32.8	35.4	92.6	2.92		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHxA	32.0	40.0	80.1		45.1	40.0	113	34.0		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHpA	34.0	40.0	85.1		46.2	40.0	116	30.4		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHxS	33.4	36.4	91.8		30.8	36.4	84.5	8.25		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFOA	38.6	40.0	96.5		37.7	40.0	94.2	2.43		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFNA	35.2	40.0	88.1		38.1	40.0	95.2	7.73		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFOS	33.4	37.0	90.4		30.8	37.0	83.4	8.07		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFDA	30.6	40.0	76.6		41.3	40.0	103	29.6		70-130		02-May-18 21:17	1	02-May-18 21:28	1
MeFOSAA	33.4	40.0	83.4		31.9	40.0	79.8	4.38		70-130		02-May-18 21:17	1	02-May-18 21:28	1
EtFOSAA	34.9	40.0	87.3		34.2	40.0	85.4	2.19		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFUnA	34.5	40.0	86.2		44.9	40.0	112	26.2		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFDoA	33.3	40.0	83.2		43.5	40.0	109	26.7		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFTrDA	31.4	40.0	78.4		42.7	40.0	107	30.6		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFTeDA	31.9	40.0	79.8		41.2	40.0	103	25.3		70-130		02-May-18 21:17	1	02-May-18 21:28	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	82.5		111		70-130	02-May-18 21:17	1	02-May-18 21:28	1
13C2-PFDA	SURR	94.9		109		70-130	02-May-18 21:17	1	02-May-18 21:28	1
d5-EtFOSAA	SURR	87.7		88.9		70-130	02-May-18 21:17	1	02-May-18 21:28	1

Sample ID: WI-A06-RW18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-01
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	22.6	0.428	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxA	26.1	0.842	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHpA	9.21	0.515	4.83	9.67	J	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxS	135	0.401	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOA	29.1	1.04	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFNA	ND	1.39	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOS	44.7	1.01	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDA	ND	1.24	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
MeFOSAA	ND	2.94	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
EtFOSAA	ND	1.87	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFUnA	ND	0.247	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDoA	ND	0.921	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTrDA	ND	0.912	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTeDA	ND	0.751	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
13C2-PFDA	SURR	86.8	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
d5-EtFOSAA	SURR	68.7	70 - 130	H	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

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

Sample ID: WI-A06-RW18P-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:30

Laboratory Data

Lab Sample: 1800728-02
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.5	0.431	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxA	29.3	0.847	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHpA	11.3	0.518	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxS	125	0.404	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOA	30.6	1.05	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFNA	1.59	1.40	4.86	9.73	J	B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOS	43.0	1.01	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDA	ND	1.24	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
MeFOSAA	ND	2.96	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
EtFOSAA	ND	1.88	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFUnA	ND	0.248	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDoA	ND	0.926	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTrDA	ND	0.917	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTeDA	ND	0.756	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
13C2-PFDA	SURR	98.6	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
d5-EtFOSAA	SURR	76.2	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

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

Sample ID: WI-A06-FB18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-03
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.415	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxA	ND	0.815	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHpA	ND	0.499	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxS	ND	0.388	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOA	ND	1.01	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFNA	ND	1.35	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOS	ND	0.974	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDA	ND	1.20	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
MeFOSAA	ND	2.85	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
EtFOSAA	ND	1.81	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFUnA	ND	0.239	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDoA	ND	0.891	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTrDA	ND	0.883	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTeDA	ND	0.727	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.0	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
d5-EtFOSAA	SURR	82.9	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: WI-A06-RW20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-04
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.0	0.429	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxA	19.1	0.843	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHpA	3.33	0.516	4.84	9.68	J	B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxS	118	0.402	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOA	43.7	1.05	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFNA	ND	1.39	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOS	30.5	1.01	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDA	ND	1.24	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
MeFOSAA	ND	2.94	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
EtFOSAA	ND	1.87	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFUnA	ND	0.247	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDoA	ND	0.922	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTrDA	ND	0.913	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTeDA	ND	0.752	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.9	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
d5-EtFOSAA	SURR	82.3	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

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

Sample ID: WI-A06-FB20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-05
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.412	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxA	ND	0.811	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHpA	ND	0.496	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxS	ND	0.386	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOA	ND	1.01	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFNA	ND	1.34	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOS	ND	0.968	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDA	ND	1.19	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
MeFOSAA	ND	2.83	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
EtFOSAA	ND	1.80	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFUnA	ND	0.237	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDoA	ND	0.886	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTrDA	ND	0.878	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTeDA	ND	0.723	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.0	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
13C2-PFDA	SURR	83.4	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
d5-EtFOSAA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

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

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
M	**Estimated Maximum Possible Concentration. (CA Region 2 projects only)**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
Q	**Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
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 #: 1800728 Temp: 3.1 °C
Storage ID: WK-2 Storage Secured: Yes ☑ No ☐

Project ID: CTO-4041 695610.06.FI.FS PO#: 10006-7-108295 Sampler: E. Cutler / G. Gardner (name)

TAT (check one): Standard: ☐ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: 10 days

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite 300	Corvallis	OR	541-768-3104	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Eric Cutler	4-20-18	1230	Bettina Benedict	04/21/18	0740
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FedEx

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s): Quantity	Container(s): Type	Container(s): Matrix	Mod. EPA Method 537: PFOA/ PFOS	Mod. EPA Method 537: UCMR3 PFAS List:6	Mod. EPA Method 537: 537 List: 14	Mod. EPA Method 537: Full List of 26	Mod. EPA Method 537: Other: Please List Below	EPA Method 537(DW only): PFOA/ PFOS	EPA Method 537(DW only): UCMR3 PFAS List:6	EPA Method 537(DW only): PFAS List: 14	Comments
WI-A06-RW19-0418	4/20/18	10:27	DW	2	P	DW								X	TZ Preserved
WI-A06-RW19P-0418		10:30												X	
WI-A06-FB19-0418		~~10:30~~ 10:27												X	
WI-A06-RW20-0418		10:10												X	
WI-A06-FB20-0418		10:10												X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
Name: See "invoice to"
Company:
Address:
City: State: Zip:
Phone: Fax:
Email:

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

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

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

Page: 1 of 1

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1800728 **TAT** 10

Samples Arrival:	**Date/Time** 04/21/18 0938	**Initials:** RBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 04/23/18 0947	**Initials:** RBB	**Location:** WR-2 **Shelf/Rack:** E7

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None

Temp °C: 3.2 (uncorrected)	**Time:** 0940	**Thermometer ID:** IR-4
Temp °C: 3.1 (corrected)	**Probe used:** Yes☐ No☑	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 8107 0168 3994	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓					
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None	(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return	Dispose	

Comments:

May 03, 2018

Vista Work Order No. 1800728

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 April 21, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-4041 695610.06.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. 1800728
Case Narrative

Sample Condition on Receipt:

Five drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. Selected sample IDs were amended as requested on April 24, 2018.

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)/Laboratory Fortified Blank Duplicate (LFBD) 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/LFBD recoveries were within the method acceptance criteria.

The surrogate recoveries outside the acceptance criteria are listed in the table below:

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1800728-01	WI-A06-RW18-0418	EPA Method 537	d5-EtFOSAA	H	68.7

H = Recovery was outside laboratory acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1800728-01	WI-A06-RW18-0418	20-Apr-18 10:27	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-02	WI-A06-RW18P-0418	20-Apr-18 10:30	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-03	WI-A06-FB18-0418	20-Apr-18 10:27	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-04	WI-A06-RW20-0418	20-Apr-18 10:10	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1800728-05	WI-A06-FB20-0418	20-Apr-18 10:10	21-Apr-18 09:38	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Matrix: Aqueous

Laboratory Data

Lab Sample: B8D0148-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHxA	ND	0.871	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHpA	ND	0.533	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFHxS	ND	0.415	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFOA	ND	1.08	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFNA	ND	1.44	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFOS	ND	1.04	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFDA	ND	1.28	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
MeFOSAA	ND	3.04	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
EtFOSAA	ND	1.93	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFUnA	ND	0.255	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFDoA	ND	0.952	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFTrDA	ND	0.943	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
PFTeDA	ND	0.777	5.00	10.0		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.8	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
13C2-PFDA	SURR	104	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1
d5-EtFOSAA	SURR	91.9	70 - 130		B8D0148	27-Apr-18	0.250 L	02-May-18 21:40	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B8D0148-BS1/B8D0148-BSD1
Project:	CTO:4041 695610.06.FI.FS	QC Batch:	B8D0148
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	27-Apr-18
		Column:	BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	33.7	35.4	95.3		32.8	35.4	92.6	2.92		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHxA	32.0	40.0	80.1		45.1	40.0	113	34.0		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHpA	34.0	40.0	85.1		46.2	40.0	116	30.4		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFHxS	33.4	36.4	91.8		30.8	36.4	84.5	8.25		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFOA	38.6	40.0	96.5		37.7	40.0	94.2	2.43		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFNA	35.2	40.0	88.1		38.1	40.0	95.2	7.73		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFOS	33.4	37.0	90.4		30.8	37.0	83.4	8.07		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFDA	30.6	40.0	76.6		41.3	40.0	103	29.6		70-130		02-May-18 21:17	1	02-May-18 21:28	1
MeFOSAA	33.4	40.0	83.4		31.9	40.0	79.8	4.38		70-130		02-May-18 21:17	1	02-May-18 21:28	1
EtFOSAA	34.9	40.0	87.3		34.2	40.0	85.4	2.19		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFUnA	34.5	40.0	86.2		44.9	40.0	112	26.2		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFDoA	33.3	40.0	83.2		43.5	40.0	109	26.7		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFTrDA	31.4	40.0	78.4		42.7	40.0	107	30.6		70-130		02-May-18 21:17	1	02-May-18 21:28	1
PFTeDA	31.9	40.0	79.8		41.2	40.0	103	25.3		70-130		02-May-18 21:17	1	02-May-18 21:28	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	82.5		111		70-130	02-May-18 21:17	1	02-May-18 21:28	1
13C2-PFDA	SURR	94.9		109		70-130	02-May-18 21:17	1	02-May-18 21:28	1
d5-EtFOSAA	SURR	87.7		88.9		70-130	02-May-18 21:17	1	02-May-18 21:28	1

Sample ID: WI-A06-RW18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-01
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	22.6	0.428	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxA	26.1	0.842	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHpA	9.21	0.515	4.83	9.67	J	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxS	135	0.401	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOA	29.1	1.04	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFNA	ND	1.39	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOS	44.7	1.01	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDA	ND	1.24	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
MeFOSAA	ND	2.94	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
EtFOSAA	ND	1.87	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFUnA	ND	0.247	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDoA	ND	0.921	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTrDA	ND	0.912	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTeDA	ND	0.751	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
13C2-PFDA	SURR	86.8	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
d5-EtFOSAA	SURR	68.7	70 - 130	H	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

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

Sample ID: WI-A06-RW18P-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:30

Laboratory Data

Lab Sample: 1800728-02
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.5	0.431	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxA	29.3	0.847	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHpA	11.3	0.518	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxS	125	0.404	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOA	30.6	1.05	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFNA	1.59	1.40	4.86	9.73	J	B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOS	43.0	1.01	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDA	ND	1.24	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
MeFOSAA	ND	2.96	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
EtFOSAA	ND	1.88	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFUnA	ND	0.248	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDoA	ND	0.926	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTrDA	ND	0.917	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTeDA	ND	0.756	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
13C2-PFDA	SURR	98.6	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
d5-EtFOSAA	SURR	76.2	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

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

Sample ID: WI-A06-FB18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-03
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.415	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxA	ND	0.815	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHpA	ND	0.499	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxS	ND	0.388	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOA	ND	1.01	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFNA	ND	1.35	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOS	ND	0.974	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDA	ND	1.20	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
MeFOSAA	ND	2.85	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
EtFOSAA	ND	1.81	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFUnA	ND	0.239	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDoA	ND	0.891	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTrDA	ND	0.883	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTeDA	ND	0.727	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.0	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
d5-EtFOSAA	SURR	82.9	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: WI-A06-RW20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-04
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.0	0.429	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxA	19.1	0.843	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHpA	3.33	0.516	4.84	9.68	J	B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxS	118	0.402	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOA	43.7	1.05	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFNA	ND	1.39	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOS	30.5	1.01	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDA	ND	1.24	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
MeFOSAA	ND	2.94	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
EtFOSAA	ND	1.87	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFUnA	ND	0.247	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDoA	ND	0.922	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTrDA	ND	0.913	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTeDA	ND	0.752	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.9	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
d5-EtFOSAA	SURR	82.3	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

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

Sample ID: WI-A06-FB20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-05
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.412	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxA	ND	0.811	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHpA	ND	0.496	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxS	ND	0.386	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOA	ND	1.01	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFNA	ND	1.34	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOS	ND	0.968	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDA	ND	1.19	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
MeFOSAA	ND	2.83	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
EtFOSAA	ND	1.80	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFUnA	ND	0.237	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDoA	ND	0.886	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTrDA	ND	0.878	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTeDA	ND	0.723	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.0	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
13C2-PFDA	SURR	83.4	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
d5-EtFOSAA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

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

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
M	**Estimated Maximum Possible Concentration. (CA Region 2 projects only)**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
Q	**Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
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 #: 1800728 Temp: 3.1 °C
Storage ID: WK-2 Storage Secured: Yes ☑ No ☐

Project ID: CTO-4041 695610.06.FI.FS PO#: 10006-7-108295 Sampler: E. Cutler / G. Gardner (name)

TAT (check one): Standard: ☐ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: 10 days

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite 300	Corvallis	OR	541-768-3104	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Eric Cutler	4-20-18	1230	Bettina Benedict	04/21/18	0740
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FedEx

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s): Quantity	Container(s): Type	Container(s): Matrix	Mod. EPA Method 537: PFOA/ PFOS	Mod. EPA Method 537: UCMR3 PFAS List:6	Mod. EPA Method 537: 537 List: 14	Mod. EPA Method 537: Full List of 26	Mod. EPA Method 537: Other: Please List Below	EPA Method 537(DW only): PFOA/ PFOS	EPA Method 537(DW only): UCMR3 PFAS List:6	EPA Method 537(DW only): PFAS List: 14	Comments
W1-A06-RW19-0418	4/20/18	10:27	DW	2	P	DW								X	TZ Preserved
W1-A06-RW19P-0418		10:30												X	
W1-A06-FB19-0418		~~10:30~~ 10:27												X	
W1-A06-RW20-0418		10:10												X	
W1-A06-FB20-0418		10:10												X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
Name: See "invoice to"
Company:
Address:
City: State: Zip:
Phone: Fax:
Email:

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

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

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1800728 **TAT** 10

Samples Arrival:	**Date/Time** 04/21/18 0938	**Initials:** RBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 04/23/18 0947	**Initials:** RBB	**Location:** WR-2 **Shelf/Rack:** E7

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None

Temp °C: 3.2 (uncorrected)	**Time:** 0940	**Thermometer ID:** IR-4
Temp °C: 3.1 (corrected)	**Probe used:** Yes☐ No☑	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 8107 0168 3994	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?					✓		
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None		(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return		Dispose	

Comments:

EXTRACTION INFORMATION

Process Sheet

Workorder: 1800728

Prep Expiration: 2018-May-04
Client: CH2M Hill

Workorder Due: 03-May-18 00:00

TAT: 12

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

Prep Batch: B8D0148

Prep Data Entered: 4/26/18 llm
Date and Initials

Version: 14 Analytes
DoD: DoD QSM 5.1

Initial Sequence: _____

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1800728-01	A	☐	☐	WI-A06-RW18-0418	"WI-A06-RW19-0418" ✓ ①	WR-2 E-7	HDPE Bottle, 250 mL
1800728-02		☐	☐	WI-A06-RW18P-0418	"WI-A06-RW19P-0418" ✓	WR-2 E-7	HDPE Bottle, 250 mL
1800728-03		☐	☐	WI-A06-FB18-0418	"WI-A06-FB19-0418" ✓	WR-2 E-7	HDPE Bottle, 250 mL
1800728-04		☑	☑	WI-A06-RW20-0418		WR-2 E-7	HDPE Bottle, 250 mL
1800728-05		☑	☑	WI-A06-FB20-0418		WR-2 E-7	HDPE Bottle, 250 mL

① Sample ID's verified by Bettina. JR 4/27/18

Pre-Prep Check Out: JR 4/27/18
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: JR 4/27/18
Spike Reconciled Initals/Date: KC 4/27/18
VialBoxID: Raichu

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DW DoD Unmodified
Method: 537 PFAS DW Unmodified

B8D0148

Chemist: 7R

Prep Date/Time: ~~27~~-Apr-18 ~~08:38~~ 27 11:30 7R 4-27-1

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HRMS-8

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B8D0148-BLK1 (A)	N/A	N/A	(0.250)	7R HN 4.27.18	7R HN 4.27.18	KC HN 4/27/18
☐	B8D0148-BS1			(0.250)			
☐	B8D0148-BSD1			0.250			
☐	1800690-01	278.45	27.04	0.25141			
☐	1800690-02	299.97	27.65	0.27232			
☐	1800690-03	297.24	27.82	0.26942			
☐	1800690-04 (B)	~~298.05~~ 299.09 JR 4/27/18	37.67	0.26142			
☐	1800690-05	296.31	27.76	0.26855			
☐	1800702-09RE1	294.04	37.77	0.25627			
☐	1800702-10RE1	293.39	37.64	0.25575			
☐	1800723-01	295.01	37.34	0.25767			
☐	1800724-01	293.81	37.29	0.25652			
☐	1800728-01	296.14	37.60	0.25854			
☐	1800728-02	294.95	37.91	0.25704			
☐	1800728-03	294.17	27.10	0.26707			
☐	1800728-04	295.61	37.45	0.25816			

SS/IS: 18D0505, 20µL (V2)
NS: 18D0507, 10µL (V2)
IS/RS: 18D0506, 20µL (V2)

SPE Chem: Strata-X 33µm 500mg/6mL
Lot#: 518-000744
Ele SOLV: MeOH
Lot#: JB064809
Final Volume(s) 1mL

Notes: (A) 1.25g Trizma added to BLK, BS1, & BSD1. JR 4/27/18
(B) Sample stated "none" under preservative, so pH was taken, 5, and 1.25g Trizma added. pH read again & it was 7. JR 4/27/18

Comments: Assume 1 g = 1 mL
Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DW DoD Unmodified
Method: 537 PFAS DW Unmodified

B8D0148

Chemist: 7R

Prep Date/Time: ~~28~~-Apr-18 ~~08:38~~ 27 11:30 7R 4-27-18

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID:

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	1800728-05	295.99	27.50	0.26849	7R HN 4.27.18	7R HN 4.27.18	VC HN 4/27/18
☐	1800758-01	295.41	37.53	0.25788	↓	↓	↓
☐	1800758-02	296.43	28.11	0.26832	↓	↓	↓
☐	1800758-03	298.68	27.62	0.27106	↓	↓	↓

SS/IS: 18D0505, 20µL (V2)
NS: 18D0507, 10µL (V2)
IS/RS: 18D0506, 20µL (V2)

SPE Chem: Strata-X 33µm 500mg/6mL
Lot#: S18-000744
Ele SOLV: MEOH
Lot#: JB064809
Final Volume(s): 1mL

Notes:

Comments: Assume 1 g = 1 mL
Cen = Centrifuged

Batch: B8D0148

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1800690-01	0.25141	NA	NA	1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800690-02	0.27232			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800690-03	0.26942			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800690-04	0.26142			1000	23-Apr-18 08:38	FBR			Aqueous	537 PFAS DW Unmodified
1800690-05	0.26855			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800702-09RE1	0.25627			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800702-10RE1	0.25575			1000	23-Apr-18 09:00	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800723-01	0.25767			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800724-01	0.25652			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW Unmodified
1800728-01	0.25854			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800728-02	0.25704			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800728-03	0.26707			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800728-04	0.25816			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800728-05	0.26849			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800758-01	0.25788			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800758-02	0.26832			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
1800758-03	0.27106			1000	23-Apr-18 08:38	FBR			Drinking Water	537 PFAS DW DoD Unmod
B8D0148-BLK1	0.25			1000	23-Apr-18 08:38	FBR				QC
B8D0148-BS1	0.25			1000	23-Apr-18 08:38	FBR	18D0507	10		QC
B8D0148-BSD1	0.25			1000	23-Apr-18 08:38	FBR	18D0507	10		QC

4/20/18

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-20.qld

Last Altered: Thursday, May 03, 2018 13:10:44 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:11:46 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06
02

Name: 180502M4_20, Date: 02-May-2018, Time: 21:40:29, ID: B8D0148-BLK1 LRB 0.25, Description: LRB

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.64e4	0.2500		2.90				
2	2	PFHxA	313.2 > 268.9	2.35e2	3.36e4	0.2500		3.30	3.27	0.0700	0.399	
3	3	PFHpA	363 > 318.9		3.36e4	0.2500		3.75				
4	4	PFHxS	398.9 > 79.6		1.64e4	0.2500		3.84				
5	5	PFOA	413 > 368.7	3.97e2	3.36e4	0.2500		4.13	4.12	0.118	0.519	
6	6	PFNA	463 > 418.8		3.36e4	0.2500		4.44				
7	7	PFOS	499 >79.9		1.64e4	0.2500		4.49				
8	8	PFDA	513 > 468.8		3.36e4	0.2500		4.71				
9	9	N-MeFOSAA	570.1 > 419.0		3.28e4	0.2500		4.81				
10	10	N-EtFOSAA	584.2 >419.0		3.28e4	0.2500		4.93				
11	11	PFUnA	563 > 518.9		3.36e4	0.2500		4.94				
12	12	PFDoA	612.9 > 318.8		3.36e4	0.2500		5.15				
13	13	PFTrDA	662.9 > 618.9		3.36e4	0.2500		5.33				
14	14	PFTeDA	712.9 > 668.8		3.36e4	0.2500		5.50				
15	15	13C2-PFHxA	315 > 269.8	1.63e4	3.36e4	0.2500	0.506	3.30	3.27	4.84	38.3	95.8
16	16	13C2-PFDA	515.1 > 469.9	2.82e4	3.36e4	0.2500	0.810	4.70	4.70	8.41	41.5	103.8
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.37e4	3.28e4	0.2500	1.119	4.81	4.91	41.1	147	91.9
18	18	13C2-PFOA	414.9 > 369.7	3.36e4	3.36e4	0.2500	1.000	3.92	4.12	10.0	40.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.64e4	1.64e4	0.2500	1.000	4.29	4.48	28.7	115	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.28e4	3.28e4	0.2500	1.000	4.62	4.81	40.0	160	100.0

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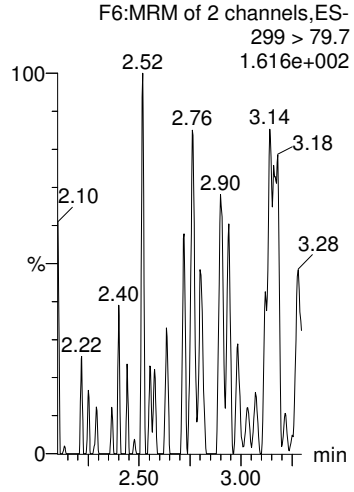
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-20.qld

Last Altered: Thursday, May 03, 2018 13:10:44 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:11:46 Pacific Daylight Time

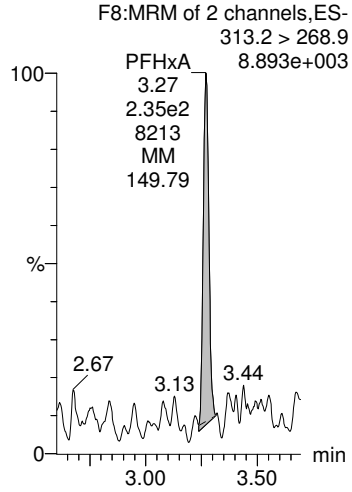
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_20, Date: 02-May-2018, Time: 21:40:29, ID: B8D0148-BLK1 LRB 0.25, Description: LRB

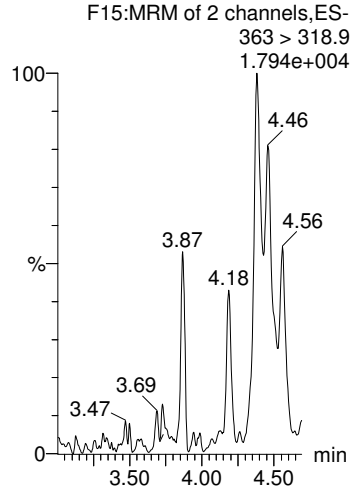
PFBS



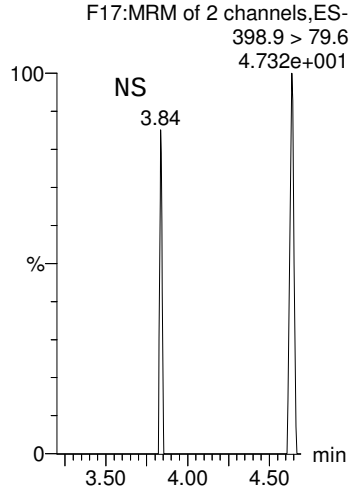
PFHxA



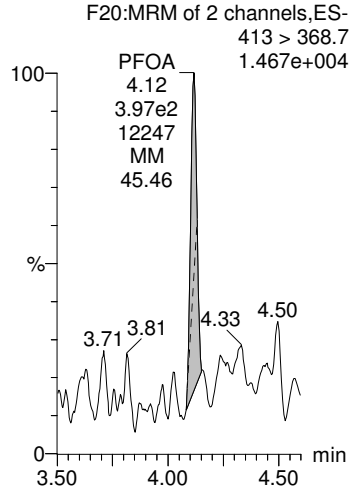
PFHpA



PFHxS



PFOA



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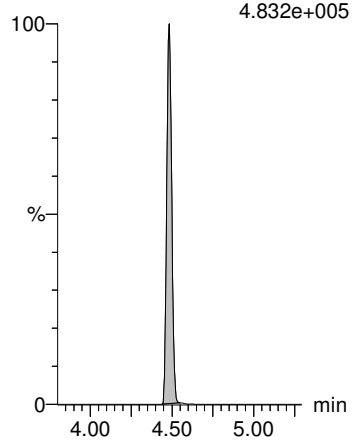

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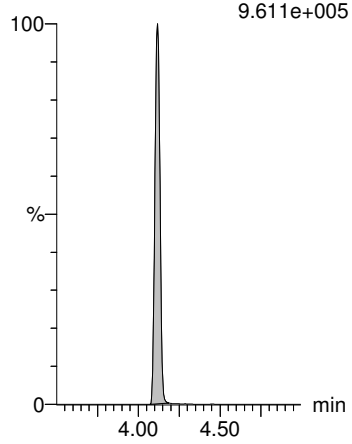

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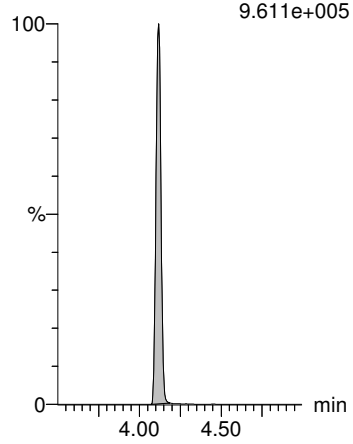

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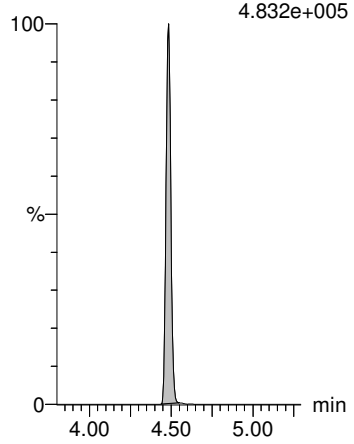

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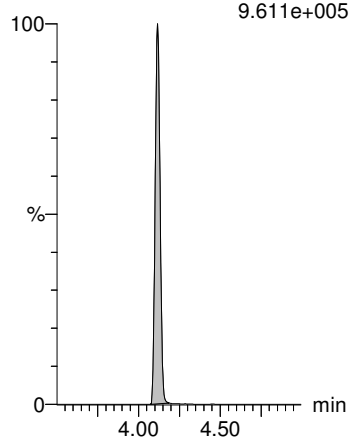

AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-20.qld

Last Altered: Thursday, May 03, 2018 13:10:44 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:11:46 Pacific Daylight Time

Name: 180502M4_20, Date: 02-May-2018, Time: 21:40:29, ID: B8D0148-BLK1 LRB 0.25, Description: LRB

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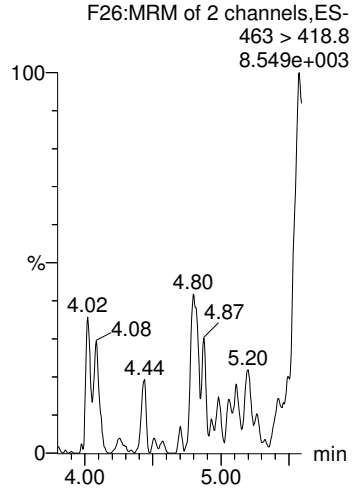
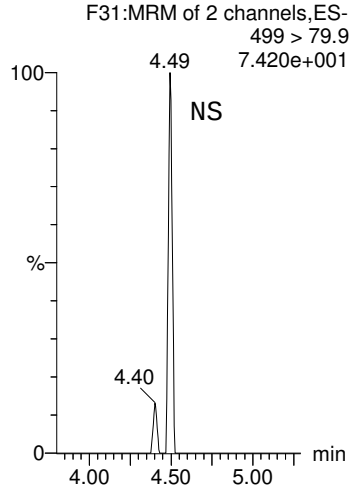


PFOS



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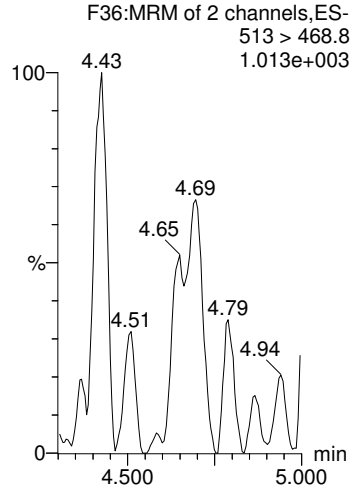
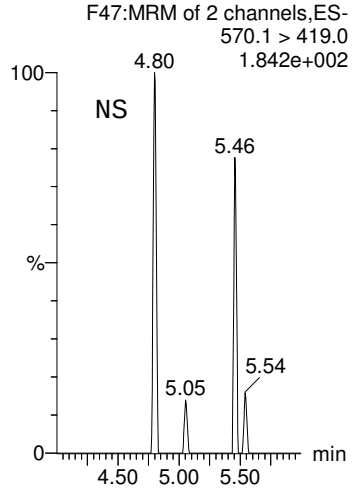


N-MeFOSAA



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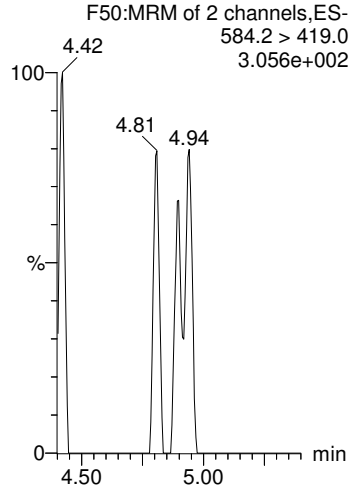

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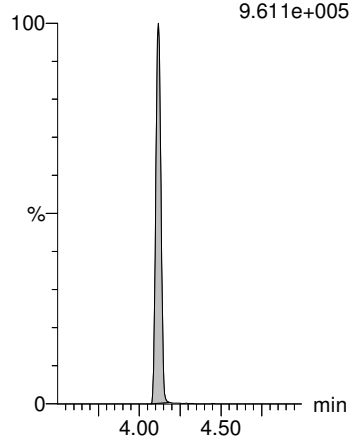

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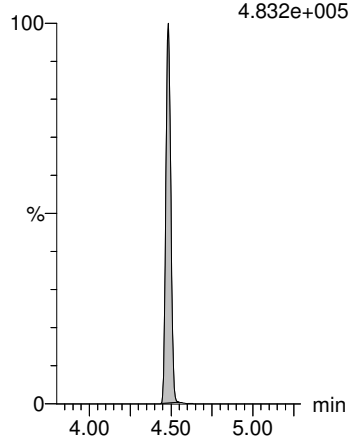

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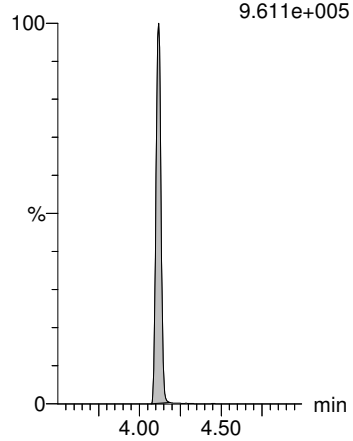
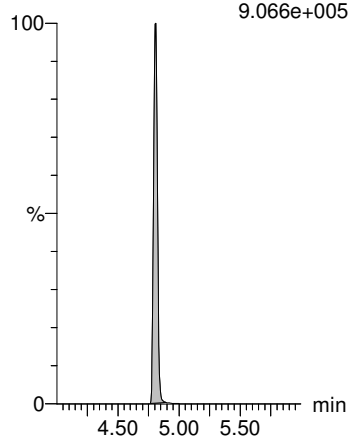


d3-N-MeFOSAA



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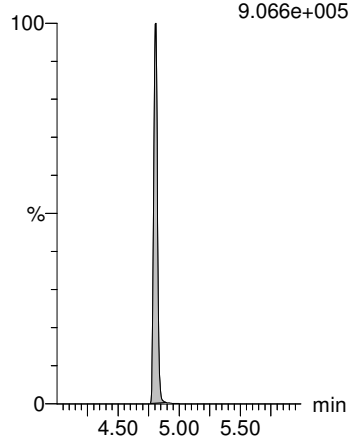

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Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-20.qld

Last Altered: Thursday, May 03, 2018 13:10:44 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:11:46 Pacific Daylight Time

Name: 180502M4_20, Date: 02-May-2018, Time: 21:40:29, ID: B8D0148-BLK1 LRB 0.25, Description: LRB

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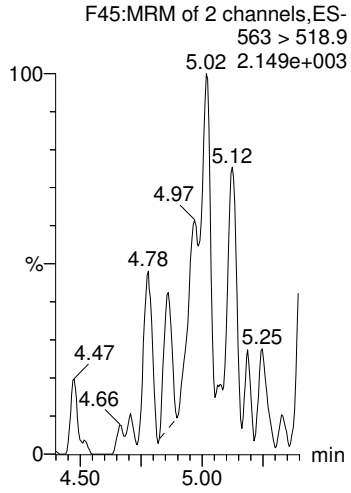

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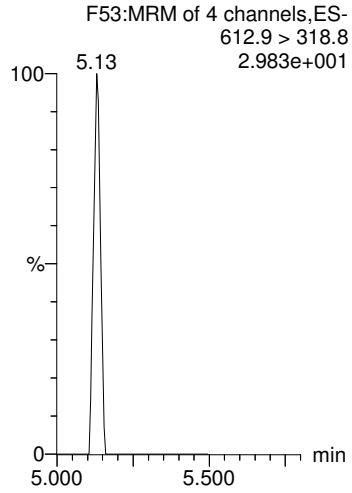
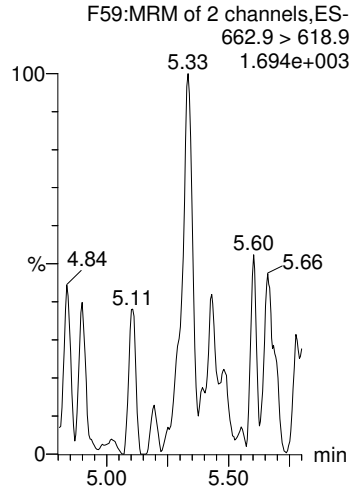
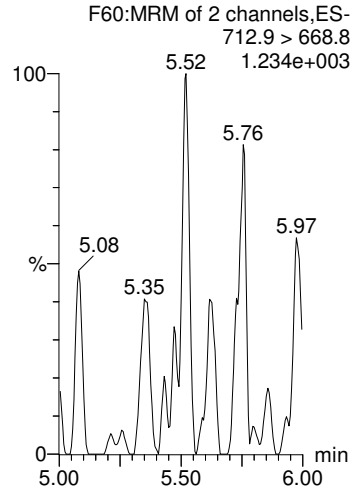


PFTrDA



PFTeDA



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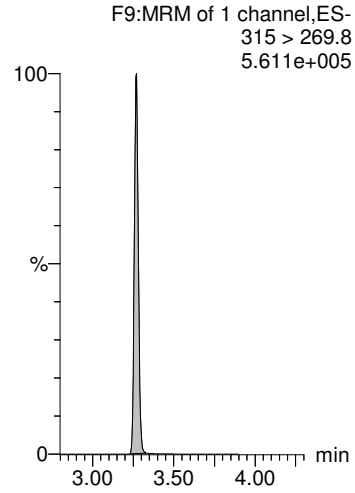

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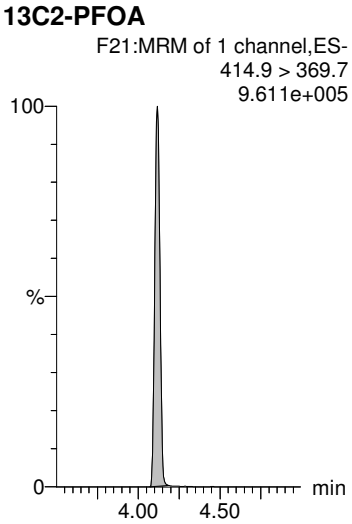

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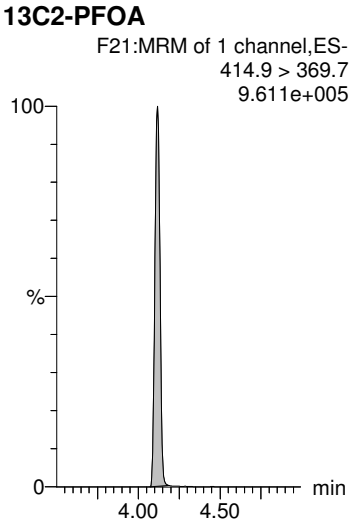

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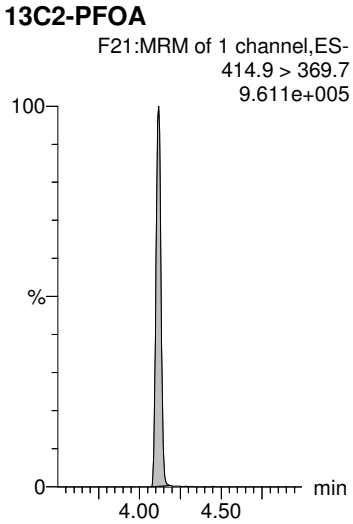

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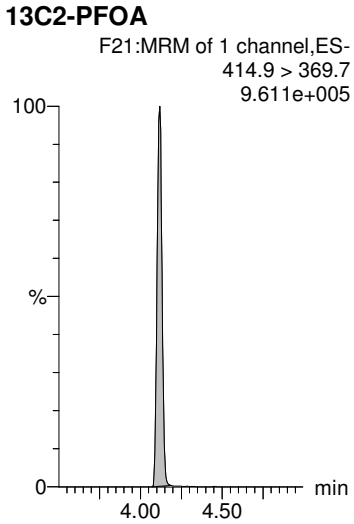

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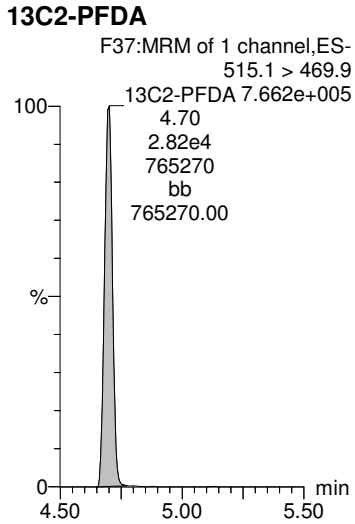

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Vista Analytical Laboratory

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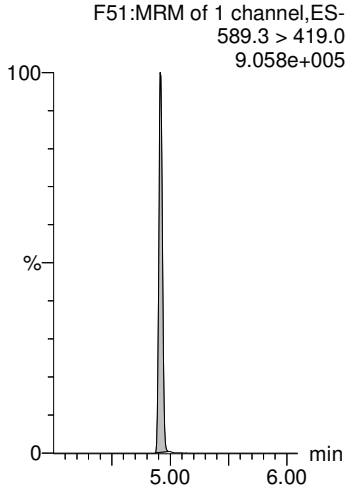
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-20.qld

Last Altered: Thursday, May 03, 2018 13:10:44 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:11:46 Pacific Daylight Time

Name: 180502M4_20, Date: 02-May-2018, Time: 21:40:29, ID: B8D0148-BLK1 LRB 0.25, Description: LRB

d5-N-EtFOSAA



AR 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-18.qld

Last Altered: Thursday, May 03, 2018 12:50:34 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:52:20 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06
02

Name: 180502M4_18, Date: 02-May-2018, Time: 21:17:29, ID: B8D0148-BS1 LFB 0.25, Description: LFB

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	5.06e3	1.58e4	0.2500		2.91	2.91	9.17	33.7	95.3
2	2	PFHxA	313.2 > 268.9	2.20e4	3.92e4	0.2500		3.30	3.27	5.62	32.0	80.1
3	3	PFHpA	363 > 318.9	2.32e4	3.92e4	0.2500		3.75	3.74	5.92	34.0	85.1
4	4	PFHxS	398.9 > 79.6	4.36e3	1.58e4	0.2500		3.85	3.84	7.91	33.4	91.6
5	5	PFOA	413 > 368.7	3.45e4	3.92e4	0.2500		4.13	4.12	8.80	38.6	96.5
6	6	PFNA	463 > 418.8	3.34e4	3.92e4	0.2500		4.44	4.43	8.51	35.2	88.1
7	7	PFOS	499 >79.9	5.13e3	1.58e4	0.2500		4.50	4.49	9.31	33.4	90.4
8	8	PFDA	513 > 468.8	3.53e4	3.92e4	0.2500		4.71	4.71	9.01	30.6	76.6
9	9	N-MeFOSAA	570.1 > 419.0	1.10e4	3.37e4	0.2500		4.81	4.81	13.0	33.4	83.4
10	10	N-EtFOSAA	584.2 >419.0	8.46e3	3.37e4	0.2500		4.93	4.93	10.0	34.9	87.3
11	11	PFUnA	563 > 518.9	3.58e4	3.92e4	0.2500		4.94	4.94	9.11	34.5	86.2
12	12	PFDoA	612.9 > 318.8	4.95e3	3.92e4	0.2500		5.15	5.14	1.26	33.3	83.2
13	13	PFTrDA	662.9 > 618.9	4.44e4	3.92e4	0.2500		5.33	5.33	11.3	31.4	78.4
14	14	PFTeDA	712.9 > 668.8	3.80e4	3.92e4	0.2500		5.50	5.53	9.68	31.9	79.8
15	15	13C2-PFHxA	315 > 269.8	1.64e4	3.92e4	0.2500	0.506	3.31	3.27	4.17	33.0	82.5
16	16	13C2-PFDA	515.1 > 469.9	3.02e4	3.92e4	0.2500	0.810	4.70	4.71	7.69	38.0	94.9
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.31e4	3.37e4	0.2500	1.119	4.81	4.92	39.3	140	87.7
18	18	13C2-PFOA	414.9 > 369.7	3.92e4	3.92e4	0.2500	1.000	3.92	4.12	10.0	40.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.58e4	1.58e4	0.2500	1.000	4.29	4.49	28.7	115	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.37e4	3.37e4	0.2500	1.000	4.62	4.81	40.0	160	100.0

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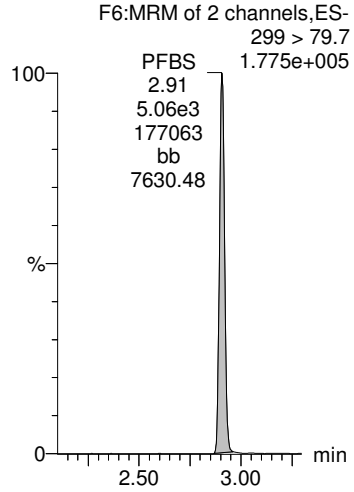
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-18.qld

Last Altered: Thursday, May 03, 2018 12:50:34 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:52:20 Pacific Daylight Time

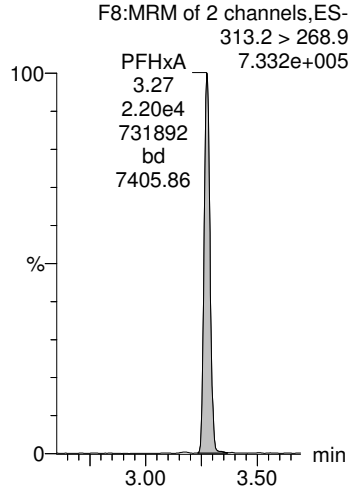
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_18, Date: 02-May-2018, Time: 21:17:29, ID: B8D0148-BS1 LFB 0.25, Description: LFB

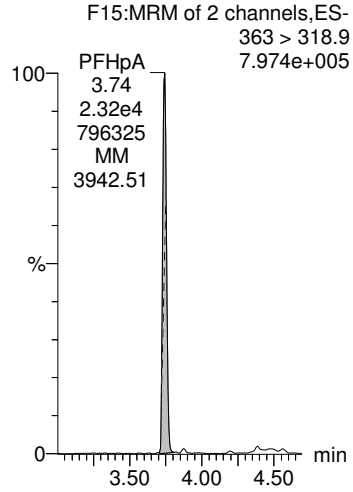
PFBS



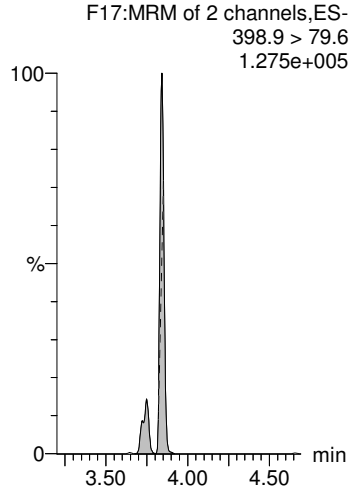
PFHxA



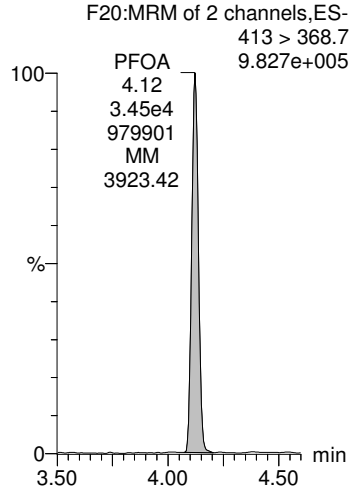
PFHpA



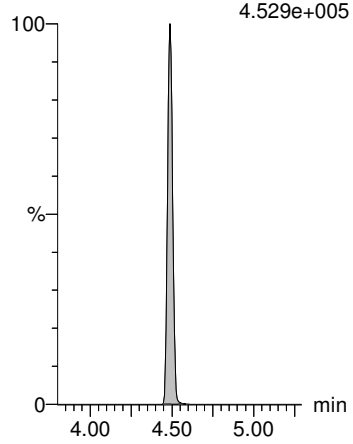
PFHxS



PFOA



13C4-PFOS



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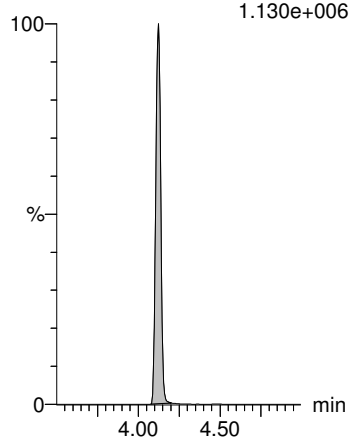

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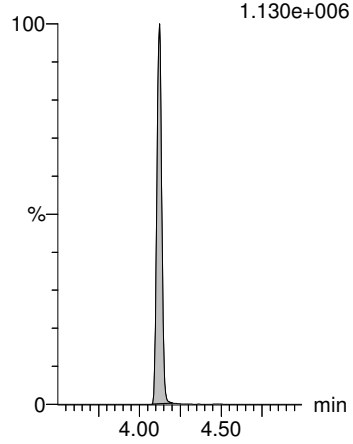

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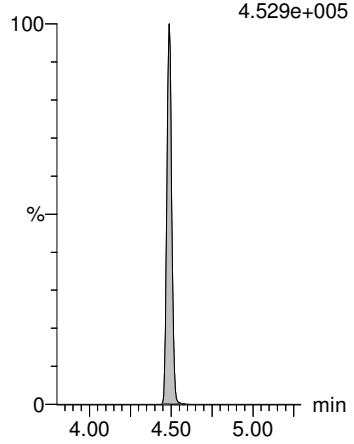

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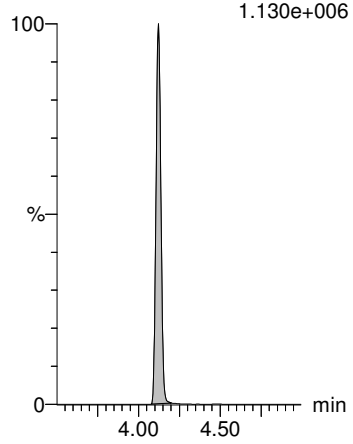

AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-18.qld

Last Altered: Thursday, May 03, 2018 12:50:34 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:52:20 Pacific Daylight Time

Name: 180502M4_18, Date: 02-May-2018, Time: 21:17:29, ID: B8D0148-BS1 LFB 0.25, Description: LFB

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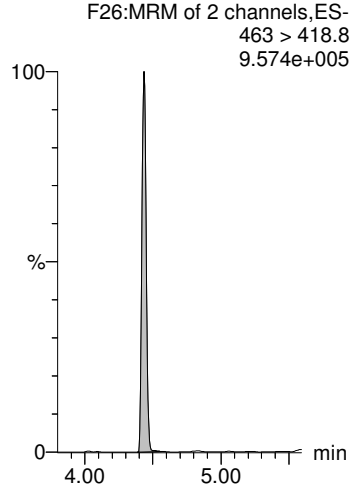

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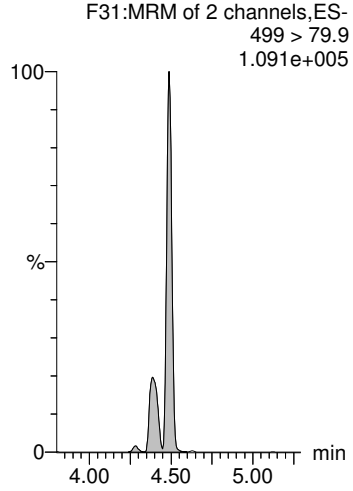

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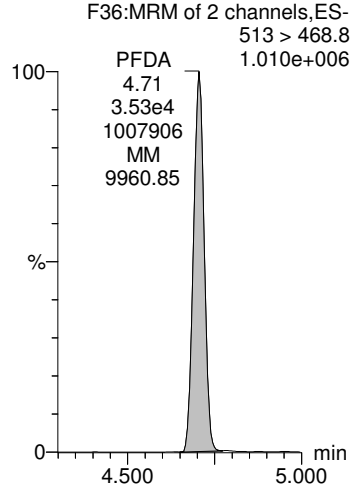

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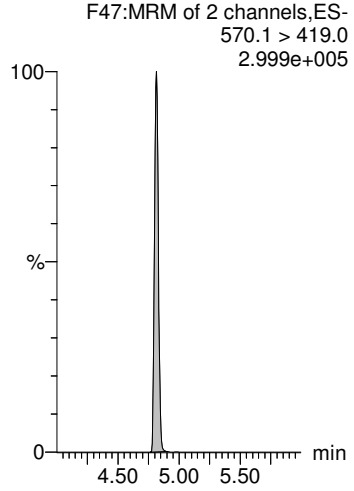

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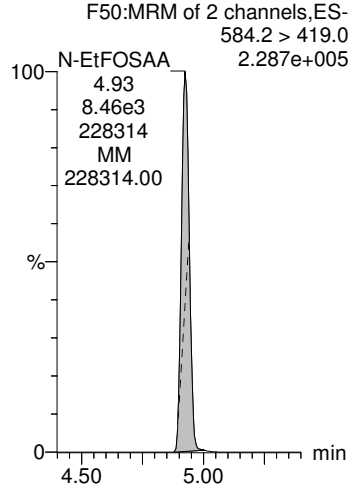

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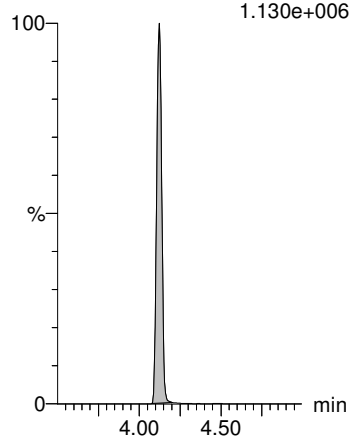

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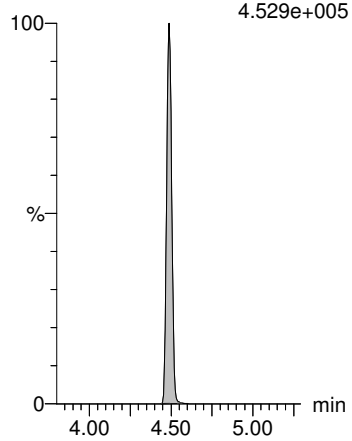

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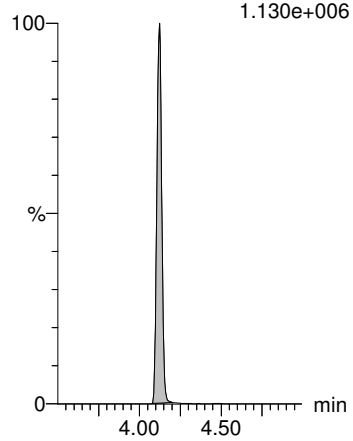

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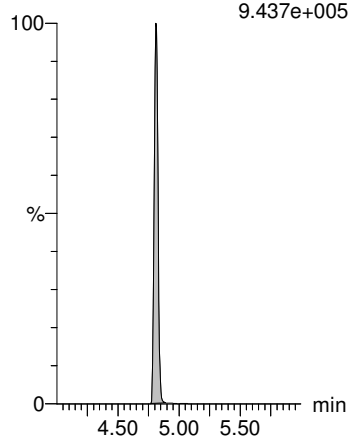

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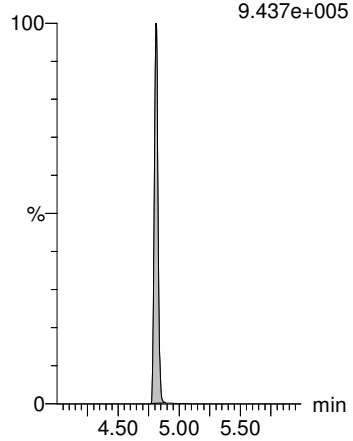

AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-18.qld

Last Altered: Thursday, May 03, 2018 12:50:34 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:52:20 Pacific Daylight Time

Name: 180502M4_18, Date: 02-May-2018, Time: 21:17:29, ID: B8D0148-BS1 LFB 0.25, Description: LFB

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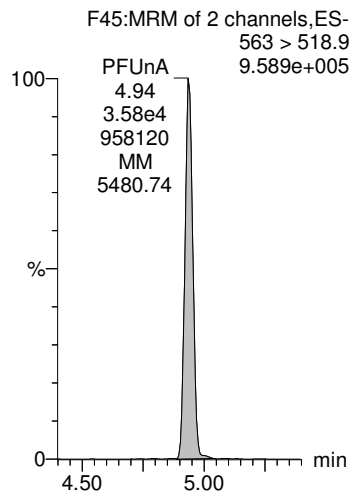
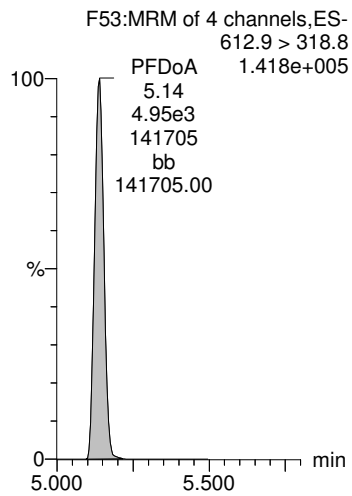


PFDoA



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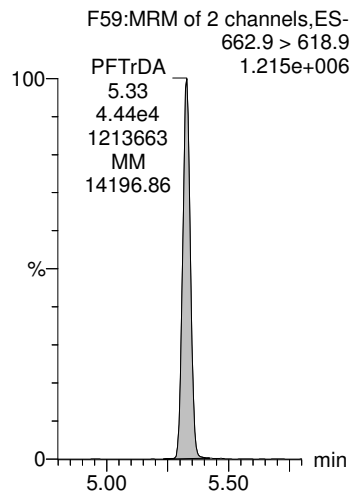

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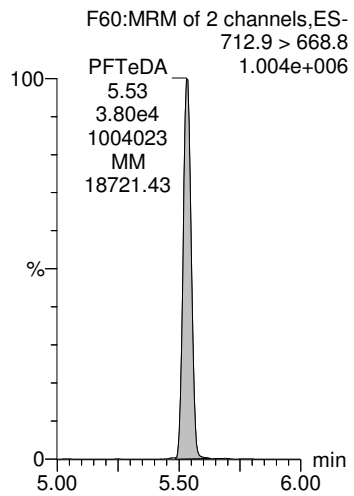

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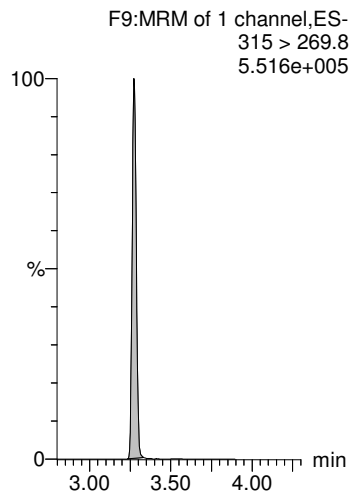

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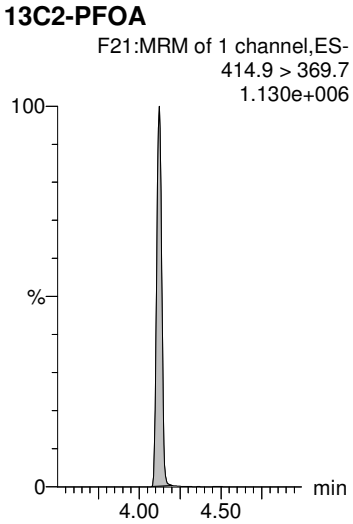

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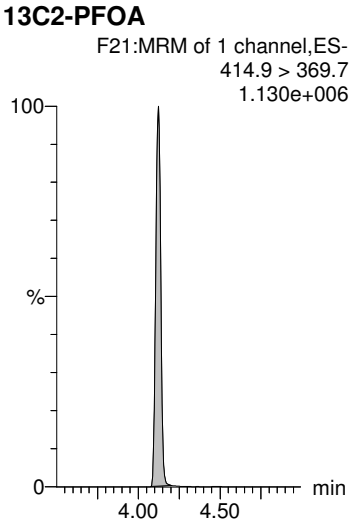

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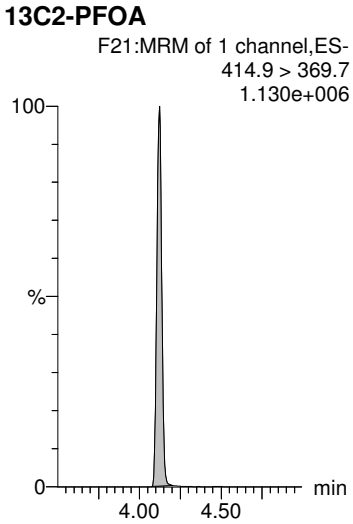

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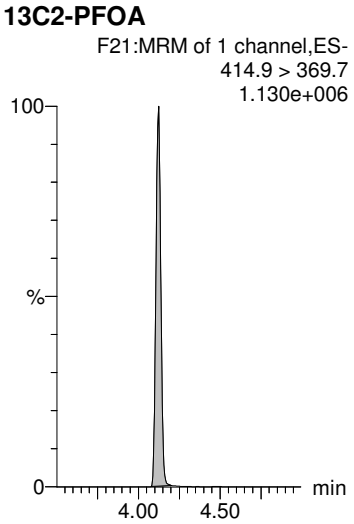

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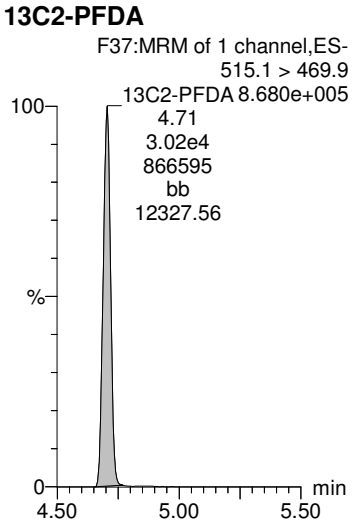


AR 5/3/2018

Vista Analytical Laboratory

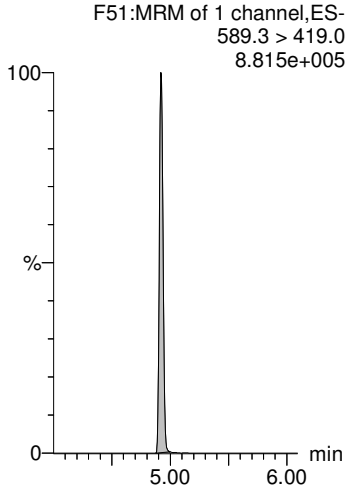
rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-18.qld

Last Altered: Thursday, May 03, 2018 12:50:34 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:52:20 Pacific Daylight Time

Name: 180502M4_18, Date: 02-May-2018, Time: 21:17:29, ID: B8D0148-BS1 LFB 0.25, Description: LFB

d5-N-EtFOSAA



AR 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-19.qld

Last Altered: Thursday, May 03, 2018 12:58:38 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:59:12 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06
02

Name: 180502M4_19, Date: 02-May-2018, Time: 21:28:59, ID: B8D0148-BSD1 LFBD 0.25, Description: LFBD

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	5.38e3	1.73e4	0.2500		2.90	2.90	8.91	32.8	92.6
2	2	PFHxA	313.2 > 268.9	2.43e4	3.07e4	0.2500		3.30	3.27	7.92	45.1	112.9
3	3	PFHpA	363 > 318.9	2.46e4	3.07e4	0.2500		3.75	3.74	8.04	46.2	115.6
4	4	PFHxS	398.9 > 79.6	4.40e3	1.73e4	0.2500		3.84	3.84	7.28	30.8	84.3
5	5	PFOA	413 > 368.7	2.63e4	3.07e4	0.2500		4.13	4.12	8.59	37.7	94.2
6	6	PFNA	463 > 418.8	2.82e4	3.07e4	0.2500		4.44	4.43	9.19	38.1	95.2
7	7	PFOS	499 >79.9	5.19e3	1.73e4	0.2500		4.49	4.48	8.58	30.8	83.4
8	8	PFDA	513 > 468.8	3.70e4	3.07e4	0.2500		4.71	4.70	12.1	41.3	103.1
9	9	N-MeFOSAA	570.1 > 419.0	1.03e4	3.31e4	0.2500		4.81	4.81	12.5	31.9	79.8
10	10	N-EtFOSAA	584.2 >419.0	8.14e3	3.31e4	0.2500		4.93	4.92	9.83	34.2	85.4
11	11	PFUnA	563 > 518.9	3.63e4	3.07e4	0.2500		4.94	4.93	11.9	44.9	112.2
12	12	PFDoA	612.9 > 318.8	5.06e3	3.07e4	0.2500		5.15	5.13	1.65	43.5	108.8
13	13	PFTrDA	662.9 > 618.9	4.73e4	3.07e4	0.2500		5.33	5.32	15.4	42.7	106.8
14	14	PFTeDA	712.9 > 668.8	3.83e4	3.07e4	0.2500		5.50	5.53	12.5	41.2	103.0
15	15	13C2-PFHxA	315 > 269.8	1.72e4	3.07e4	0.2500	0.506	3.30	3.27	5.61	44.4	110.9
16	16	13C2-PFDA	515.1 > 469.9	2.71e4	3.07e4	0.2500	0.810	4.70	4.70	8.83	43.6	109.0
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.29e4	3.31e4	0.2500	1.119	4.81	4.92	39.8	142	88.9
18	18	13C2-PFOA	414.9 > 369.7	3.07e4	3.07e4	0.2500	1.000	3.92	4.12	10.0	40.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.73e4	1.73e4	0.2500	1.000	4.29	4.48	28.7	115	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.31e4	3.31e4	0.2500	1.000	4.62	4.81	40.0	160	100.0

AR 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

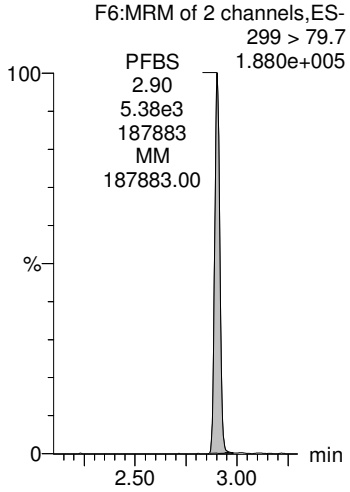
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-19.qld

Last Altered: Thursday, May 03, 2018 12:58:38 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:59:12 Pacific Daylight Time

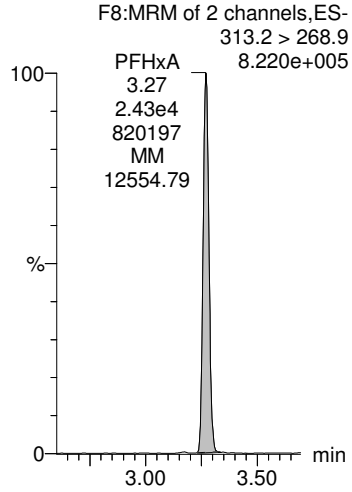
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_19, Date: 02-May-2018, Time: 21:28:59, ID: B8D0148-BSD1 LFBD 0.25, Description: LFBD

PFBS



PFHxA



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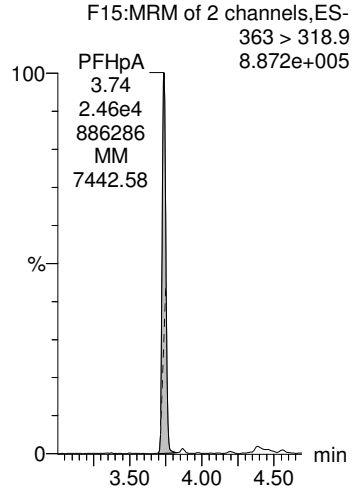

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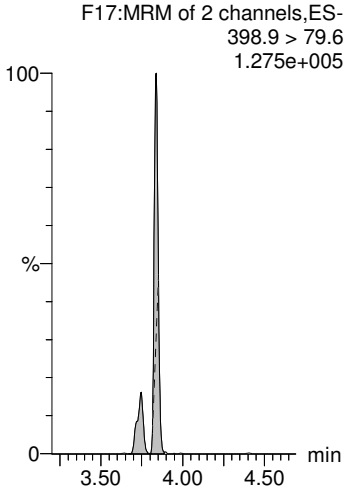
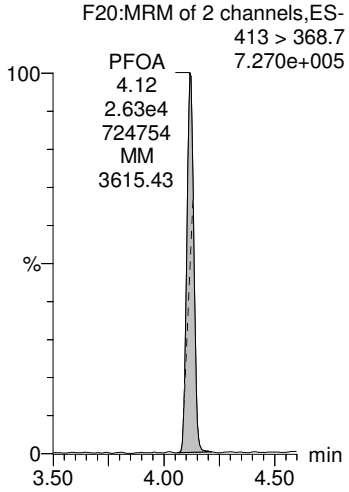


PFOA



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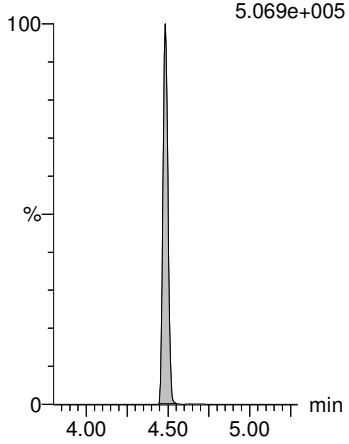

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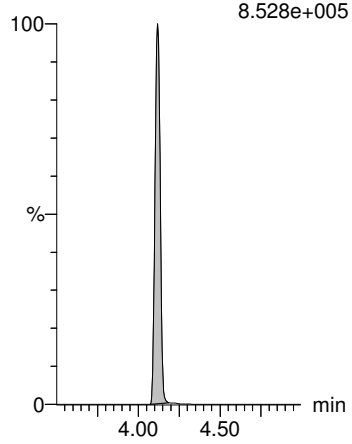

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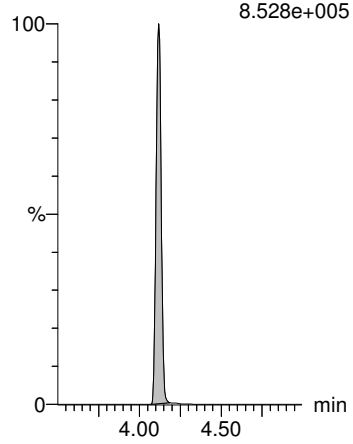

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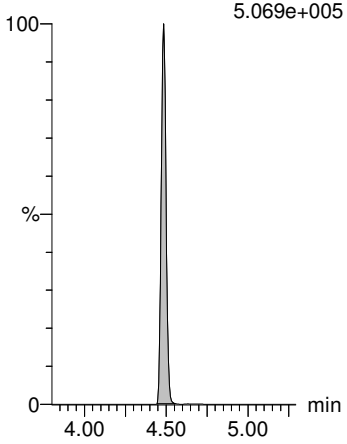

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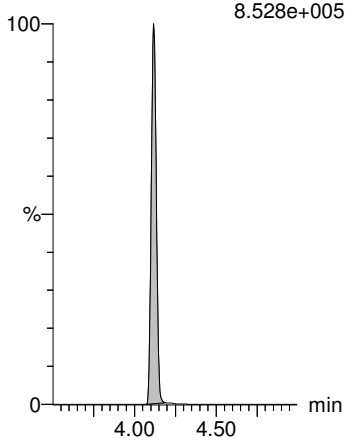


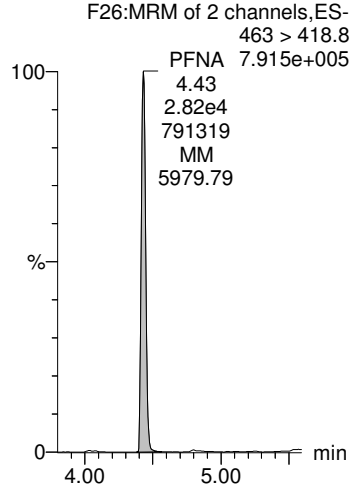
AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-19.qld

Last Altered: Thursday, May 03, 2018 12:58:38 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:59:12 Pacific Daylight Time

Name: 180502M4_19, Date: 02-May-2018, Time: 21:28:59, ID: B8D0148-BSD1 LFBD 0.25, Description: LFBD

PFNA



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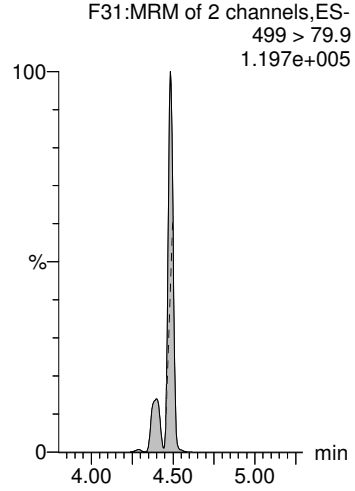
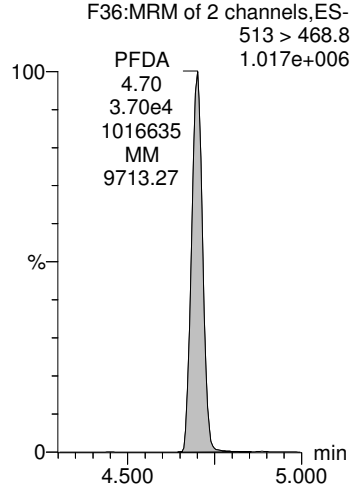
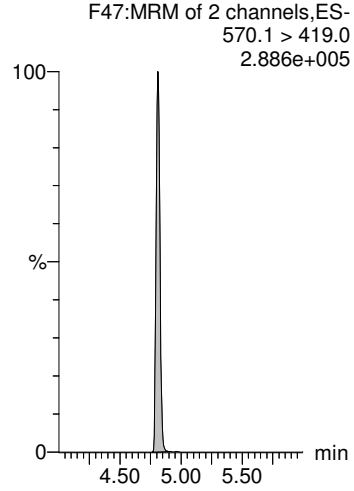


PFDA



N-MeFOSAA



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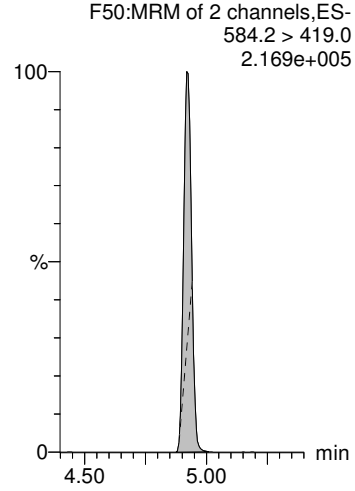
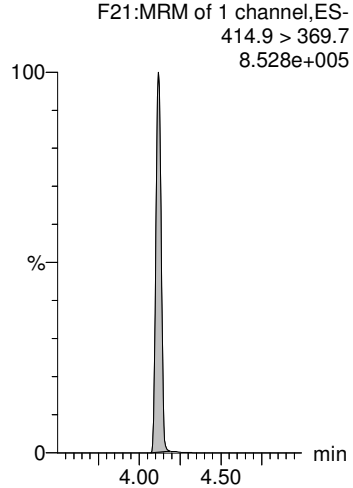


13C2-PFOA



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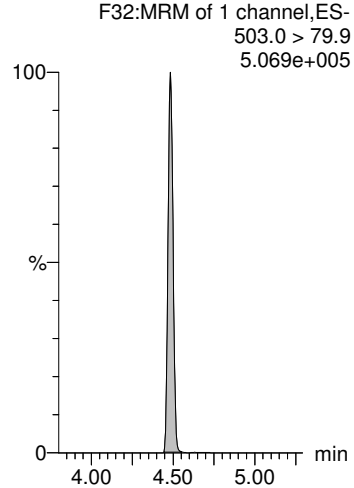

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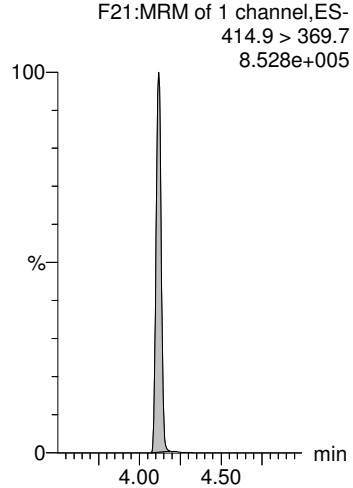

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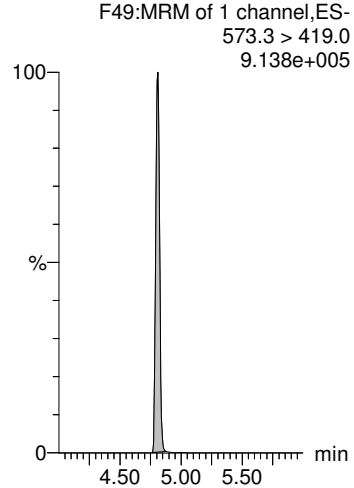

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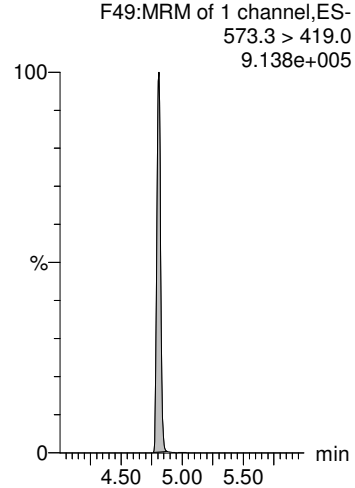


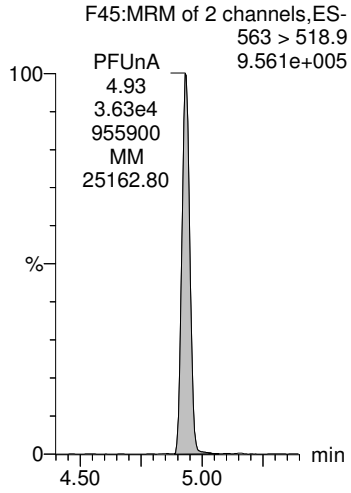
AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-19.qld

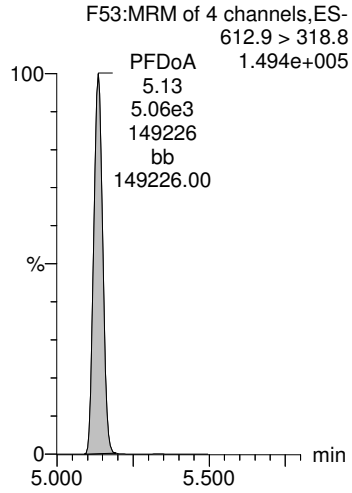
Last Altered: Thursday, May 03, 2018 12:58:38 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:59:12 Pacific Daylight Time

Name: 180502M4_19, Date: 02-May-2018, Time: 21:28:59, ID: B8D0148-BSD1 LFBD 0.25, Description: LFBD

PFUnA



PFDoA



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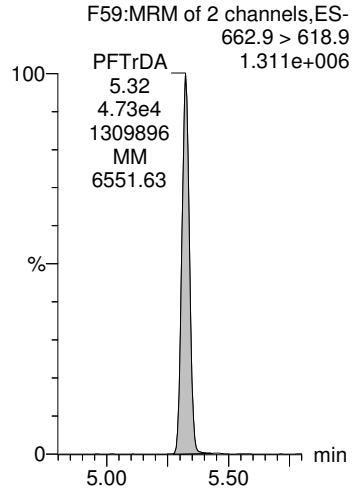
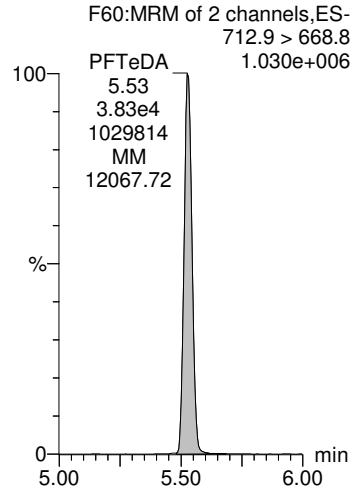
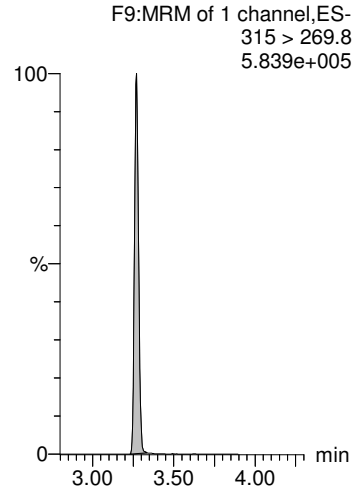


PFTeDA



13C2-PFHxA



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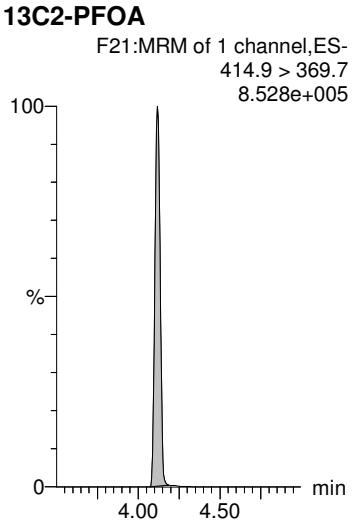

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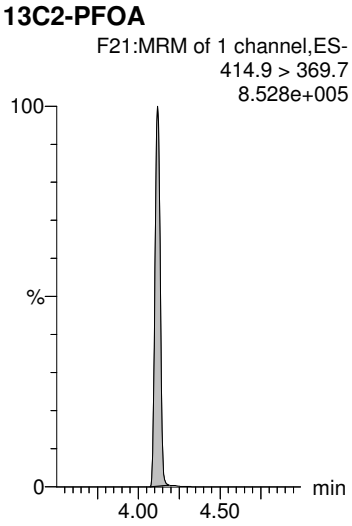

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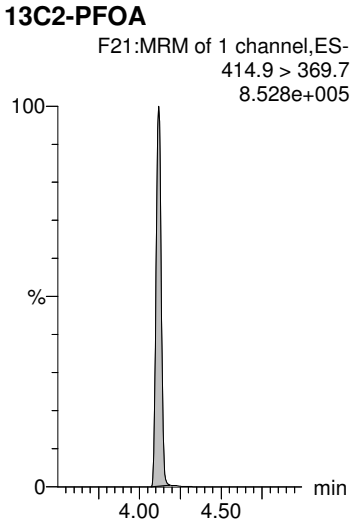

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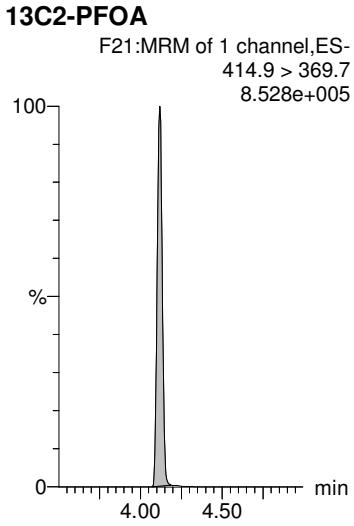

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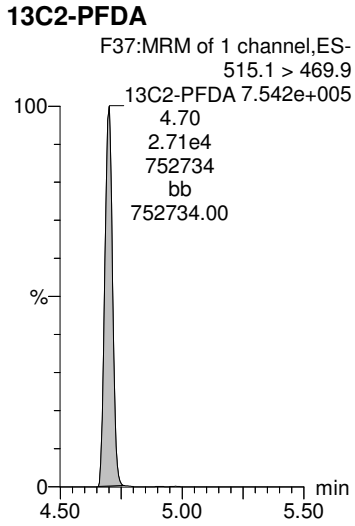


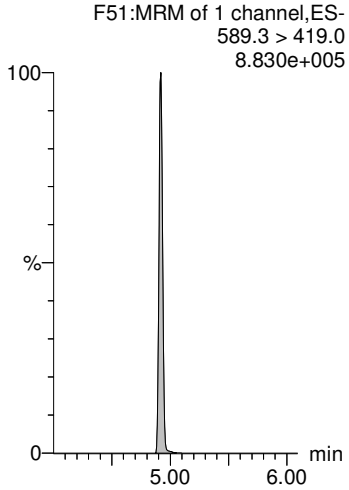
AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-19.qld

Last Altered: Thursday, May 03, 2018 12:58:38 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:59:12 Pacific Daylight Time

Name: 180502M4_19, Date: 02-May-2018, Time: 21:28:59, ID: B8D0148-BSD1 LFBD 0.25, Description: LFBD

d5-N-EtFOSAA



AR 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-37.qld

Last Altered: Thursday, May 03, 2018 12:34:30 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:05:08 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_37, Date: 03-May-2018, Time: 00:55:41, ID: 1800728-01 WI-A06-RW18-0418 0.25854, Description: WI-A06-RW18-0418

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.48e3	1.57e4	0.2585		2.88	2.89	6.36	22.6	
2	2	PFHxA	313.2 > 268.9	1.61e4	3.41e4	0.2585		3.28	3.25	4.73	26.1	
3	3	PFHpA	363 > 318.9	5.64e3	3.41e4	0.2585		3.93	3.72	1.66	9.21	
4	4	PFHxS	398.9 > 79.6	1.81e4	1.57e4	0.2585		4.02	3.82	33.1	135	
5	5	PFOA	413 > 368.7	2.34e4	3.41e4	0.2585		4.31	4.10	6.86	29.1	
6	6	PFNA	463 > 418.8	1.01e3	3.41e4	0.2585		4.62	4.41	0.296	1.18	
7	7	PFOS	499 >79.9	7.04e3	1.57e4	0.2585		4.66	4.46	12.9	44.7	
8	8	PFDA	513 > 468.8	2.38e2	3.41e4	0.2585		4.89	4.68	0.0697	0.225	
9	9	N-MeFOSAA	570.1 > 419.0		3.22e4	0.2585		4.99				
10	10	N-EtFOSAA	584.2 >419.0		3.22e4	0.2585		5.11				
11	11	PFUnA	563 > 518.9		3.41e4	0.2585		5.12				
12	12	PFDoA	612.9 > 318.8		3.41e4	0.2585		5.13				
13	13	PFTrDA	662.9 > 618.9		3.41e4	0.2585		5.51				
14	14	PFTeDA	712.9 > 668.8		3.41e4	0.2585		5.72				
15	15	13C2-PFHxA	315 > 269.8	1.51e4	3.41e4	0.2585	0.506	3.29	3.25	4.45	34.0	87.9
16	16	13C2-PFDA	515.1 > 469.9	2.40e4	3.41e4	0.2585	0.810	4.68	4.68	7.03	33.6	86.8
17	17	d5-N-EtFOSAA	589.3 > 419.0	2.47e4	3.22e4	0.2585	1.119	4.79	4.90	30.8	106	68.7
18	18	13C2-PFOA	414.9 > 369.7	3.41e4	3.41e4	0.2585	1.000	3.92	4.10	10.0	38.7	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.57e4	1.57e4	0.2585	1.000	4.29	4.46	28.7	111	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.22e4	3.22e4	0.2585	1.000	4.62	4.79	40.0	155	100.0

AD 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

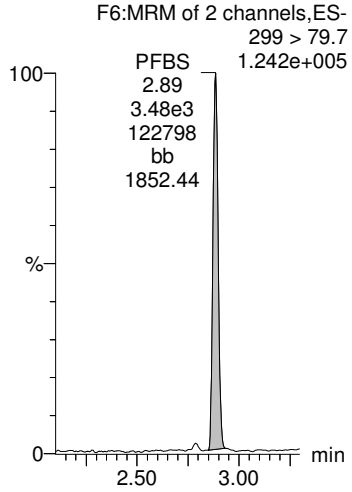
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-37.qld

Last Altered: Thursday, May 03, 2018 12:34:30 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:05:08 Pacific Daylight Time

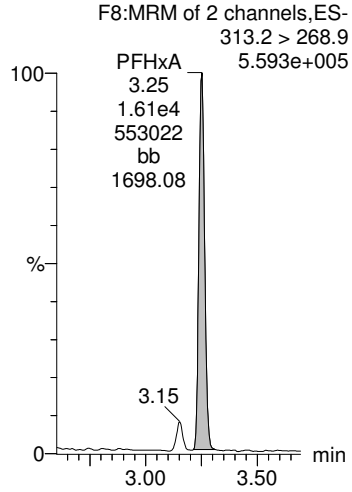
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_37, Date: 03-May-2018, Time: 00:55:41, ID: 1800728-01 WI-A06-RW18-0418 0.25854, Description: WI-A06-RW18-0418

PFBS



PFHxA



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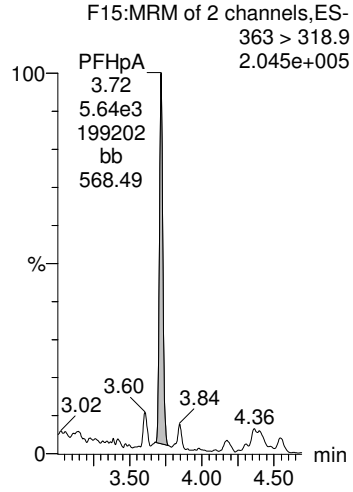
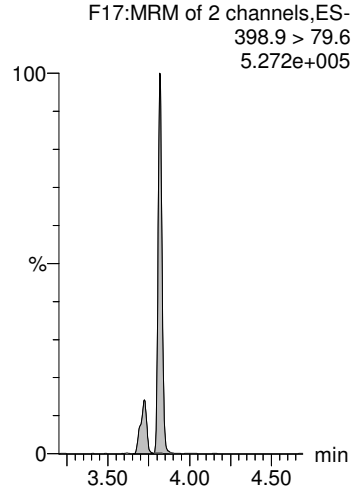
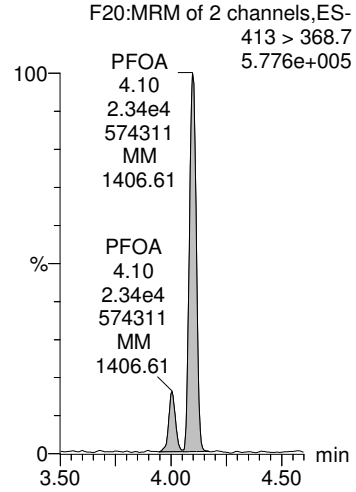


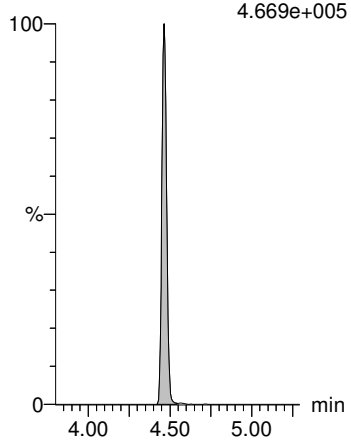
PFHxS



PFOA



13C4-PFOS



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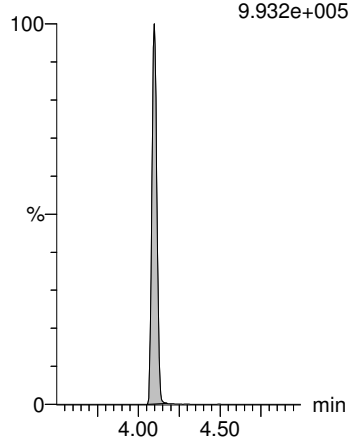

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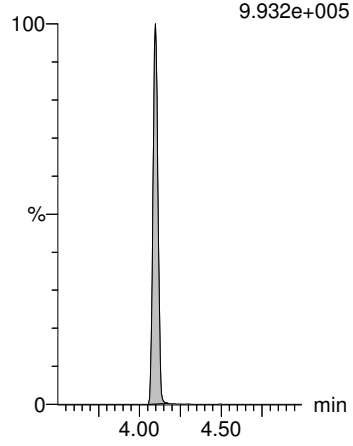

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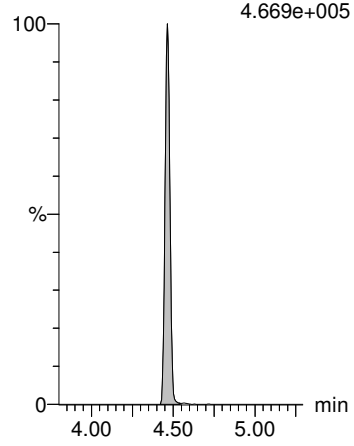

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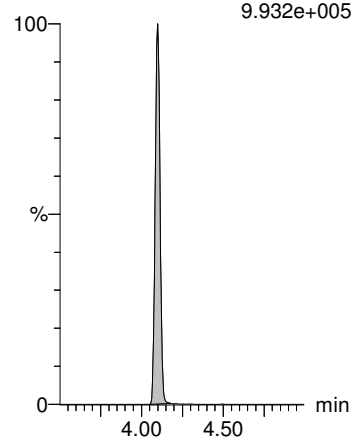

AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-37.qld

Last Altered: Thursday, May 03, 2018 12:34:30 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:05:08 Pacific Daylight Time

Name: 180502M4_37, Date: 03-May-2018, Time: 00:55:41, ID: 1800728-01 WI-A06-RW18-0418 0.25854, Description: WI-A06-RW18-0418

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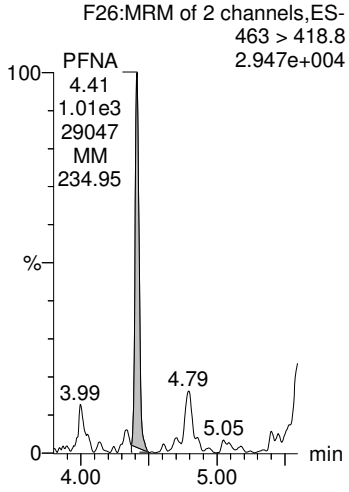
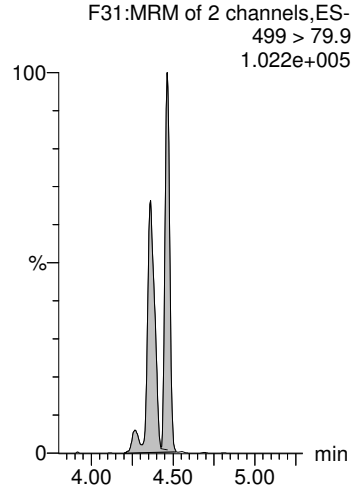


PFOS



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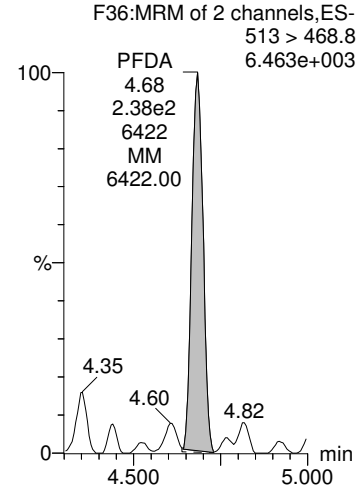
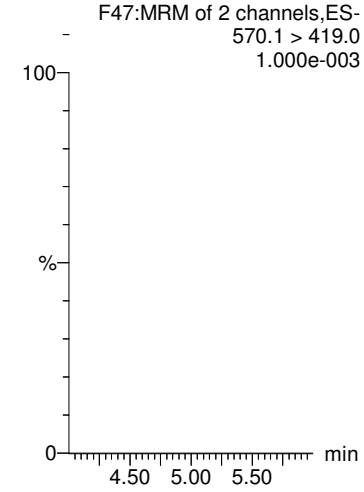


N-MeFOSAA



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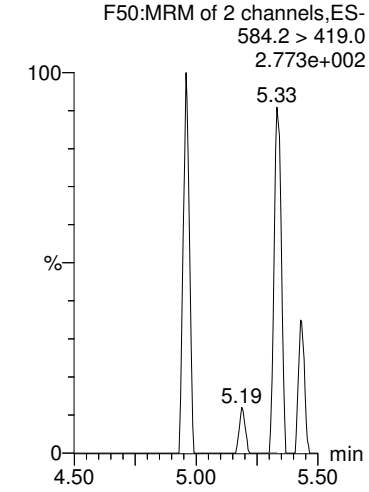

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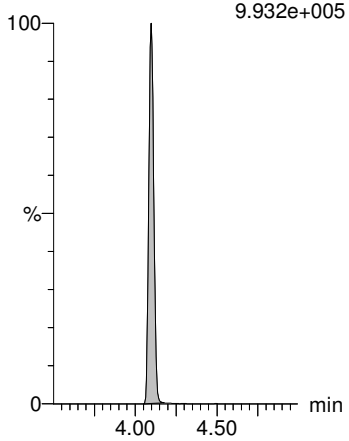

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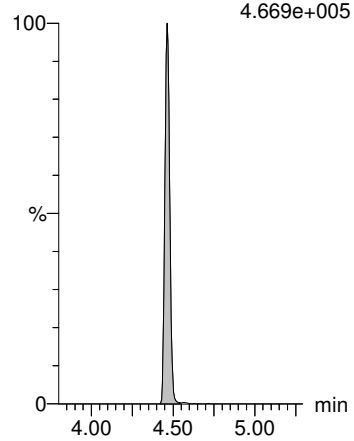

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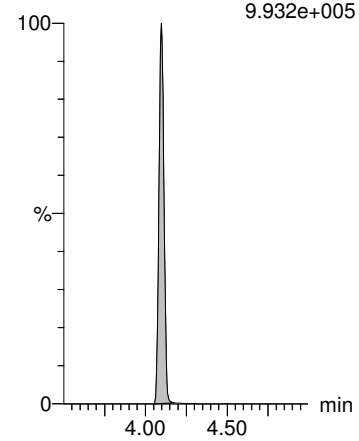
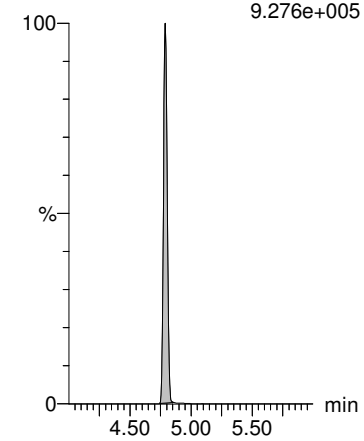
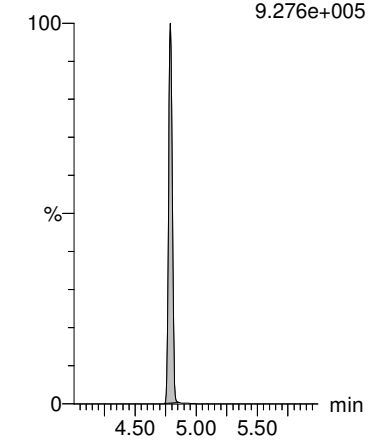


d3-N-MeFOSAA



d3-N-MeFOSAA



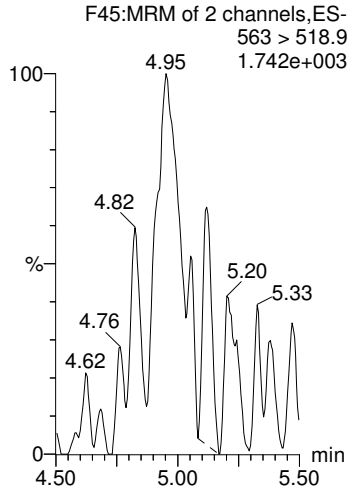
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-37.qld

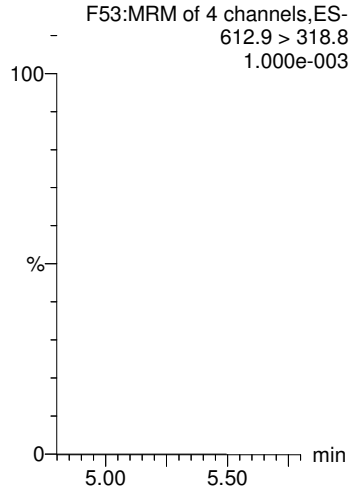
Last Altered: Thursday, May 03, 2018 12:34:30 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:05:08 Pacific Daylight Time

Name: 180502M4_37, Date: 03-May-2018, Time: 00:55:41, ID: 1800728-01 WI-A06-RW18-0418 0.25854, Description: WI-A06-RW18-0418

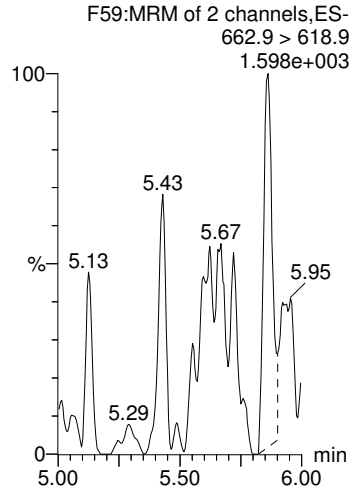
PFUnA



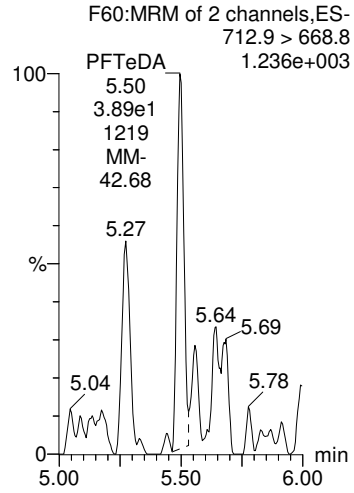
PFDoA



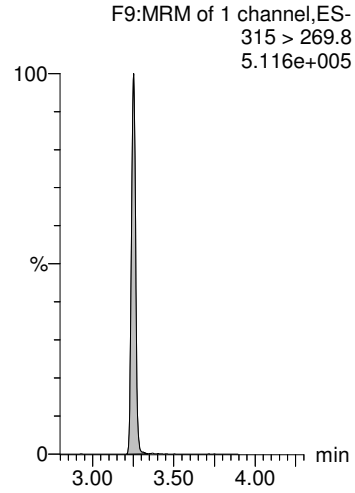
PFTrDA



PFTeDA



13C2-PFHxA



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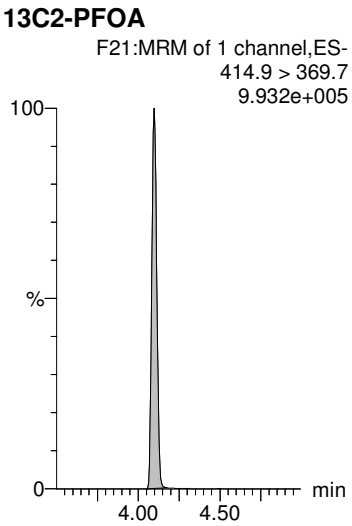

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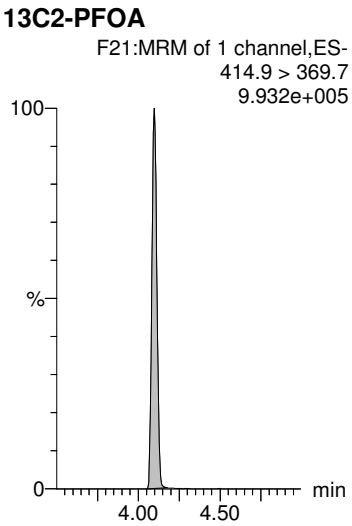

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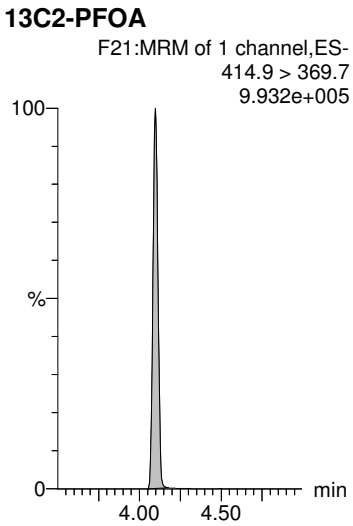

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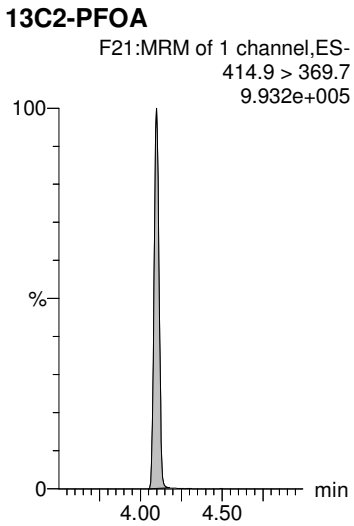

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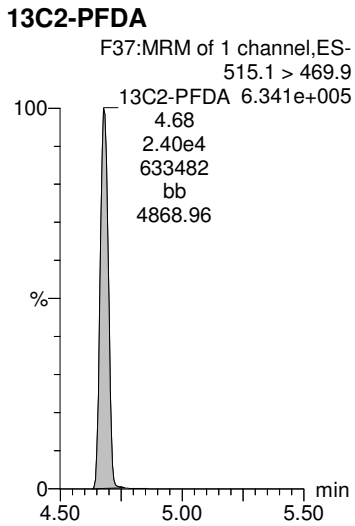


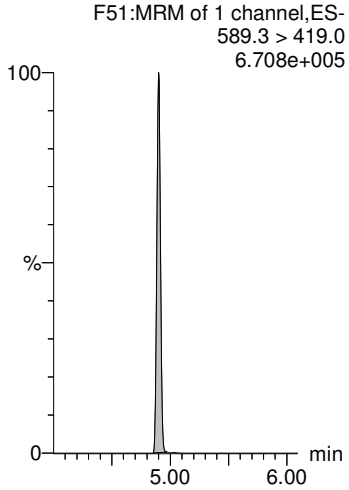
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-37.qld

Last Altered: Thursday, May 03, 2018 12:34:30 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:05:08 Pacific Daylight Time

Name: 180502M4_37, Date: 03-May-2018, Time: 00:55:41, ID: 1800728-01 WI-A06-RW18-0418 0.25854, Description: WI-A06-RW18-0418

d5-N-EtFOSAA



AD 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-38.qld

Last Altered: Thursday, May 03, 2018 12:47:12 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:04:32 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_38, Date: 03-May-2018, Time: 01:07:08, ID: 1800728-02 WI-A06-RW18P-0418 0.25704, Description: WI-A06-RW18P-0418

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.23e3	1.62e4	0.2570		2.88	2.88	5.72	20.5	
2	2	PFHxA	313.2 > 268.9	1.52e4	2.87e4	0.2570		3.28	3.25	5.29	29.3	
3	3	PFHpA	363 > 318.9	5.77e3	2.87e4	0.2570		3.93	3.72	2.01	11.3	
4	4	PFHxS	398.9 > 79.6	1.71e4	1.62e4	0.2570		4.02	3.82	30.3	125	
5	5	PFOA	413 > 368.7	2.06e4	2.87e4	0.2570		4.31	4.10	7.17	30.6	
6	6	PFNA	463 > 418.8	1.13e3	2.87e4	0.2570		4.62	4.41	0.394	1.59	
7	7	PFOS	499 >79.9	6.94e3	1.62e4	0.2570		4.66	4.46	12.3	43.0	
8	8	PFDA	513 > 468.8	3.10e2	2.87e4	0.2570		4.89	4.68	0.108	0.351	
9	9	N-MeFOSAA	570.1 > 419.0		3.25e4	0.2570		4.99				
10	10	N-EtFOSAA	584.2 >419.0		3.25e4	0.2570		5.11				
11	11	PFUnA	563 > 518.9		2.87e4	0.2570		5.12				
12	12	PFDoA	612.9 > 318.8		2.87e4	0.2570		5.13				
13	13	PFTrDA	662.9 > 618.9		2.87e4	0.2570		5.51				
14	14	PFTeDA	712.9 > 668.8		2.87e4	0.2570		5.72				
15	15	13C2-PFHxA	315 > 269.8	1.62e4	2.87e4	0.2570	0.506	3.29	3.25	5.63	43.4	111.4
16	16	13C2-PFDA	515.1 > 469.9	2.29e4	2.87e4	0.2570	0.810	4.68	4.68	7.99	38.4	98.6
17	17	d5-N-EtFOSAA	589.3 > 419.0	2.77e4	3.25e4	0.2570	1.119	4.79	4.90	34.1	119	76.2
18	18	13C2-PFOA	414.9 > 369.7	2.87e4	2.87e4	0.2570	1.000	3.92	4.10	10.0	38.9	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.62e4	1.62e4	0.2570	1.000	4.29	4.46	28.7	112	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.25e4	3.25e4	0.2570	1.000	4.62	4.79	40.0	156	100.0

AD 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

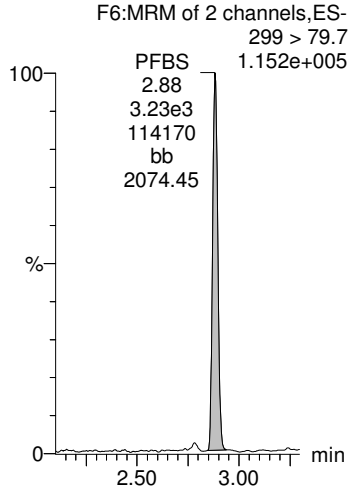
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-38.qld

Last Altered: Thursday, May 03, 2018 12:47:12 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:04:32 Pacific Daylight Time

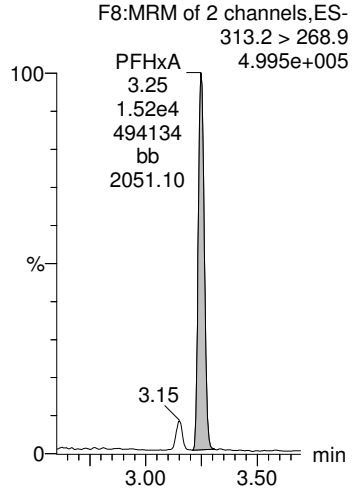
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_38, Date: 03-May-2018, Time: 01:07:08, ID: 1800728-02 WI-A06-RW18P-0418 0.25704, Description: WI-A06-RW18P-0418

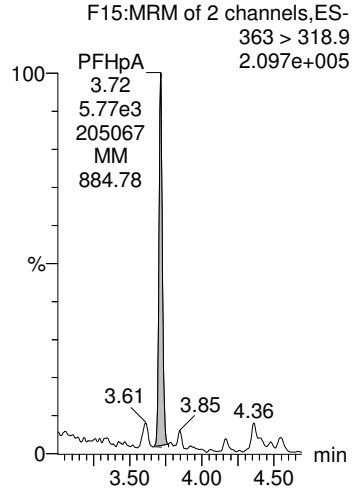
PFBS



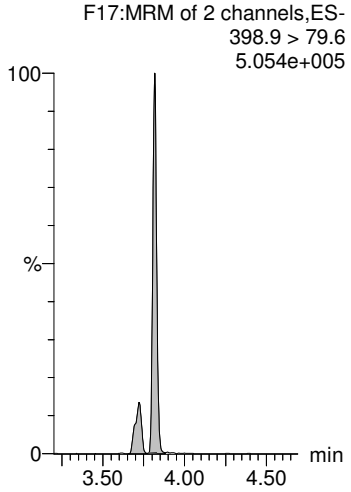
PFHxA



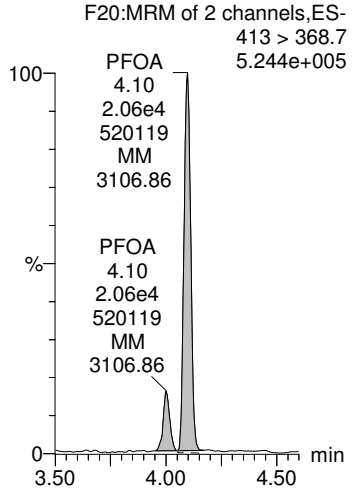
PFHpA



PFHxS



PFOA



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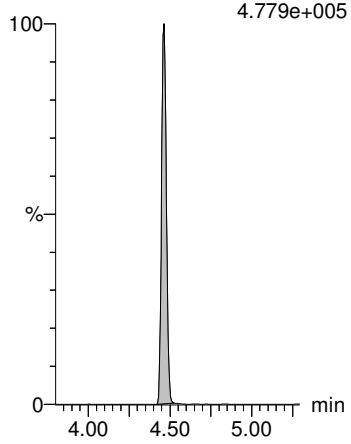
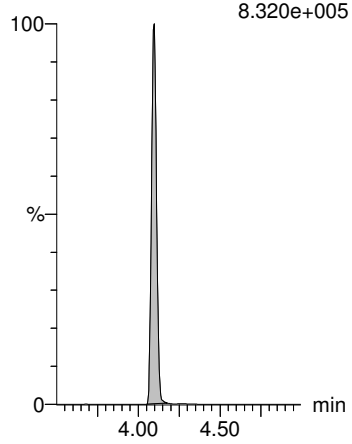


13C2-PFOA



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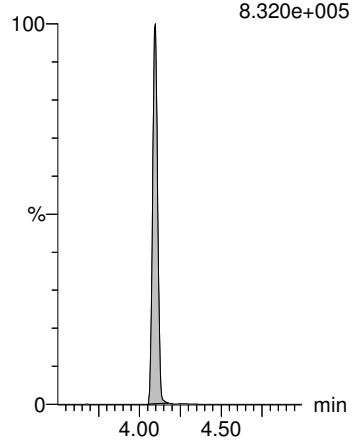

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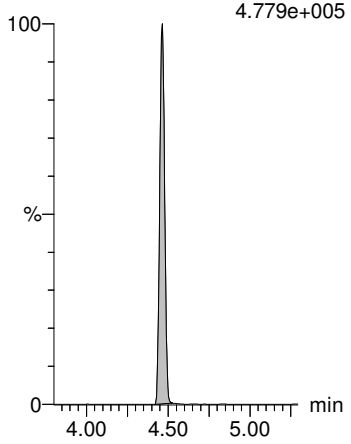

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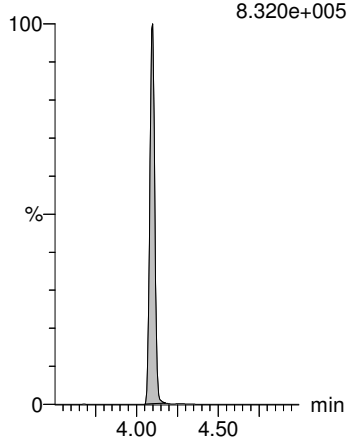


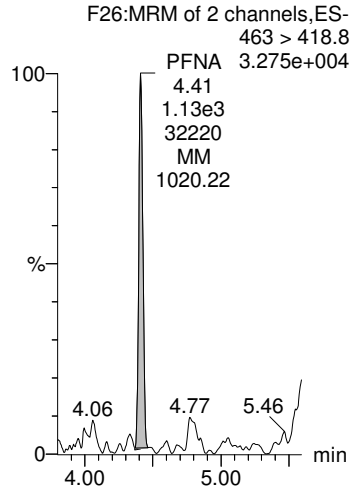
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-38.qld

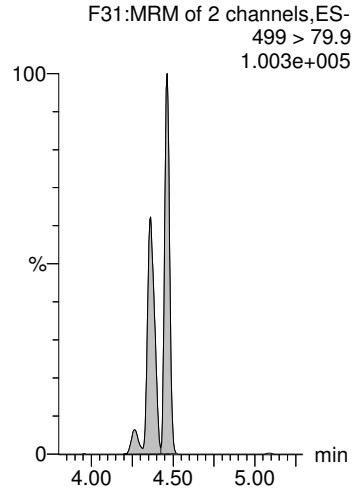
Last Altered: Thursday, May 03, 2018 12:47:12 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:04:32 Pacific Daylight Time

Name: 180502M4_38, Date: 03-May-2018, Time: 01:07:08, ID: 1800728-02 WI-A06-RW18P-0418 0.25704, Description: WI-A06-RW18P-0418

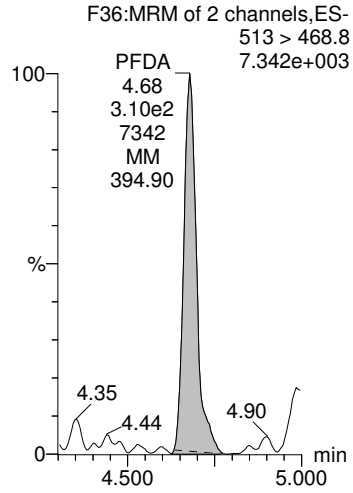
PFNA



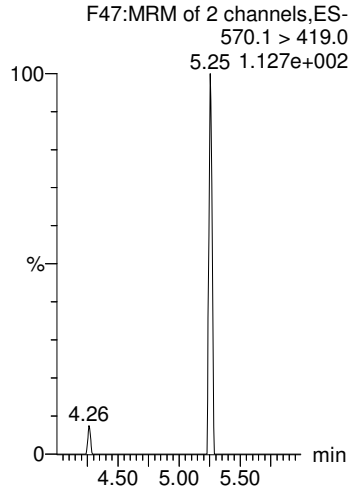
PFOS



PFDA



N-MeFOSAA



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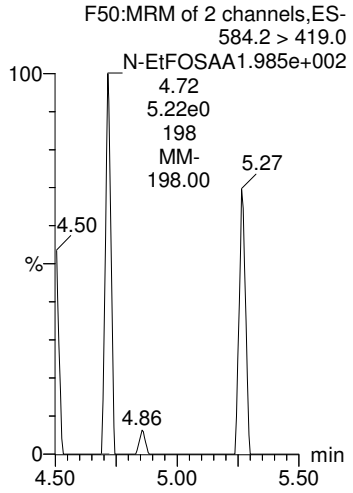

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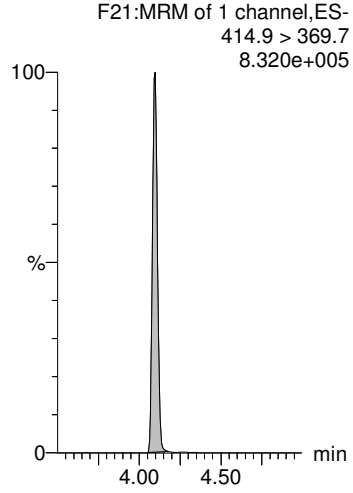
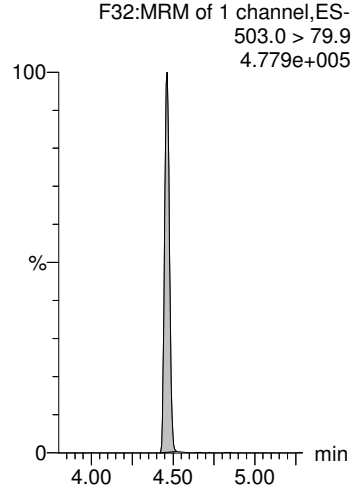


13C4-PFOS



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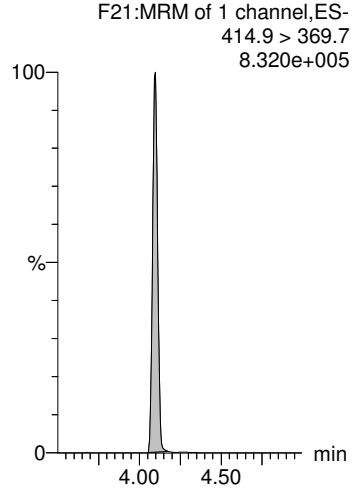
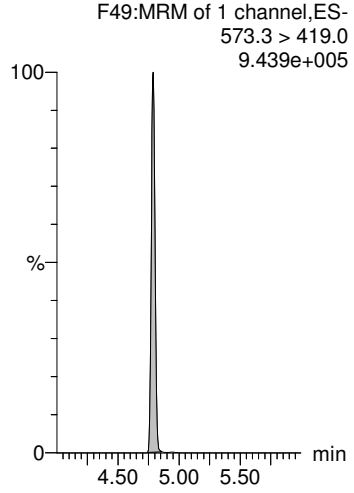


d3-N-MeFOSAA



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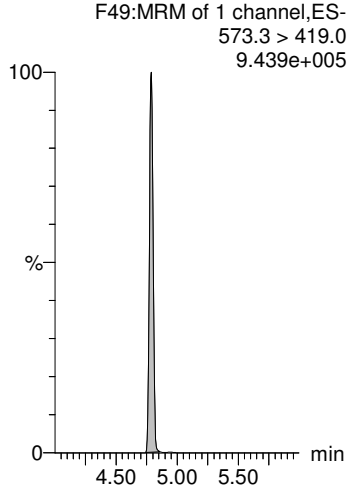


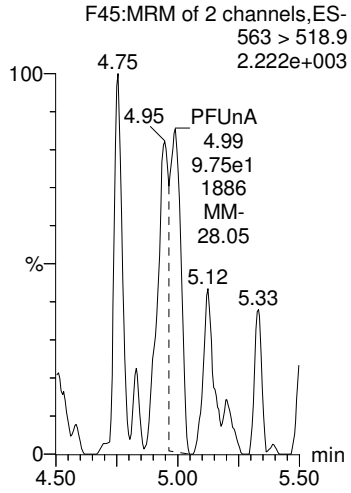
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-38.qld

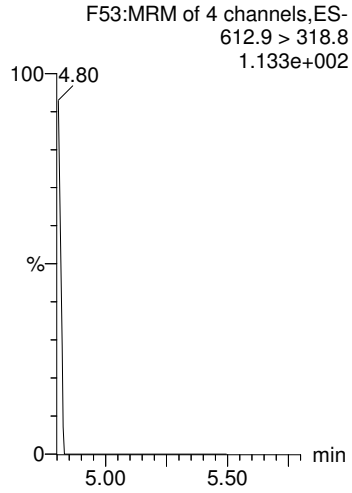
Last Altered: Thursday, May 03, 2018 12:47:12 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:04:32 Pacific Daylight Time

Name: 180502M4_38, Date: 03-May-2018, Time: 01:07:08, ID: 1800728-02 WI-A06-RW18P-0418 0.25704, Description: WI-A06-RW18P-0418

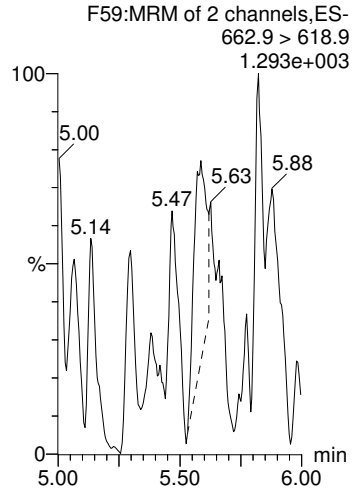
PFUnA



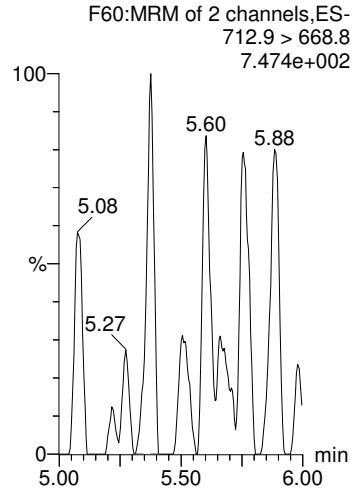
PFDoA



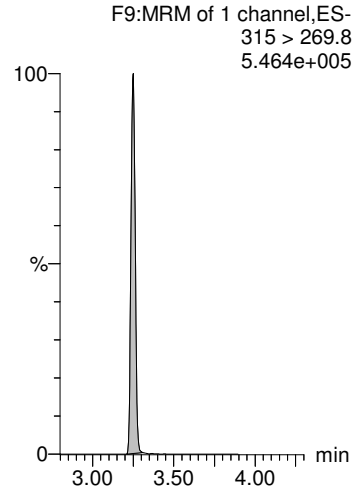
PFTrDA



PFTeDA



13C2-PFHxA



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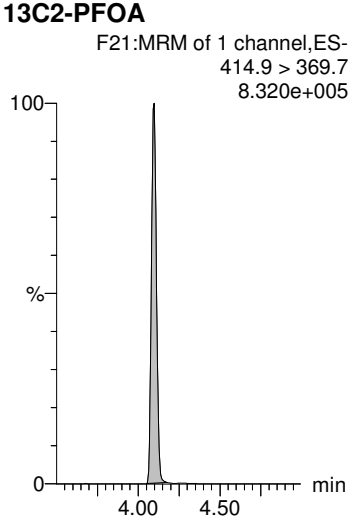

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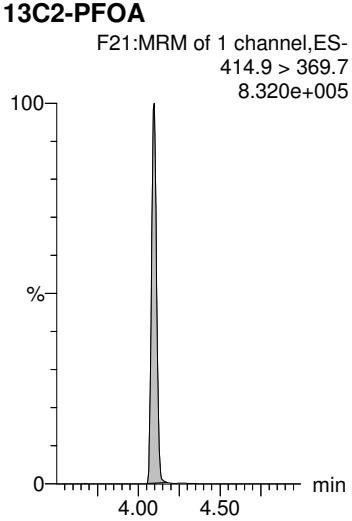

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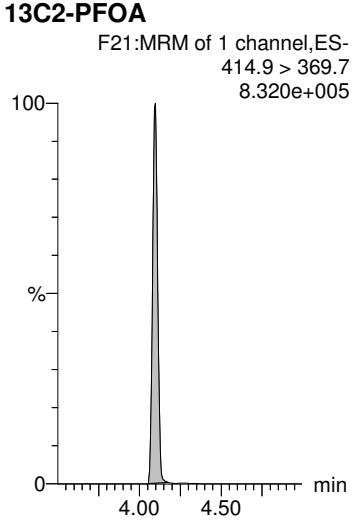

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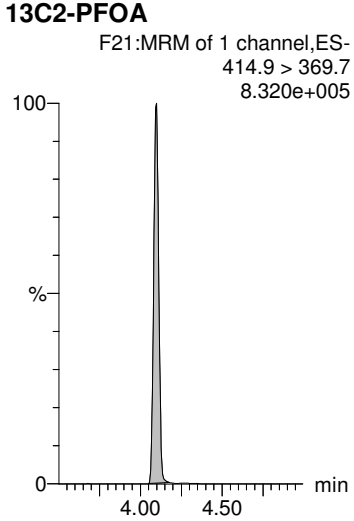

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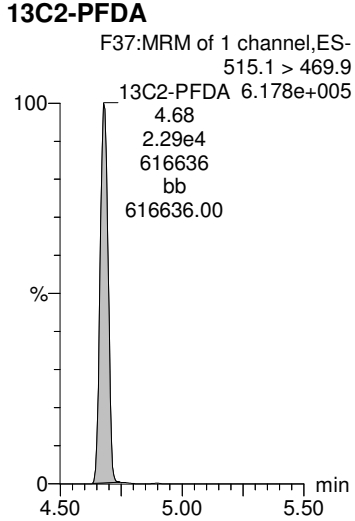


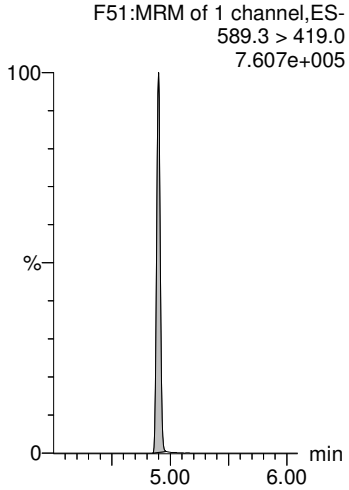
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-38.qld

Last Altered: Thursday, May 03, 2018 12:47:12 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:04:32 Pacific Daylight Time

Name: 180502M4_38, Date: 03-May-2018, Time: 01:07:08, ID: 1800728-02 WI-A06-RW18P-0418 0.25704, Description: WI-A06-RW18P-0418

d5-N-EtFOSAA



AD 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-39.qld

Last Altered: Thursday, May 03, 2018 14:00:31 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:00:42 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

02

Name: 180502M4_39, Date: 03-May-2018, Time: 01:18:38, ID: 1800728-03 WI-A06-FB18-0418 0.26707, Description: WI-A06-FB18-0418

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.44e4	0.2671		2.88				
2	2	PFHxA	313.2 > 268.9	2.36e2	3.31e4	0.2671		3.28	3.25	0.0712	0.380	
3	3	PFHpA	363 > 318.9		3.31e4	0.2671		3.93				
4	4	PFHxS	398.9 > 79.6		1.44e4	0.2671		4.02				
5	5	PFOA	413 > 368.7	3.35e2	3.31e4	0.2671		4.31	4.09	0.101	0.416	
6	6	PFNA	463 > 418.8		3.31e4	0.2671		4.62				
7	7	PFOS	499 >79.9		1.44e4	0.2671		4.66				
8	8	PFDA	513 > 468.8	6.74e1	3.31e4	0.2671		4.89	4.69	0.0204	0.0636	
9	9	N-MeFOSAA	570.1 > 419.0		3.32e4	0.2671		4.99				
10	10	N-EtFOSAA	584.2 >419.0		3.32e4	0.2671		5.11				
11	11	PFUnA	563 > 518.9		3.31e4	0.2671		5.12				
12	12	PFDoA	612.9 > 318.8		3.31e4	0.2671		5.13				
13	13	PFTrDA	662.9 > 618.9		3.31e4	0.2671		5.51				
14	14	PFTeDA	712.9 > 668.8		3.31e4	0.2671		5.72				
15	15	13C2-PFHxA	315 > 269.8	1.62e4	3.31e4	0.2671	0.506	3.29	3.25	4.91	36.3	97.0
16	16	13C2-PFDA	515.1 > 469.9	2.71e4	3.31e4	0.2671	0.810	4.68	4.68	8.18	37.8	101.0
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.08e4	3.32e4	0.2671	1.119	4.79	4.90	37.1	124	82.9
18	18	13C2-PFOA	414.9 > 369.7	3.31e4	3.31e4	0.2671	1.000	3.92	4.10	10.0	37.4	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.44e4	1.44e4	0.2671	1.000	4.29	4.46	28.7	107	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.32e4	3.32e4	0.2671	1.000	4.62	4.79	40.0	150	100.0

AD 5/3/2018

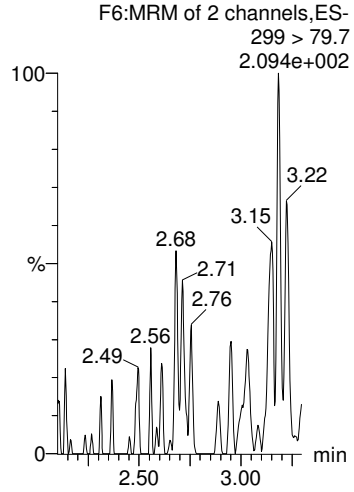
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-39.qld

Last Altered: Thursday, May 03, 2018 14:00:31 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:00:42 Pacific Daylight Time

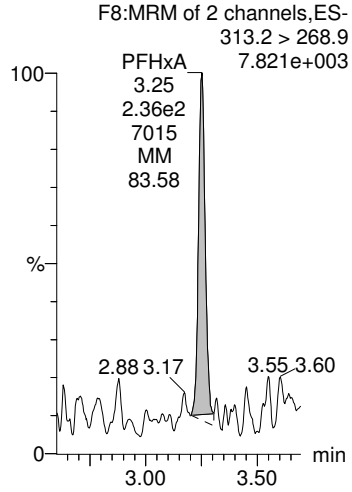
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_39, Date: 03-May-2018, Time: 01:18:38, ID: 1800728-03 WI-A06-FB18-0418 0.26707, Description: WI-A06-FB18-0418

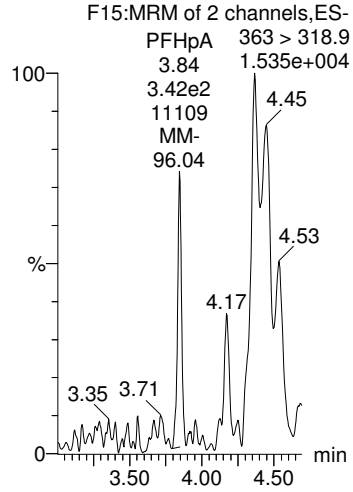
PFBS



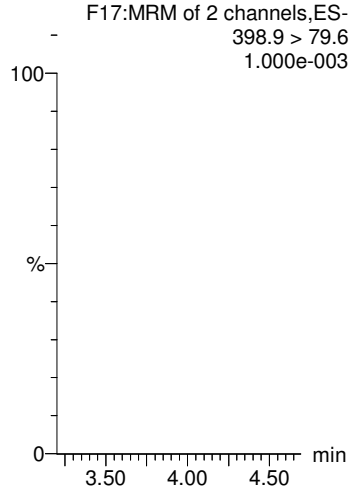
PFHxA



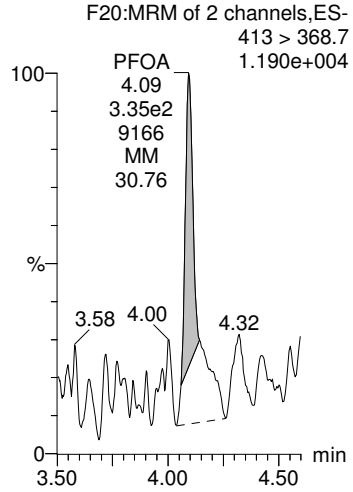
PFHpA



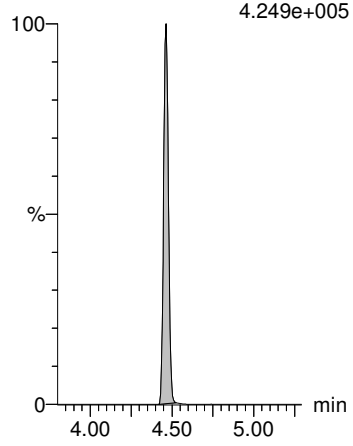
PFHxS



PFOA



13C4-PFOS



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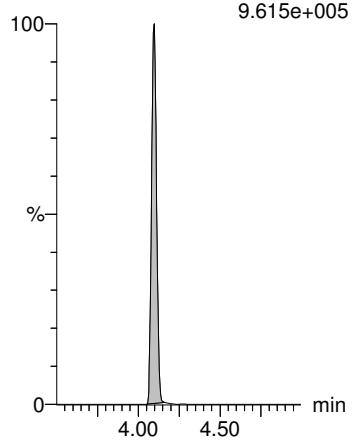
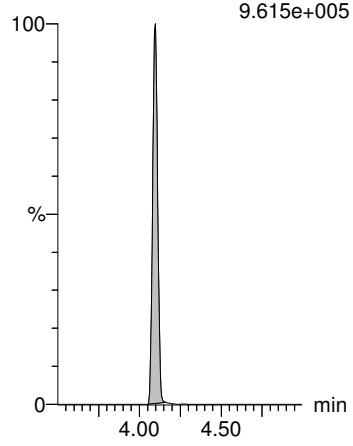


13C2-PFOA



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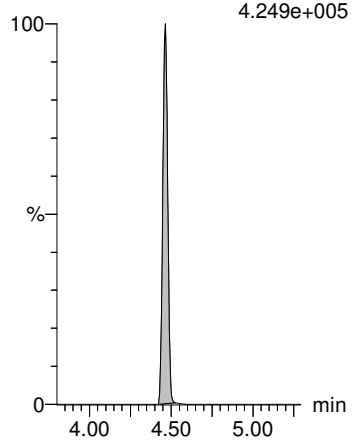

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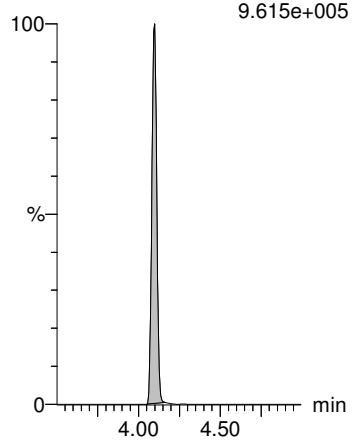

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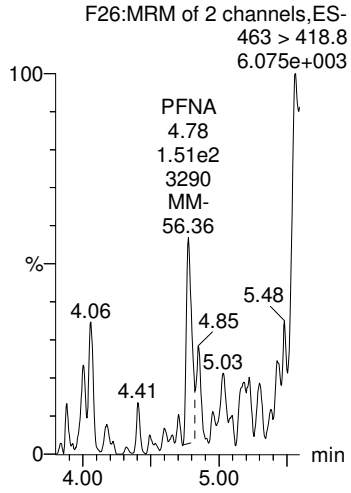
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-39.qld

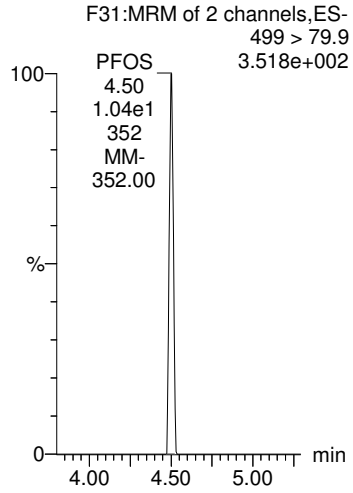
Last Altered: Thursday, May 03, 2018 14:00:31 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:00:42 Pacific Daylight Time

Name: 180502M4_39, Date: 03-May-2018, Time: 01:18:38, ID: 1800728-03 WI-A06-FB18-0418 0.26707, Description: WI-A06-FB18-0418

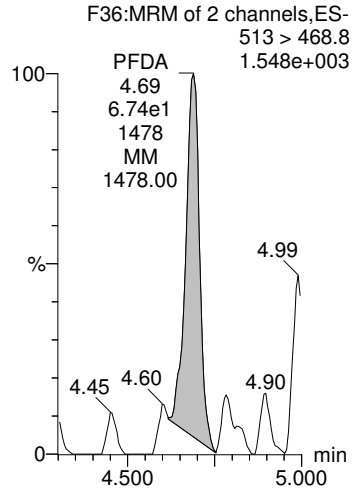
PFNA



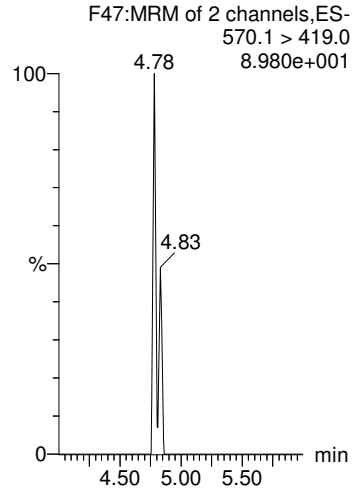
PFOS



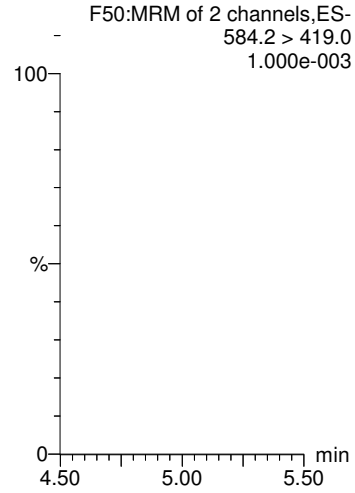
PFDA



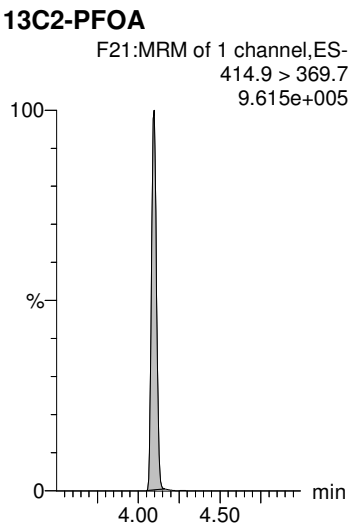
N-MeFOSAA



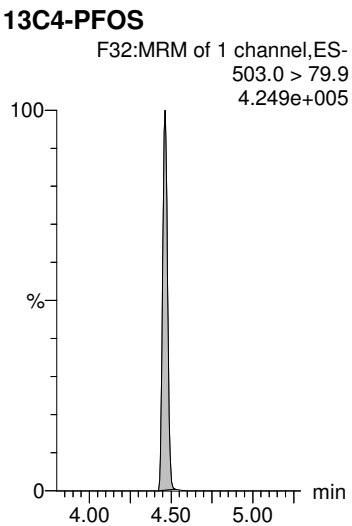
N-EtFOSAA



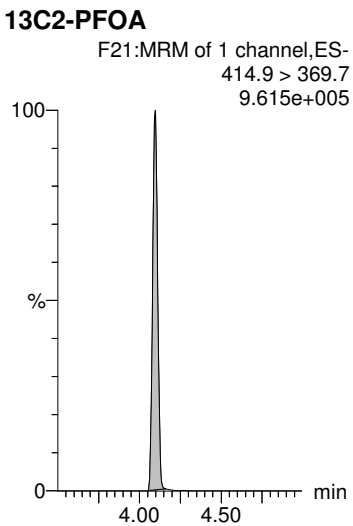
13C2-PFOA



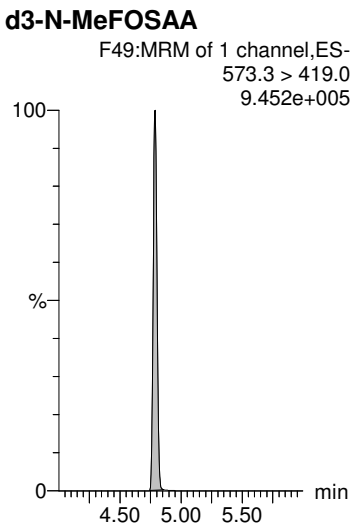
13C4-PFOS



13C2-PFOA



d3-N-MeFOSAA



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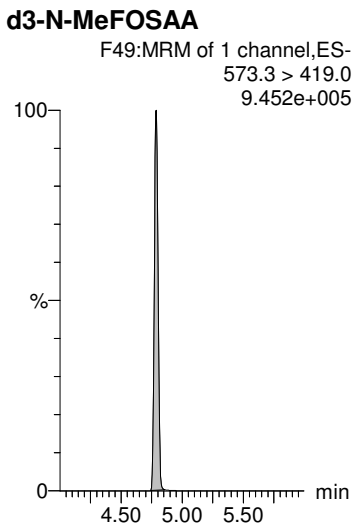


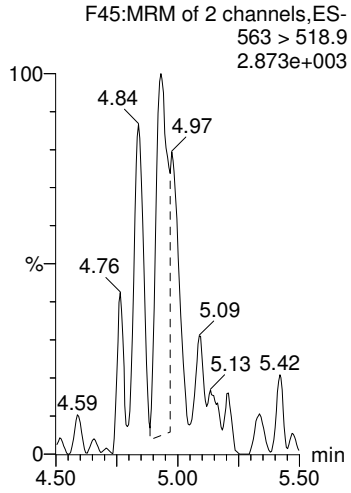
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-39.qld

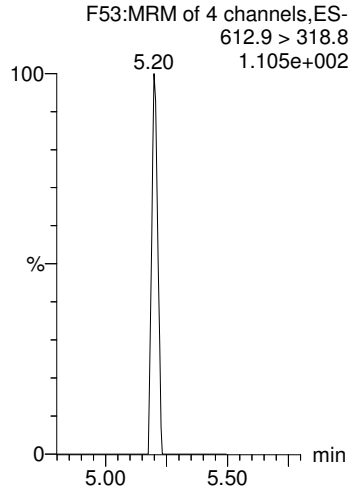
Last Altered: Thursday, May 03, 2018 14:00:31 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:00:42 Pacific Daylight Time

Name: 180502M4_39, Date: 03-May-2018, Time: 01:18:38, ID: 1800728-03 WI-A06-FB18-0418 0.26707, Description: WI-A06-FB18-0418

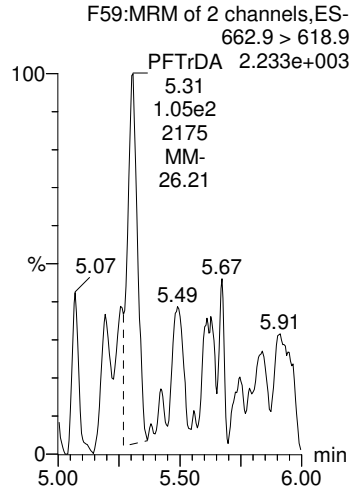
PFUnA



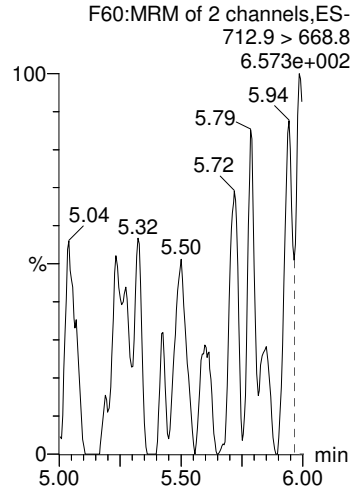
PFDoA



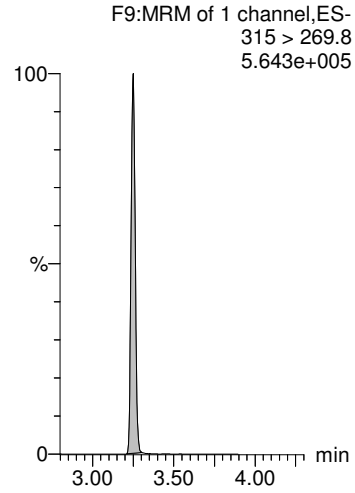
PFTrDA



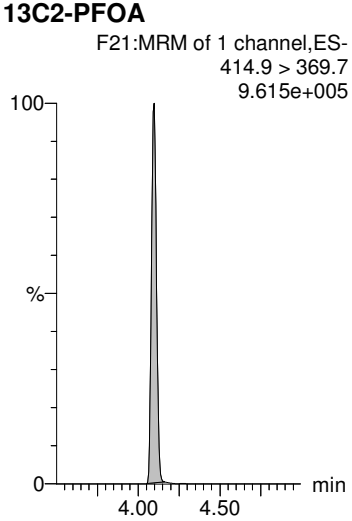
PFTeDA



13C2-PFHxA



13C2-PFOA



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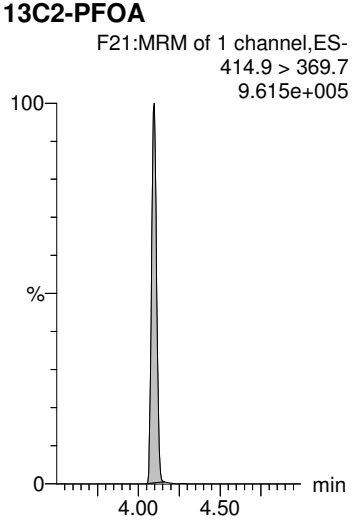

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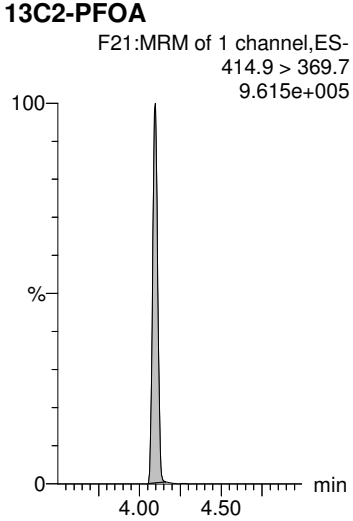

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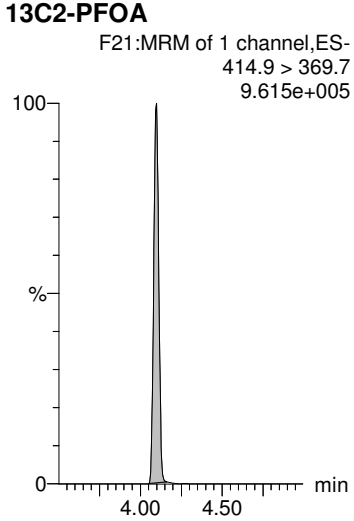
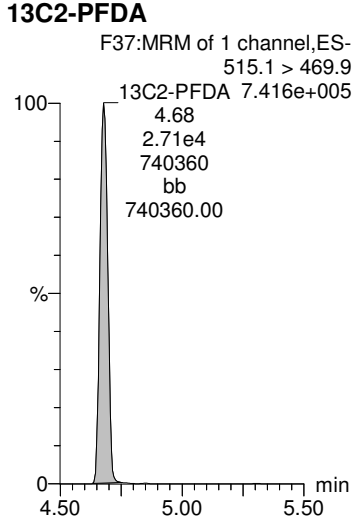


13C2-PFDA



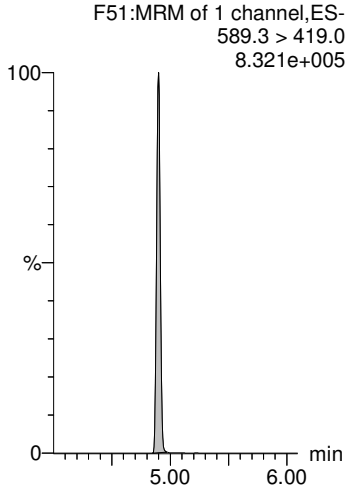
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-39.qld

Last Altered: Thursday, May 03, 2018 14:00:31 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:00:42 Pacific Daylight Time

Name: 180502M4_39, Date: 03-May-2018, Time: 01:18:38, ID: 1800728-03 WI-A06-FB18-0418 0.26707, Description: WI-A06-FB18-0418

d5-N-EtFOSAA



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Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-40.qld

Last Altered: Thursday, May 03, 2018 13:59:39 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:59:52 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06
02

Name: 180502M4_40, Date: 03-May-2018, Time: 01:30:07, ID: 1800728-04 WI-A06-RW20-0418 0.25816, Description: WI-A06-RW20-0418

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.43e3	1.24e4	0.2582		2.88	2.88	5.61	20.0	
2	2	PFHxA	313.2 > 268.9	8.85e3	2.56e4	0.2582		3.27	3.24	3.46	19.1	
3	3	PFHpA	363 > 318.9	1.53e3	2.56e4	0.2582		3.92	3.71	0.598	3.33	
4	4	PFHxS	398.9 > 79.6	1.25e4	1.24e4	0.2582		4.02	3.81	29.0	118	
5	5	PFOA	413 > 368.7	2.64e4	2.56e4	0.2582		4.30	4.10	10.3	43.7	
6	6	PFNA	463 > 418.8		2.56e4	0.2582		4.61				
7	7	PFOS	499 >79.9	3.78e3	1.24e4	0.2582		4.66	4.36	8.75	30.5	
8	8	PFDA	513 > 468.8		2.56e4	0.2582		4.88				
9	9	N-MeFOSAA	570.1 > 419.0		2.85e4	0.2582		4.98				
10	10	N-EtFOSAA	584.2 >419.0		2.85e4	0.2582		5.10				
11	11	PFUnA	563 > 518.9		2.56e4	0.2582		5.11				
12	12	PFDoA	612.9 > 318.8		2.56e4	0.2582		5.12				
13	13	PFTrDA	662.9 > 618.9		2.56e4	0.2582		5.50				
14	14	PFTeDA	712.9 > 668.8		2.56e4	0.2582		5.71				
15	15	13C2-PFHxA	315 > 269.8	1.19e4	2.56e4	0.2582	0.506	3.28	3.25	4.65	35.6	91.9
16	16	13C2-PFDA	515.1 > 469.9	2.09e4	2.56e4	0.2582	0.810	4.67	4.68	8.16	39.0	100.7
17	17	d5-N-EtFOSAA	589.3 > 419.0	2.63e4	2.85e4	0.2582	1.119	4.78	4.90	36.8	128	82.3
18	18	13C2-PFOA	414.9 > 369.7	2.56e4	2.56e4	0.2582	1.000	3.92	4.09	10.0	38.7	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.24e4	1.24e4	0.2582	1.000	4.29	4.46	28.7	111	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	2.85e4	2.85e4	0.2582	1.000	4.62	4.78	40.0	155	100.0

AD 5/3/2018

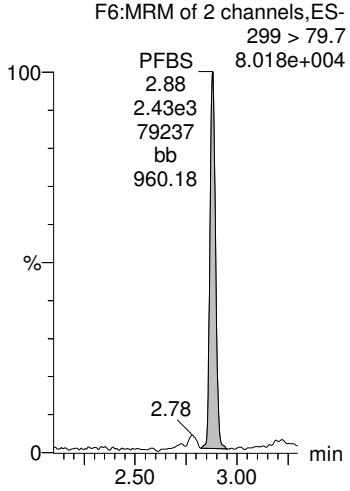
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-40.qld

Last Altered: Thursday, May 03, 2018 13:59:39 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:59:52 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_40, Date: 03-May-2018, Time: 01:30:07, ID: 1800728-04 WI-A06-RW20-0418 0.25816, Description: WI-A06-RW20-0418

PFBS



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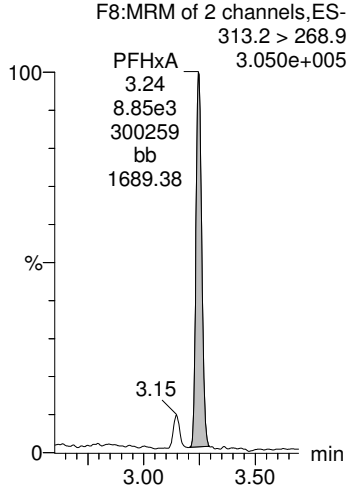

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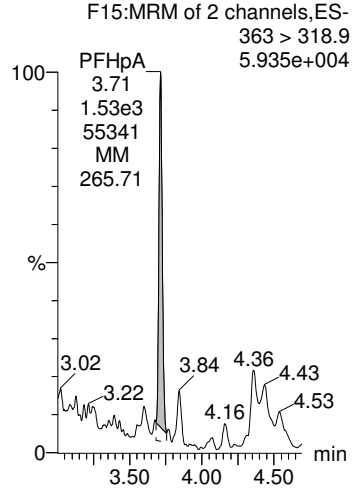

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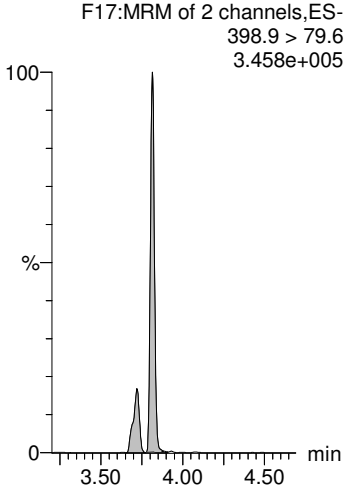

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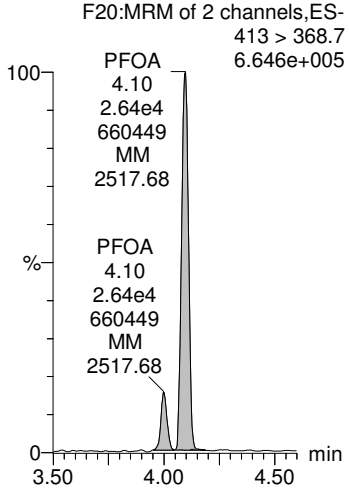

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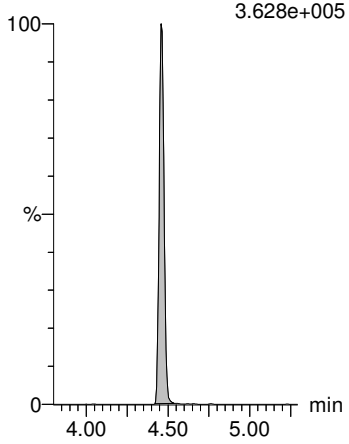

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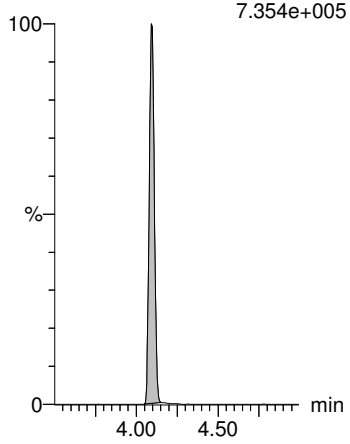

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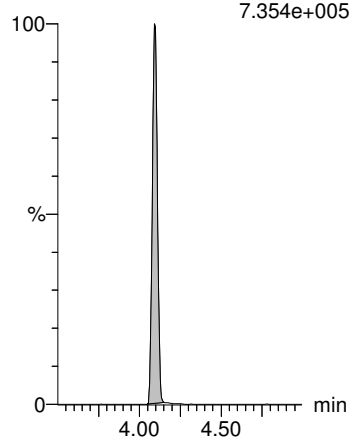

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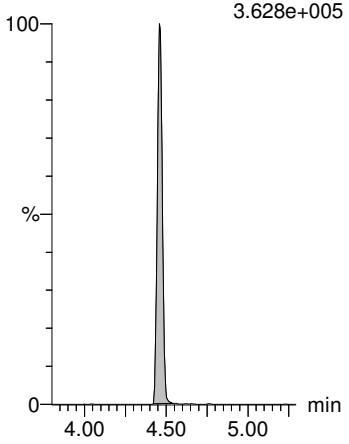

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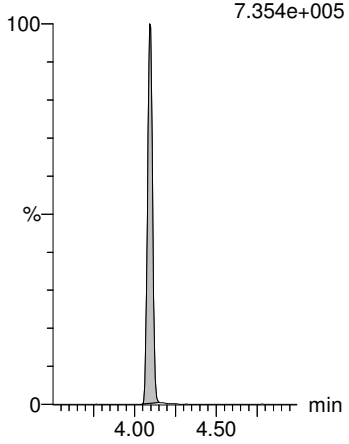

AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-40.qld

Last Altered: Thursday, May 03, 2018 13:59:39 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:59:52 Pacific Daylight Time

Name: 180502M4_40, Date: 03-May-2018, Time: 01:30:07, ID: 1800728-04 WI-A06-RW20-0418 0.25816, Description: WI-A06-RW20-0418

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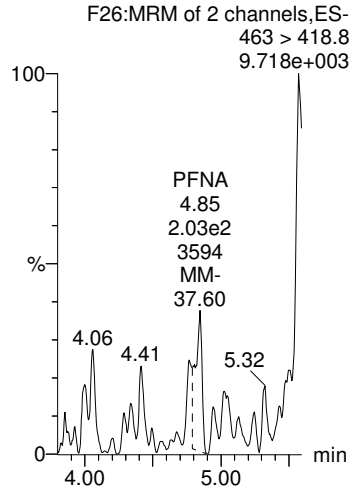

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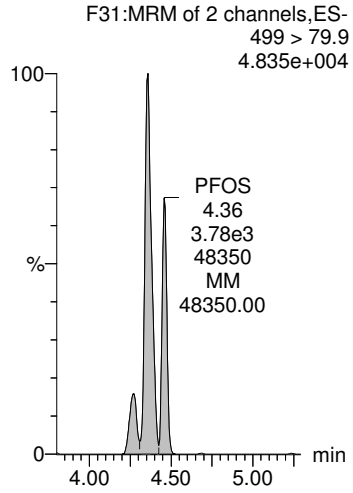

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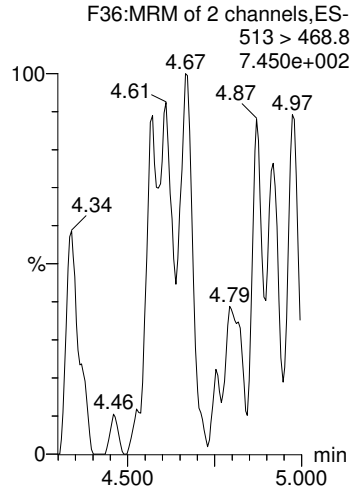

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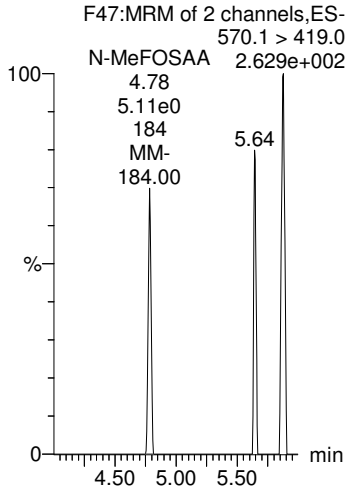

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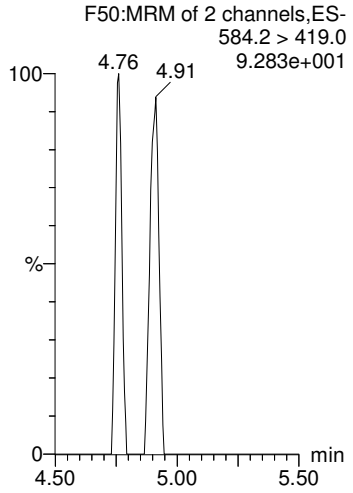

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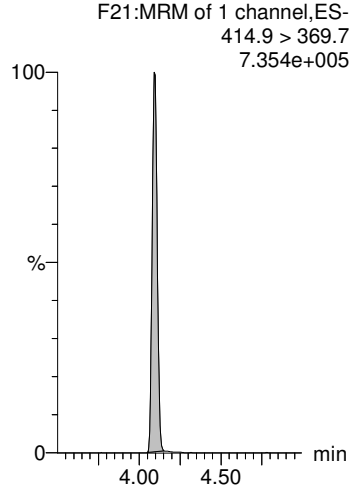

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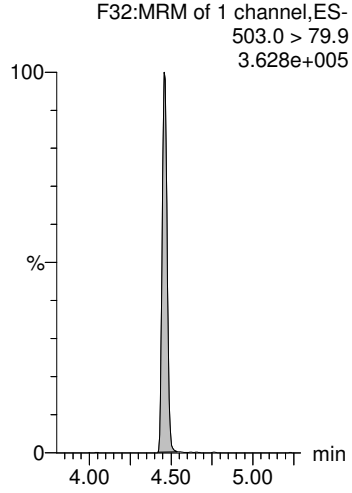

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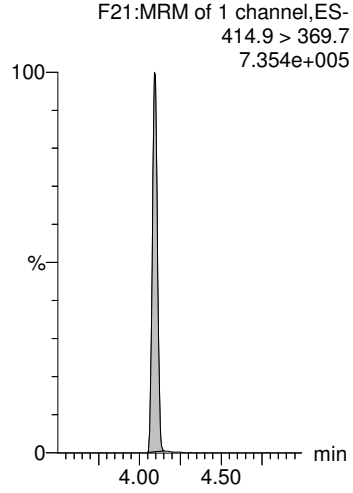

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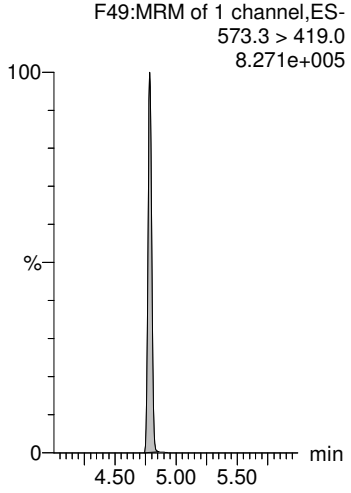

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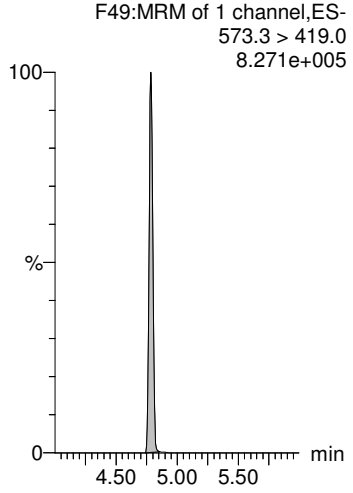


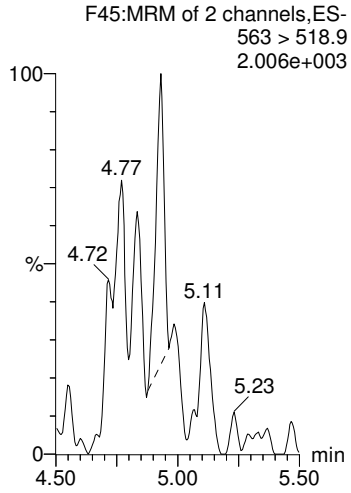
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-40.qld

Last Altered: Thursday, May 03, 2018 13:59:39 Pacific Daylight Time
Printed: Thursday, May 03, 2018 13:59:52 Pacific Daylight Time

Name: 180502M4_40, Date: 03-May-2018, Time: 01:30:07, ID: 1800728-04 WI-A06-RW20-0418 0.25816, Description: WI-A06-RW20-0418

PFUnA



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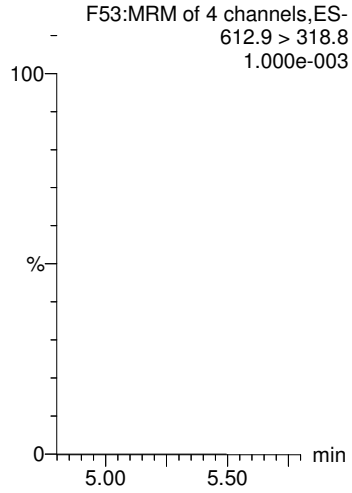

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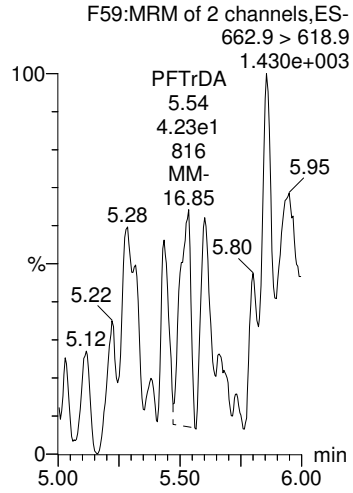

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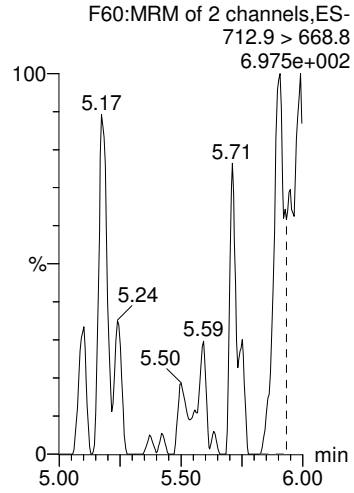

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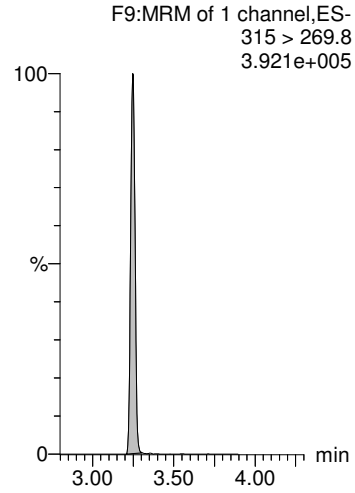

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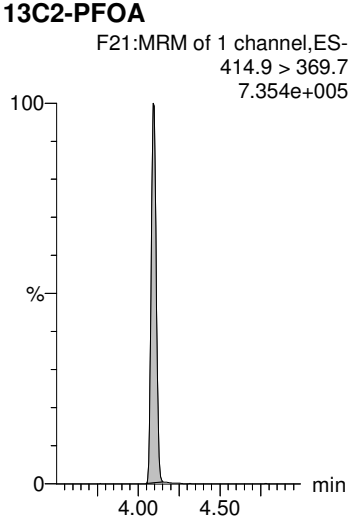

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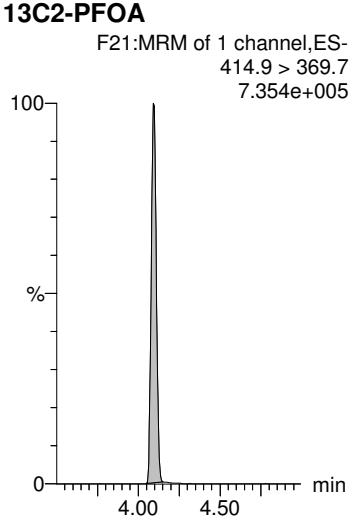

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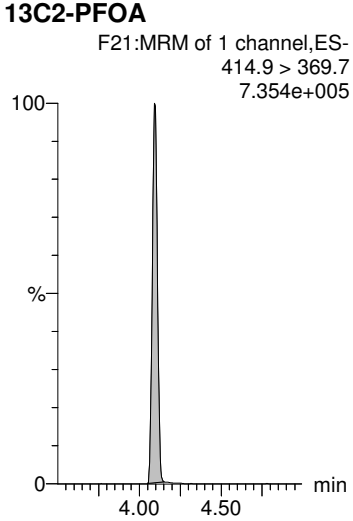

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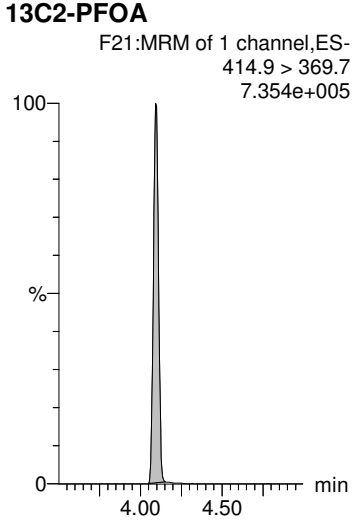

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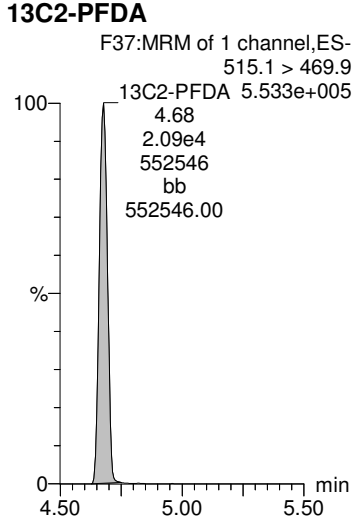

AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-40.qld

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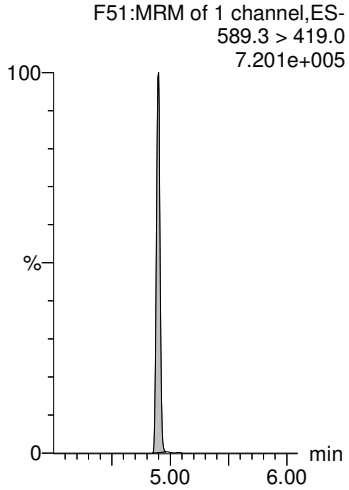
Printed: Thursday, May 03, 2018 13:59:52 Pacific Daylight Time

Name: 180502M4_40, Date: 03-May-2018, Time: 01:30:07, ID: 1800728-04 WI-A06-RW20-0418 0.25816, Description: WI-A06-RW20-0418

d5-N-EtFOSAA



AD 5/3/2018

Vista Analytical Laboratory

rev ANP 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-41.qld

Last Altered: Thursday, May 03, 2018 14:06:48 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:07:01 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

02

Name: 180502M4_41, Date: 03-May-2018, Time: 01:41:36, ID: 1800728-05 WI-A06-FB20-0418 0.26849, Description: WI-A06-FB20-0418

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.48e4	0.2685		2.88				
2	2	PFHxA	313.2 > 268.9	2.22e2	3.13e4	0.2685		3.27	3.25	0.0709	0.377	
3	3	PFHpA	363 > 318.9		3.13e4	0.2685		3.92				
4	4	PFHxS	398.9 > 79.6		1.48e4	0.2685		4.02				
5	5	PFOA	413 > 368.7	4.05e2	3.13e4	0.2685		4.30	4.09	0.129	0.528	
6	6	PFNA	463 > 418.8		3.13e4	0.2685		4.61				
7	7	PFOS	499 >79.9		1.48e4	0.2685		4.66				
8	8	PFDA	513 > 468.8		3.13e4	0.2685		4.88				
9	9	N-MeFOSAA	570.1 > 419.0		3.10e4	0.2685		4.98				
10	10	N-EtFOSAA	584.2 >419.0		3.10e4	0.2685		5.10				
11	11	PFUnA	563 > 518.9		3.13e4	0.2685		5.11				
12	12	PFDoA	612.9 > 318.8		3.13e4	0.2685		5.12				
13	13	PFTrDA	662.9 > 618.9		3.13e4	0.2685		5.50				
14	14	PFTeDA	712.9 > 668.8		3.13e4	0.2685		5.71				
15	15	13C2-PFHxA	315 > 269.8	1.52e4	3.13e4	0.2685	0.506	3.28	3.25	4.85	35.7	96.0
16	16	13C2-PFDA	515.1 > 469.9	2.11e4	3.13e4	0.2685	0.810	4.67	4.68	6.75	31.1	83.4
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.05e4	3.10e4	0.2685	1.119	4.78	4.90	39.3	131	87.9
18	18	13C2-PFOA	414.9 > 369.7	3.13e4	3.13e4	0.2685	1.000	3.92	4.09	10.0	37.2	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.48e4	1.48e4	0.2685	1.000	4.29	4.46	28.7	107	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.10e4	3.10e4	0.2685	1.000	4.62	4.78	40.0	149	100.0

AD 5/3/2018

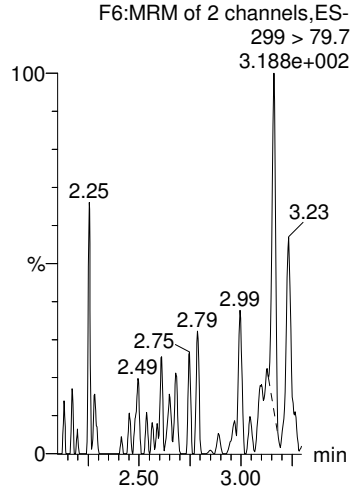
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-41.qld

Last Altered: Thursday, May 03, 2018 14:06:48 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:07:01 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_41, Date: 03-May-2018, Time: 01:41:36, ID: 1800728-05 WI-A06-FB20-0418 0.26849, Description: WI-A06-FB20-0418

PFBS



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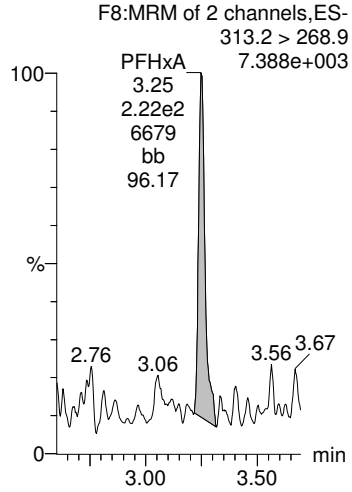

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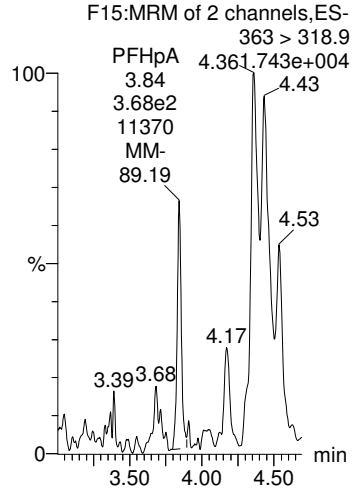

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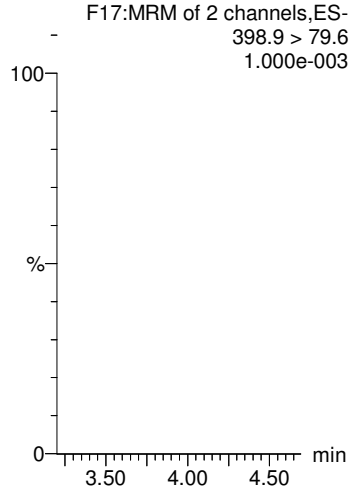
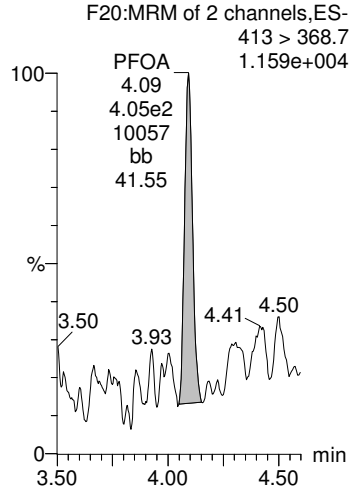
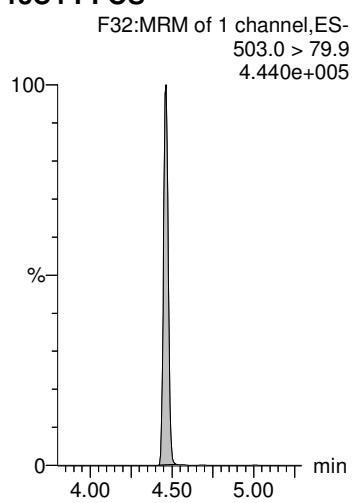


PFOA



13C4-PFOS



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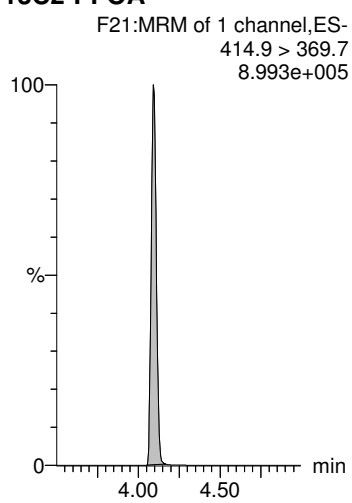

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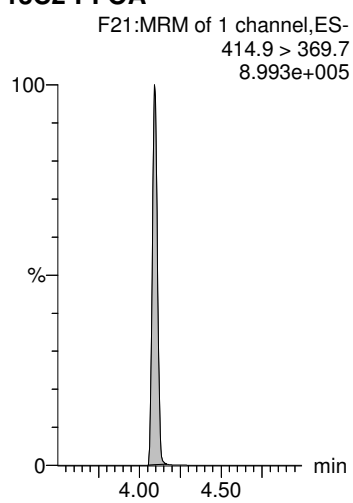

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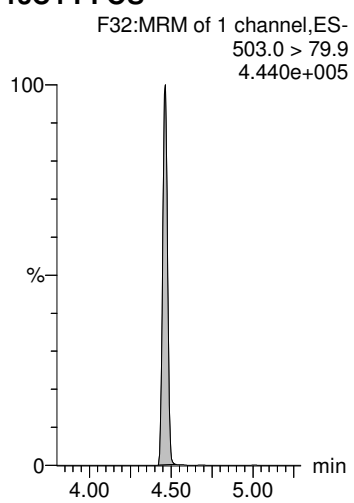

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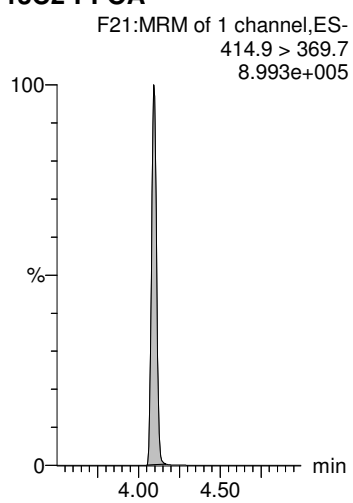


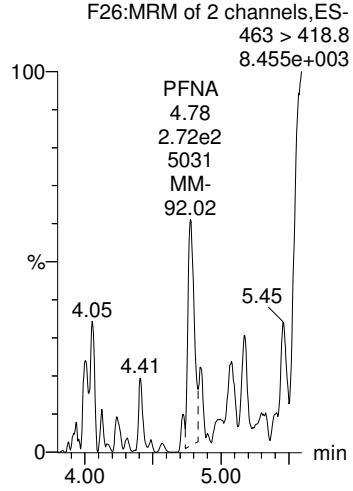
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-41.qld

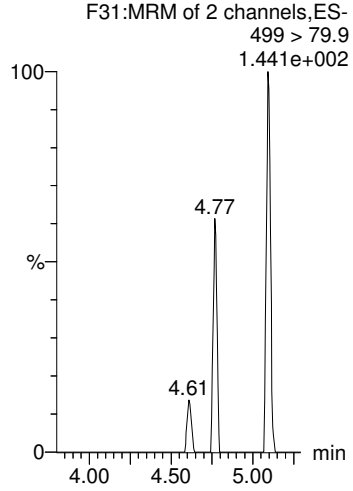
Last Altered: Thursday, May 03, 2018 14:06:48 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:07:01 Pacific Daylight Time

Name: 180502M4_41, Date: 03-May-2018, Time: 01:41:36, ID: 1800728-05 WI-A06-FB20-0418 0.26849, Description: WI-A06-FB20-0418

PFNA



PFOS



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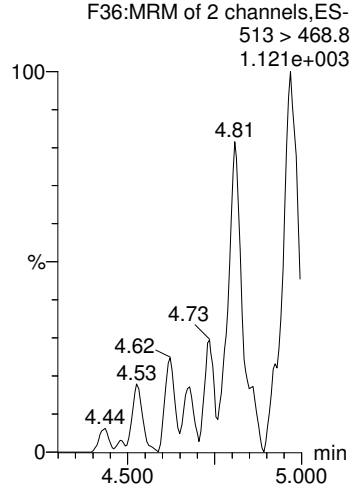
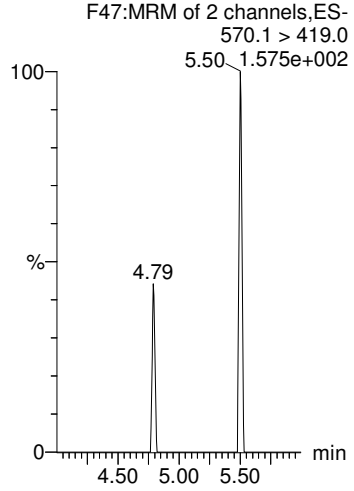


N-MeFOSAA



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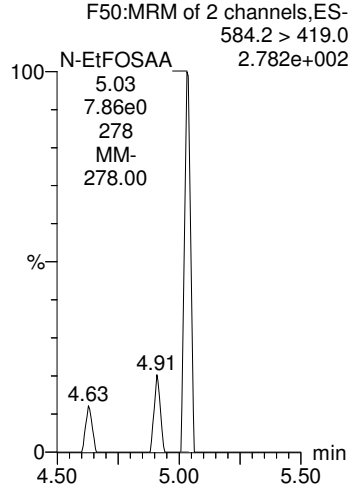
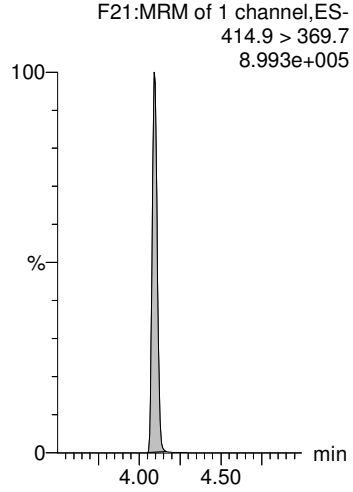
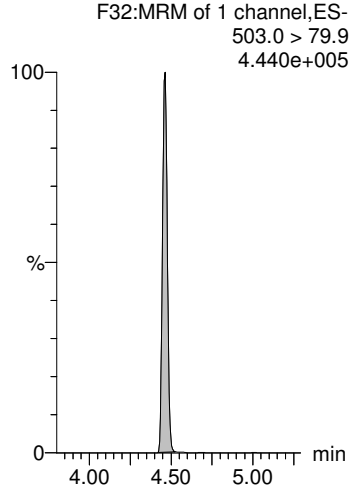


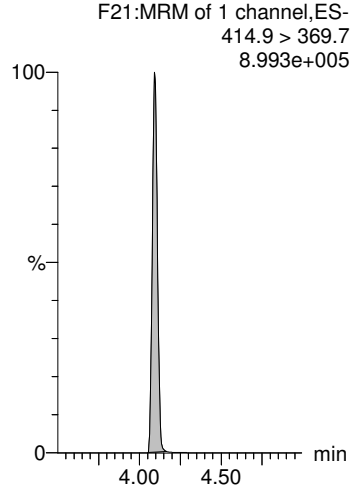
13C2-PFOA



13C4-PFOS



13C2-PFOA



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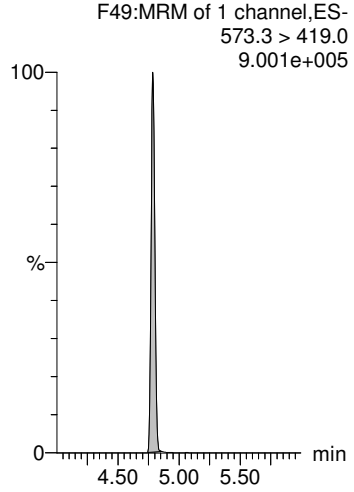

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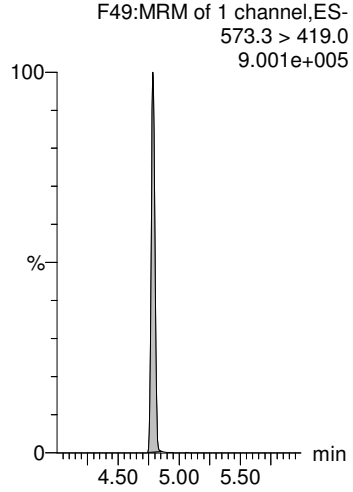

AD 5/3/2018

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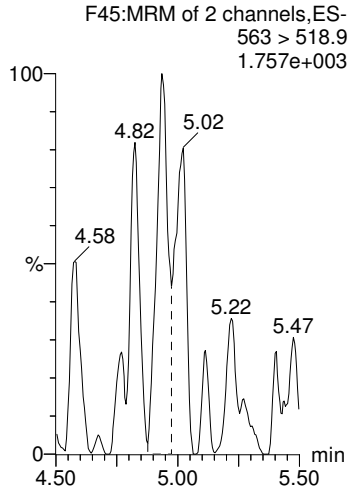
Printed: Thursday, May 03, 2018 14:07:01 Pacific Daylight Time

Name: 180502M4_41, Date: 03-May-2018, Time: 01:41:36, ID: 1800728-05 WI-A06-FB20-0418 0.26849, Description: WI-A06-FB20-0418

PFUnA



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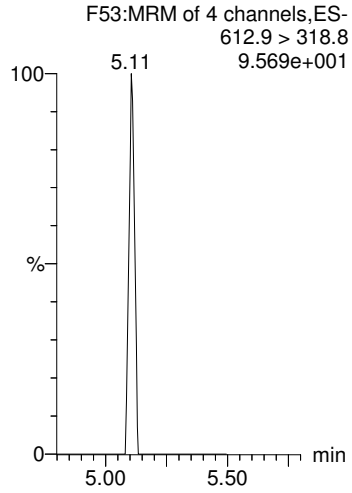

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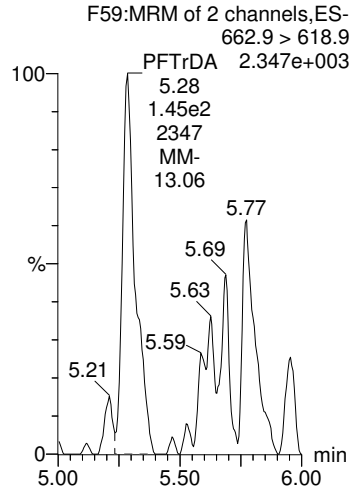

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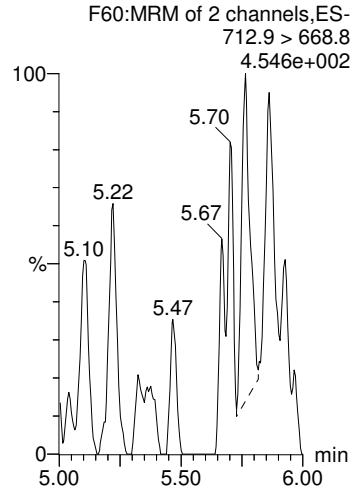
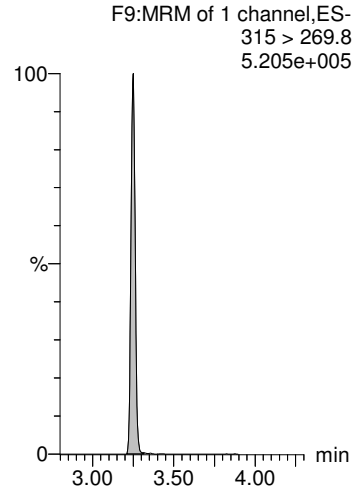


13C2-PFHxA



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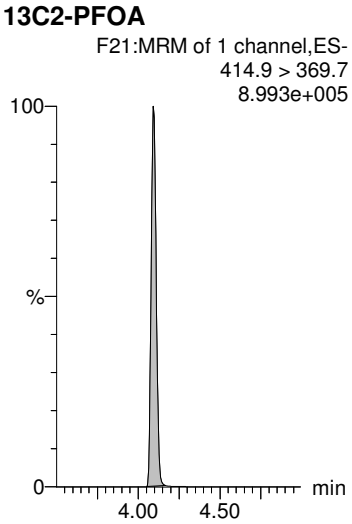

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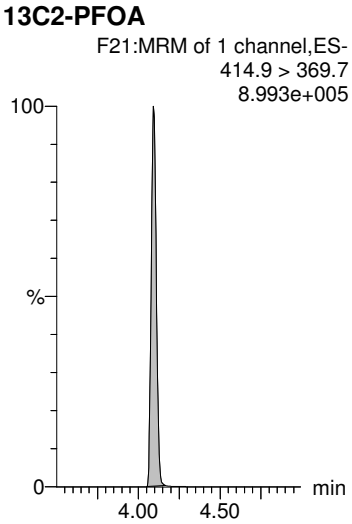

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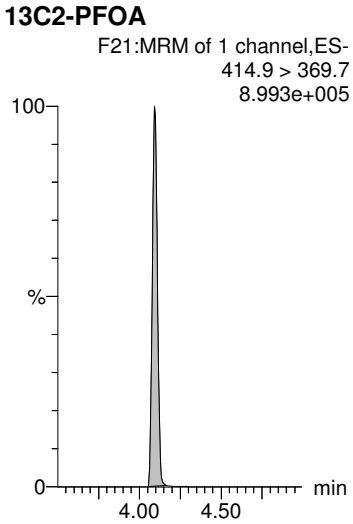

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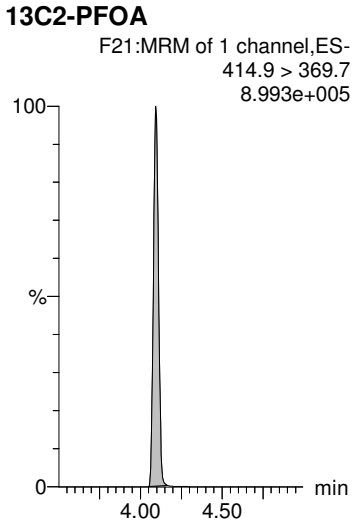

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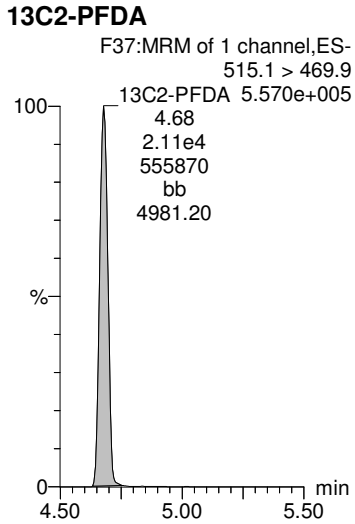


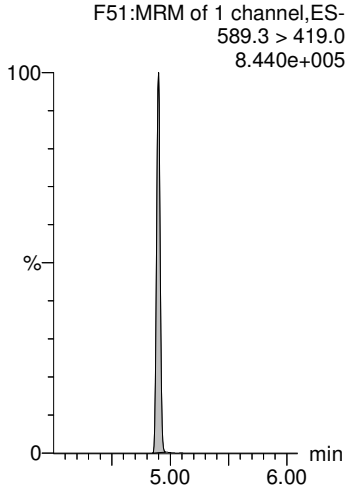
AD 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-41.qld

Last Altered: Thursday, May 03, 2018 14:06:48 Pacific Daylight Time
Printed: Thursday, May 03, 2018 14:07:01 Pacific Daylight Time

Name: 180502M4_41, Date: 03-May-2018, Time: 01:41:36, ID: 1800728-05 WI-A06-FB20-0418 0.26849, Description: WI-A06-FB20-0418

d5-N-EtFOSAA



AD 5/3/2018

INJECTION INTERNAL STANDARD (IIS) AREAS,

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

ICAL

50-150%

Compound 18: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	ICAL AREA	% AREA	
1	IPA	180502M4_11	Analyte	10			33578.23	0.00	
2	ICV180502M4-1 PFC 537 ICV 18D2007	180502M4_12	Analyte	10	4.13	33967.48	33578.23	101.16	
3	IPA	180502M4_13	Analyte	10			33578.23	0.00	
4	1800702-09 CH-AT-1RW193-0418 0.25453	180502M4_14	Analyte	10	4.12	28125.00	33578.23	83.76	
5	1800702-10 CH-AT-1FB193-0418 0.24305	180502M4_15	Analyte	10	4.12	25970.40	33578.23	77.34	
6	1800702-09@5X CH-AT-1RW193-0418 0.25453	180502M4_16	Analyte	10	4.12	6978.95	33578.23	20.78	NA
7	1800702-10@5X CH-AT-1FB193-0418 0.24305	180502M4_17	Analyte	10	4.12	25241.48	33578.23	75.17	NA
8	B8D0148-BS1 LFB 0.25	180502M4_18	Analyte	10	4.12	39240.18	33578.23	116.86	
9	B8D0148-BSD1 LFBD 0.25	180502M4_19	Analyte	10	4.12	30661.25	33578.23	91.31	
10	B8D0148-BLK1 LRB 0.25	180502M4_20	Analyte	10	4.12	33593.45	33578.23	100.05	
11	1800702-09RE1 CH-AT-1RW193-0418 0.25627	180502M4_21	Analyte	10	4.12	31530.96	33578.23	93.90	
12	1800702-10RE1 CH-AT-1FB193-0418 0.25575	180502M4_22	Analyte	10	4.11	33392.40	33578.23	99.45	
13	1800702-09RE1@5X CH-AT-1RW193-0418 0.25627	180502M4_23	Analyte	10	4.11	11199.37	33578.23	33.35	NA
14	1800702-10RE1@5X CH-AT-1FB193-0418 0.25575	180502M4_24	Analyte	10	4.11	8749.54	33578.23	26.06	NA
15	B8D0064-BS1 LFB 0.25	180502M4_25	Analyte	10	4.11	39706.27	33578.23	118.25	
16	B8D0064-BLK1 LRB 0.25	180502M4_26	Analyte	10	4.11	42714.36	33578.23	127.21	
17	1800625-01 FB01-0418 0.25462	180502M4_27	Analyte	10	4.11	44720.68	33578.23	133.18	
18	1800625-02 MW-18-0418 0.25052	180502M4_28	Analyte	10	4.11	40455.94	33578.23	120.48	
19	1800625-03 MW-32-0418 0.26043	180502M4_29	Analyte	10	4.11	42271.93	33578.23	125.89	
20	1800625-04 MW-19-0418 0.25939	180502M4_30	Analyte	10	4.11	41687.10	33578.23	124.15	
21	1800625-05 MW-11-0418 0.25818	180502M4_31	Analyte	10	4.1	43342.67	33578.23	129.08	
22	1800625-06 MW-30-0418 0.2575	180502M4_32	Analyte	10	4.1	64432.82	33578.23	191.89	AREA OUT
23	1800625-07 MW-29-0418 0.25858	180502M4_33	Analyte	10	4.1	42617.57	33578.23	126.92	
24	IPA	180502M4_34	Analyte	10			33578.23	0.00	
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	10	4.1	34616.84	33578.23	103.09	
26	IPA	180502M4_36	Analyte	10			33578.23	0.00	
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	10	4.1	34055.35	33578.23	101.42	
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	10	4.1	28686.39	33578.23	85.43	
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	10	4.1	33086.91	33578.23	98.54	
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	10	4.09	25627.80	33578.23	76.32	
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	10	4.09	31302.12	33578.23	93.22	
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	10	4.09	32798.33	33578.23	97.68	
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	10	4.09	31587.47	33578.23	94.07	
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	10	4.09	31899.80	33578.23	95.00	
35	IPA	180502M4_45	Analyte	10			33578.23	0.00	
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	10	4.09	32100.19	33578.23	95.60	
37	IPA	180502M4_47	Analyte	10			33578.23	0.00	

Compound 19: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	ICAL AREA	% AREA	
1	IPA	180502M4_11	Analyte	28.7			14462.22	0.00	
2	ICV180502M4-1 PFC 537 ICV 18D2007	180502M4_12	Analyte	28.7	4.49	17096.41	14462.22	118.21	
3	IPA	180502M4_13	Analyte	28.7			14462.22	0.00	
4	1800702-09 CH-AT-1RW193-0418 0.25453	180502M4_14	Analyte	28.7	4.49	12601.38	14462.22	87.13	
5	1800702-10 CH-AT-1FB193-0418 0.24305	180502M4_15	Analyte	28.7	4.49	12387.18	14462.22	85.65	
6	1800702-09@5X CH-AT-1RW193-0418 0.25453	180502M4_16	Analyte	28.7	4.49	2864.46	14462.22	19.81	NA
7	1800702-10@5X CH-AT-1FB193-0418 0.24305	180502M4_17	Analyte	28.7	4.48	5254.60	14462.22	36.33	NA
8	B8D0148-BS1 LFB 0.25	180502M4_18	Analyte	28.7	4.49	15767.45	14462.22	109.03	
9	B8D0148-BSD1 LFBD 0.25	180502M4_19	Analyte	28.7	4.48	17346.01	14462.22	119.94	
10	B8D0148-BLK1 LRB 0.25	180502M4_20	Analyte	28.7	4.48	16362.28	14462.22	113.14	
11	1800702-09RE1 CH-AT-1RW193-0418 0.25627	180502M4_21	Analyte	28.7	4.48	16219.09	14462.22	112.15	
12	1800702-10RE1 CH-AT-1FB193-0418 0.25575	180502M4_22	Analyte	28.7	4.48	14352.94	14462.22	99.24	
13	1800702-09RE1@5X CH-AT-1RW193-0418 0.25627	180502M4_23	Analyte	28.7	4.48	5333.66	14462.22	36.88	NA
14	1800702-10RE1@5X CH-AT-1FB193-0418 0.25575	180502M4_24	Analyte	28.7	4.48	4302.56	14462.22	29.75	NA
15	B8D0064-BS1 LFB 0.25	180502M4_25	Analyte	28.7	4.48	18506.99	14462.22	127.97	
16	B8D0064-BLK1 LRB 0.25	180502M4_26	Analyte	28.7	4.47	17929.26	14462.22	123.97	
17	1800625-01 FB01-0418 0.25462	180502M4_27	Analyte	28.7	4.47	19680.53	14462.22	136.08	
18	1800625-02 MW-18-0418 0.25052	180502M4_28	Analyte	28.7			14462.22	0.00	
19	1800625-03 MW-32-0418 0.26043	180502M4_29	Analyte	28.7	4.47	19831.32	14462.22	137.13	
20	1800625-04 MW-19-0418 0.25939	180502M4_30	Analyte	28.7	4.47	18745.01	14462.22	129.61	
21	1800625-05 MW-11-0418 0.25818	180502M4_31	Analyte	28.7	4.47	19878.31	14462.22	137.45	
22	1800625-06 MW-30-0418 0.2575	180502M4_32	Analyte	28.7	4.47	28773.00	14462.22	198.95	AREA OUT
23	1800625-07 MW-29-0418 0.25858	180502M4_33	Analyte	28.7	4.47	18559.39	14462.22	128.33	
24	IPA	180502M4_34	Analyte	28.7			14462.22	0.00	
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	28.7	4.47	15857.96	14462.22	109.65	
26	IPA	180502M4_36	Analyte	28.7			14462.22	0.00	
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	28.7	4.46	15715.03	14462.22	108.66	
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	28.7	4.46	16202.75	14462.22	112.04	
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	28.7	4.46	14395.81	14462.22	99.54	
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	28.7	4.46	12407.13	14462.22	85.79	
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	28.7	4.46	14780.96	14462.22	102.20	
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	28.7	4.46	15943.80	14462.22	110.24	
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	28.7	4.46	15812.98	14462.22	109.34	
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	28.7	4.46	14518.61	14462.22	100.39	
35	IPA	180502M4_45	Analyte	28.7			14462.22	0.00	
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	28.7	4.45	15286.02	14462.22	105.70	
37	IPA	180502M4_47	Analyte	28.7			14462.22	0.00	

Compound 20: d3-N-MeFOSAA

	ID	Name	Type	Std. Conc	RT	Area	ICAL AREA	% AREA	
1	IPA	180502M4_11	Analyte	40			29675.73	0.00	
2	ICV180502M4-1 PFC 537 ICV 18D2007	180502M4_12	Analyte	40	4.82	33845.38	29675.73	114.05	
3	IPA	180502M4_13	Analyte	40			29675.73	0.00	
4	1800702-09 CH-AT-1RW193-0418 0.25453	180502M4_14	Analyte	40	4.81	26226.80	29675.73	88.38	
5	1800702-10 CH-AT-1FB193-0418 0.24305	180502M4_15	Analyte	40	4.81	27449.16	29675.73	92.50	
6	1800702-09@5X CH-AT-1RW193-0418 0.25453	180502M4_16	Analyte	40	4.81	6649.44	29675.73	22.41	NA
7	1800702-10@5X CH-AT-1FB193-0418 0.24305	180502M4_17	Analyte	40	4.81	5225.57	29675.73	17.61	NA
8	B8D0148-BS1 LFB 0.25	180502M4_18	Analyte	40	4.81	33696.91	29675.73	113.55	
9	B8D0148-BSD1 LFBD 0.25	180502M4_19	Analyte	40	4.81	33132.59	29675.73	111.65	
10	B8D0148-BLK1 LRB 0.25	180502M4_20	Analyte	40	4.81	32762.74	29675.73	110.40	
11	1800702-09RE1 CH-AT-1RW193-0418 0.25627	180502M4_21	Analyte	40	4.8	33367.74	29675.73	112.44	
12	1800702-10RE1 CH-AT-1FB193-0418 0.25575	180502M4_22	Analyte	40	4.8	29082.09	29675.73	98.00	
13	1800702-09RE1@5X CH-AT-1RW193-0418 0.25627	180502M4_23	Analyte	40	4.8	11235.55	29675.73	37.86	NA
14	1800702-10RE1@5X CH-AT-1FB193-0418 0.25575	180502M4_24	Analyte	40	4.8	8629.36	29675.73	29.08	NA
15	B8D0064-BS1 LFB 0.25	180502M4_25	Analyte	40	4.8	39297.75	29675.73	132.42	
16	B8D0064-BLK1 LRB 0.25	180502M4_26	Analyte	40	4.8	38142.59	29675.73	128.53	
17	1800625-01 FB01-0418 0.25462	180502M4_27	Analyte	40	4.8	40676.36	29675.73	137.07	
18	1800625-02 MW-18-0418 0.25052	180502M4_28	Analyte	40	4.8	37158.71	29675.73	125.22	
19	1800625-03 MW-32-0418 0.26043	180502M4_29	Analyte	40	4.8	39655.48	29675.73	133.63	
20	1800625-04 MW-19-0418 0.25939	180502M4_30	Analyte	40	4.79	39878.40	29675.73	134.38	
21	1800625-05 MW-11-0418 0.25818	180502M4_31	Analyte	40	4.79	38431.11	29675.73	129.50	
22	1800625-06 MW-30-0418 0.2575	180502M4_32	Analyte	40	4.79	58534.27	29675.73	197.25	AREA OUT
23	1800625-07 MW-29-0418 0.25858	180502M4_33	Analyte	40	4.79	38098.09	29675.73	128.38	
24	IPA	180502M4_34	Analyte	40			29675.73	0.00	
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	40	4.79	31698.19	29675.73	106.82	
26	IPA	180502M4_36	Analyte	40			29675.73	0.00	
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	40	4.79	32150.94	29675.73	108.34	
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	40	4.79	32489.69	29675.73	109.48	
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	40	4.79	33223.80	29675.73	111.96	
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	40	4.78	28545.42	29675.73	96.19	
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	40	4.78	31030.34	29675.73	104.56	
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	40	4.78	32014.45	29675.73	107.88	
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	40	4.78	31963.21	29675.73	107.71	
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	40	4.78	33246.96	29675.73	112.03	
35	IPA	180502M4_45	Analyte	40			29675.73	0.00	
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	40	4.78	30375.26	29675.73	102.36	
37	IPA	180502M4_47	Analyte	40			29675.73	0.00	

CCAL

Compound 18: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	CCAL AREA	%AREA
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	10	4.1	34616.84	34616.84	100.00
26	IPA	180502M4_36	Analyte	10			34616.84	0.00
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	10	4.1	34055.35	34616.84	98.38
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	10	4.1	28686.39	34616.84	82.87
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	10	4.1	33086.91	34616.84	95.58
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	10	4.09	25627.80	34616.84	74.03
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	10	4.09	31302.12	34616.84	90.42
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	10	4.09	32798.33	34616.84	94.75
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	10	4.09	31587.47	34616.84	91.25
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	10	4.09	31899.80	34616.84	92.15
35	IPA	180502M4_45	Analyte	10			34616.84	0.00
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	10	4.09	32100.19	34616.84	92.73
37	IPA	180502M4_47	Analyte	10			34616.84	0.00

Compound 19: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	CCAL AREA	%AREA
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	28.7	4.47	15857.96	15857.96	100.00
26	IPA	180502M4_36	Analyte	28.7			15857.96	0.00
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	28.7	4.46	15715.03	15857.96	99.10
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	28.7	4.46	16202.75	15857.96	102.17
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	28.7	4.46	14395.81	15857.96	90.78
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	28.7	4.46	12407.13	15857.96	78.24
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	28.7	4.46	14780.96	15857.96	93.21
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	28.7	4.46	15943.8	15857.96	100.54
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	28.7	4.46	15812.98	15857.96	99.72
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	28.7	4.46	14518.61	15857.96	91.55
35	IPA	180502M4_45	Analyte	28.7			15857.96	0.00
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	28.7	4.45	15286.02	15857.96	96.39
37	IPA	180502M4_47	Analyte	28.7			15857.96	0.00

Compound 20: d3-N-MeFOSAA

	ID	Name	Type	Std. Conc	RT	Area	CCAL AREA	%AREA
25	ST180502M4-10 PFC CS2 537 18D1815	180502M4_35	Analyte	40	4.79	31698.19	31698.19	100.00
26	IPA	180502M4_36	Analyte	40			31698.19	0.00
27	1800728-01 WI-A06-RW18-0418 0.25854	180502M4_37	Analyte	40	4.79	32150.94	31698.19	101.43
28	1800728-02 WI-A06-RW18P-0418 0.25704	180502M4_38	Analyte	40	4.79	32489.69	31698.19	102.50
29	1800728-03 WI-A06-FB18-0418 0.26707	180502M4_39	Analyte	40	4.79	33223.8	31698.19	104.81
30	1800728-04 WI-A06-RW20-0418 0.25816	180502M4_40	Analyte	40	4.78	28545.42	31698.19	90.05
31	1800728-05 WI-A06-FB20-0418 0.26849	180502M4_41	Analyte	40	4.78	31030.34	31698.19	97.89
32	1800758-01 WI-AF-1RW57-0418 0.25788	180502M4_42	Analyte	40	4.78	32014.45	31698.19	101.00
33	1800758-02 WI-AF-1RW57P-0418 0.26832	180502M4_43	Analyte	40	4.78	31963.21	31698.19	100.84
34	1800758-03 WI-AF-1FB57-0418 0.27106	180502M4_44	Analyte	40	4.78	33246.96	31698.19	104.89
35	IPA	180502M4_45	Analyte	40			31698.19	0.00
36	ST180502M4-11 PFC CS4 537 18D1817	180502M4_46	Analyte	40	4.78	30375.26	31698.19	95.83
37	IPA	180502M4_47	Analyte	40			31698.19	0.00

LC Calibration Standards Review Checklist Q1

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	other
Calibration ID: ST80502MH-10	L (M) H	NA ☑	☑	☑	☑	☑	☑	NA ☑
Calibration ID: -11	L M (H)	☑	☑	☐	☑	☑	☑	☑
Calibration ID: NA	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	NA ☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

AR 5/3/18

Full Mass Cal. Date: 4/2/18

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

IIS Area Saved ☑

Reviewed By: AD 5/3/18
Initials/Date

Comments:

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-35.qld

Last Altered: Thursday, May 03, 2018 12:20:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:20:41 Pacific Daylight Time

√AD 5/3/18

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

Name: 180502M4_35, Date: 03-May-2018, Time: 00:32:42, ID: ST180502M4-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.31e4	1.59e4	1.0000		2.89	2.89	23.6	21.7	98.2
2	2	PFHxA	313.2 > 268.9	6.07e4	3.46e4	1.0000		3.28	3.25	17.5	25.0	99.9
3	3	PFHpA	363 > 318.9	5.99e4	3.46e4	1.0000		3.73	3.72	17.3	24.9	99.4
4	4	PFHxS	398.9 > 79.6	1.09e4	1.59e4	1.0000		3.83	3.82	19.6	20.7	93.6
5	5	PFOA	413 > 368.7	8.24e4	3.46e4	1.0000		4.11	4.10	23.8	26.1	104.4
6	6	PFNA	463 > 418.8	7.48e4	3.46e4	1.0000		4.42	4.41	21.6	22.4	89.4
7	7	PFOS	499 >79.9	1.40e4	1.59e4	1.0000		4.48	4.47	25.3	22.7	98.3
8	8	PFDA	513 > 468.8	9.73e4	3.46e4	1.0000		4.69	4.68	28.1	25.0	99.8
9	9	N-MeFOSAA	570.1 > 419.0	2.84e4	3.17e4	1.0000		4.79	4.79	35.8	23.1	92.3
10	10	N-EtFOSAA	584.2 >419.0	2.32e4	3.17e4	1.0000		4.91	4.90	29.3	25.5	101.9
11	11	PFUnA	563 > 518.9	8.64e4	3.46e4	1.0000		4.92	4.91	25.0	23.6	94.5
12	12	PFDoA	612.9 > 318.8	1.19e4	3.46e4	1.0000		5.13	5.12	3.42	22.6	90.3
13	13	PFTrDA	662.9 > 618.9	1.23e5	3.46e4	1.0000		5.31	5.30	35.4	24.5	98.1
14	14	PFTeDA	712.9 > 668.8	1.03e5	3.46e4	1.0000		5.48	5.51	29.7	24.5	98.0
15	15	13C2-PFHxA	315 > 269.8	1.80e4	3.46e4	1.0000	0.506	3.29	3.25	5.19	10.3	102.7
16	16	13C2-PFDA	515.1 > 469.9	2.70e4	3.46e4	1.0000	0.810	4.68	4.68	7.81	9.64	96.4
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.66e4	3.17e4	1.0000	1.119	4.79	4.90	46.1	41.2	103.1
18	18	13C2-PFOA	414.9 > 369.7	3.46e4	3.46e4	1.0000	1.000	3.92	4.10	10.0	10.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.59e4	1.59e4	1.0000	1.000	4.29	4.47	28.7	28.7	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.17e4	3.17e4	1.0000	1.000	4.62	4.79	40.0	40.0	100.0

AR 5/3/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:07:15 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:08:53 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	180502M4_12	ICV180502M4-1 PFC 537 ICV 18D2007	02-May-18	20:08:38
2	180502M4_13	IPA	02-May-18	20:20:06
3	180502M4_14	1800702-09 CH-AT-1RW193-0418 0.25453	02-May-18	20:31:33
4	180502M4_15	1800702-10 CH-AT-1FB193-0418 0.24305	02-May-18	20:43:03
5	180502M4_16	1800702-09@5X CH-AT-1RW193-0418 0.25453	02-May-18	20:54:33
6	180502M4_17	1800702-10@5X CH-AT-1FB193-0418 0.24305	02-May-18	21:06:00
7	180502M4_18	B8D0148-BS1 LFB 0.25	02-May-18	21:17:29
8	180502M4_19	B8D0148-BSD1 LFBD 0.25	02-May-18	21:28:59
9	180502M4_20	B8D0148-BLK1 LRB 0.25	02-May-18	21:40:29
10	180502M4_21	1800702-09RE1 CH-AT-1RW193-0418 0.25627	02-May-18	21:51:55
11	180502M4_22	1800702-10RE1 CH-AT-1FB193-0418 0.25575	02-May-18	22:03:24
12	180502M4_23	1800702-09RE1@5X CH-AT-1RW193-0418 0.2...	02-May-18	22:14:54
13	180502M4_24	1800702-10RE1@5X CH-AT-1FB193-0418 0.25...	02-May-18	22:26:21
14	180502M4_25	B8D0064-BS1 LFB 0.25	02-May-18	22:37:51
15	180502M4_26	B8D0064-BLK1 LRB 0.25	02-May-18	22:49:19
16	180502M4_27	1800625-01 FB01-0418 0.25462	02-May-18	23:00:48
17	180502M4_28	1800625-02 MW-18-0418 0.25052	02-May-18	23:12:18
18	180502M4_29	1800625-03 MW-32-0418 0.26043	02-May-18	23:23:47
19	180502M4_30	1800625-04 MW-19-0418 0.25939	02-May-18	23:35:16
20	180502M4_31	1800625-05 MW-11-0418 0.25818	02-May-18	23:46:46
21	180502M4_32	1800625-06 MW-30-0418 0.2575	02-May-18	23:58:13
22	180502M4_33	1800625-07 MW-29-0418 0.25858	03-May-18	00:09:42
23	180502M4_34	IPA	03-May-18	00:21:11
24	180502M4_35	ST180502M4-10 PFC CS2 537 18D1815	03-May-18	00:32:42
25	180502M4_36	IPA	03-May-18	00:44:12
26	180502M4_37	1800728-01 WI-A06-RW18-0418 0.25854	03-May-18	00:55:41
27	180502M4_38	1800728-02 WI-A06-RW18P-0418 0.25704	03-May-18	01:07:08
28	180502M4_39	1800728-03 WI-A06-FB18-0418 0.26707	03-May-18	01:18:38
29	180502M4_40	1800728-04 WI-A06-RW20-0418 0.25816	03-May-18	01:30:07
30	180502M4_41	1800728-05 WI-A06-FB20-0418 0.26849	03-May-18	01:41:36
31	180502M4_42	1800758-01 WI-AF-1RW57-0418 0.25788	03-May-18	01:53:06

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:07:15 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:08:53 Pacific Daylight Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	180502M4_43	1800758-02 WI-AF-1RW57P-0418 0.26832	03-May-18	02:04:32
33	180502M4_44	1800758-03 WI-AF-1FB57-0418 0.27106	03-May-18	02:16:02
34	180502M4_45	IPA	03-May-18	02:27:28
35	180502M4_46	ST180502M4-6 PFC CS4 537 18D1817	03-May-18	02:38:55
36	180502M4_47	IPA	03-May-18	02:50:25

AO 5/3/18

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-35.qld

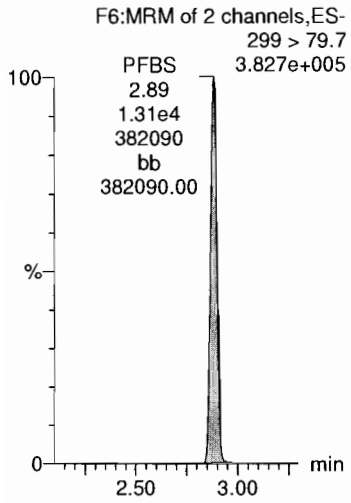
Last Altered: Thursday, May 03, 2018 12:20:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:20:41 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

Name: 180502M4_35, Date: 03-May-2018, Time: 00:32:42, ID: ST180502M4-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

PFBS



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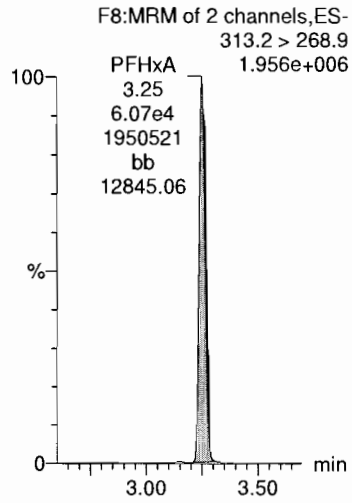

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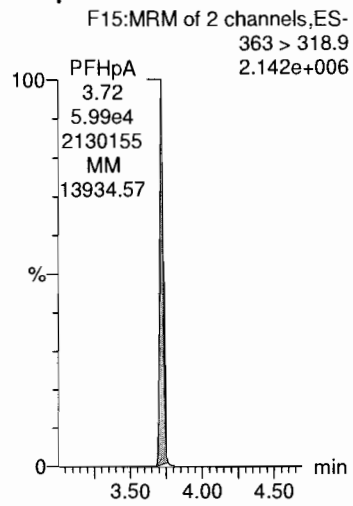

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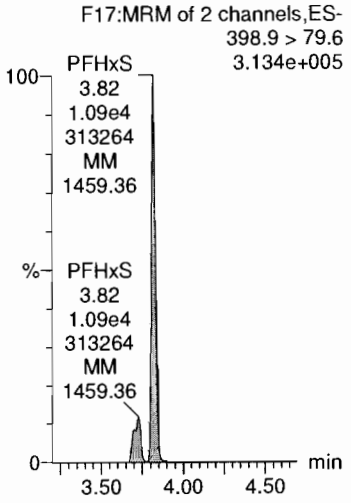

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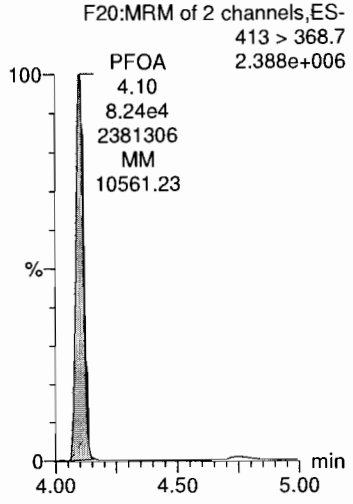

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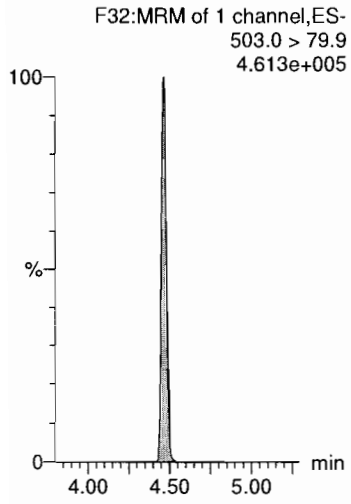

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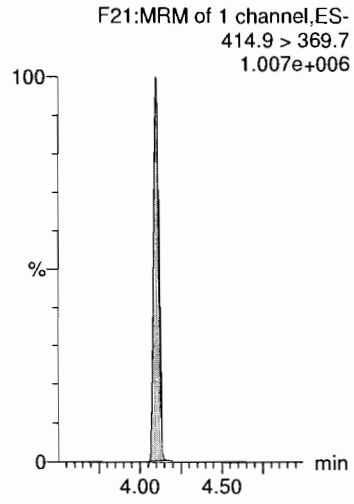

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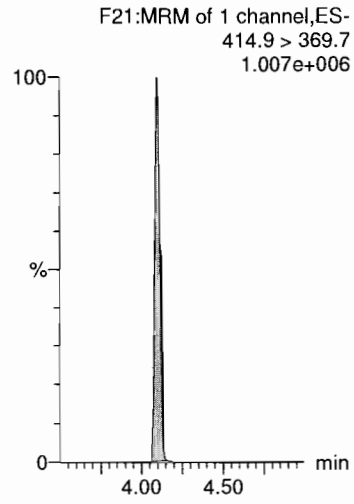

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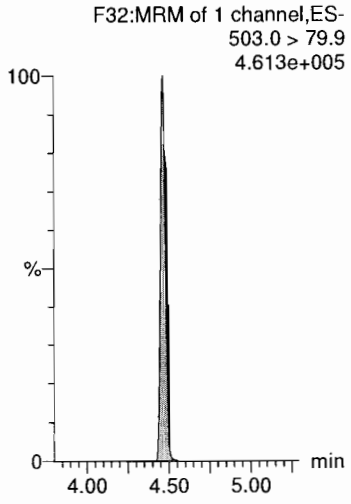
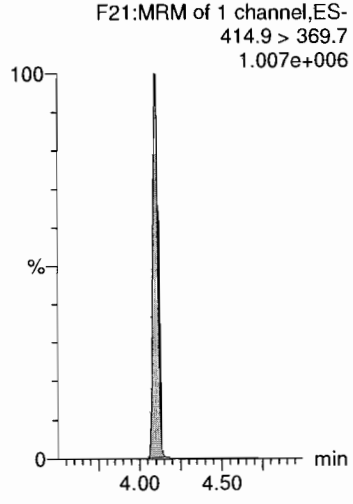


13C2-PFOA



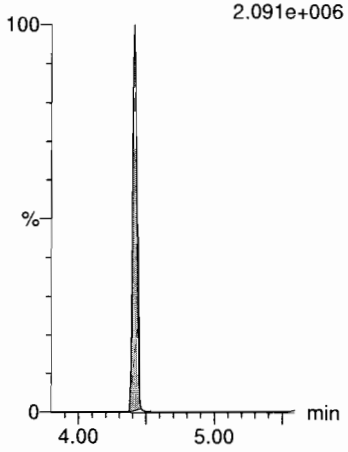
AR 5/3/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-35.qld

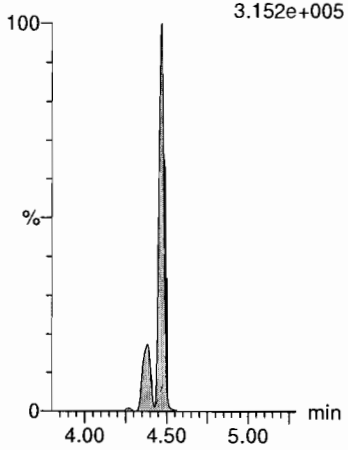
Last Altered: Thursday, May 03, 2018 12:20:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:20:41 Pacific Daylight Time

Name: 180502M4_35, Date: 03-May-2018, Time: 00:32:42, ID: ST180502M4-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

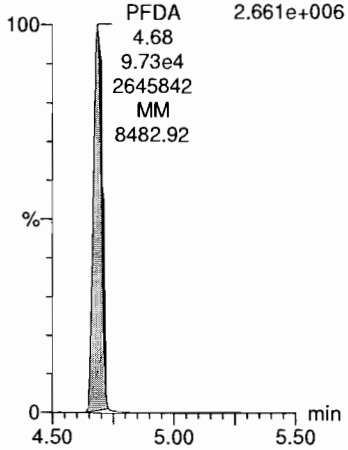
PFNA
F26:MRM of 2 channels,ES-
463 > 418.8
2.091e+006



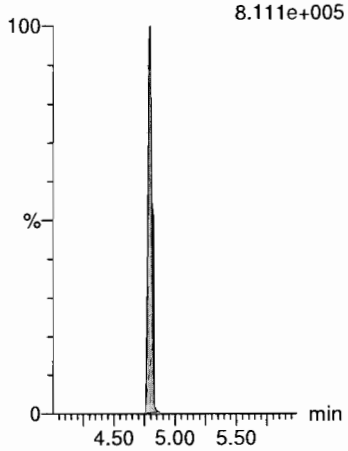
PFOS
F31:MRM of 2 channels,ES-
499 > 79.9
3.152e+005



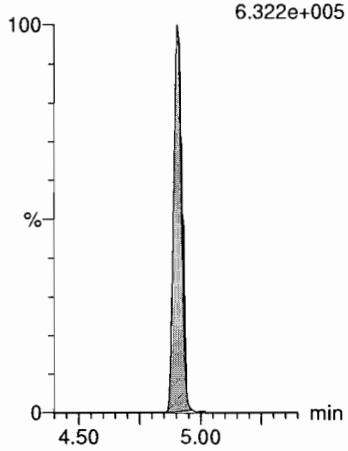
PFDA
F36:MRM of 2 channels,ES-
513 > 468.8
2.661e+006



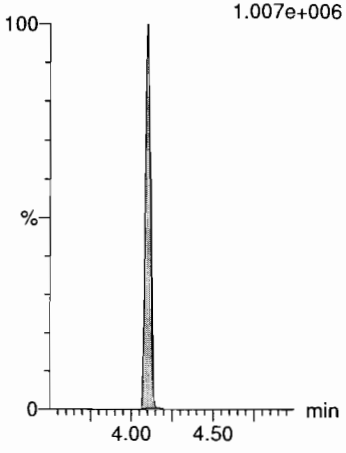
N-MeFOSAA
F47:MRM of 2 channels,ES-
570.1 > 419.0
8.111e+005



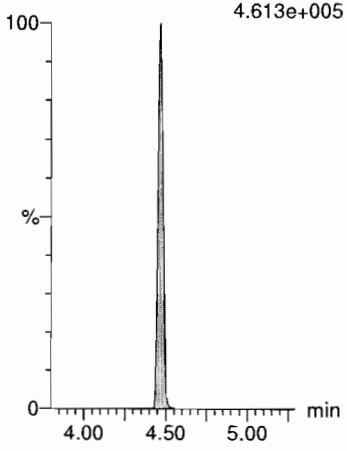
N-EtFOSAA
F50:MRM of 2 channels,ES-
584.2 > 419.0
6.322e+005



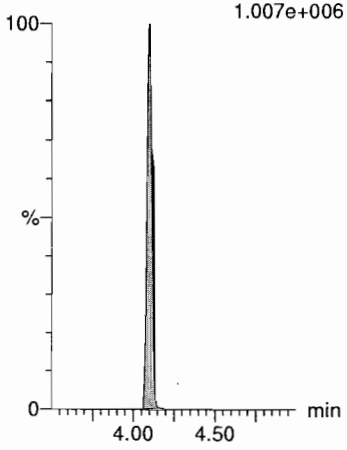
13C2-PFOA
F21:MRM of 1 channel,ES-
414.9 > 369.7
1.007e+006



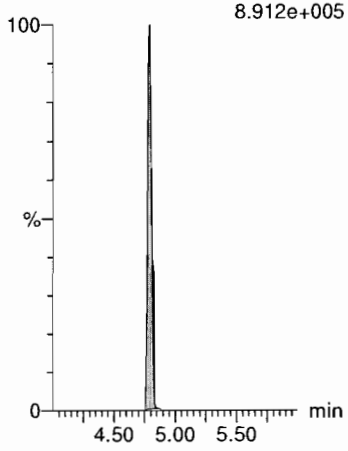
13C4-PFOS
F32:MRM of 1 channel,ES-
503.0 > 79.9
4.613e+005



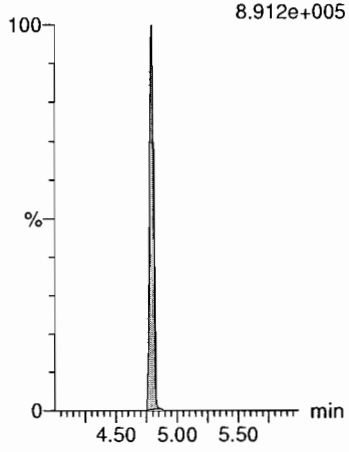
13C2-PFOA
F21:MRM of 1 channel,ES-
414.9 > 369.7
1.007e+006



d3-N-MeFOSAA
F49:MRM of 1 channel,ES-
573.3 > 419.0
8.912e+005



d3-N-MeFOSAA
F49:MRM of 1 channel,ES-
573.3 > 419.0
8.912e+005

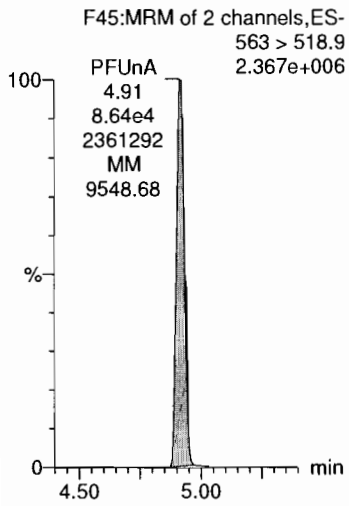


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-35.qld

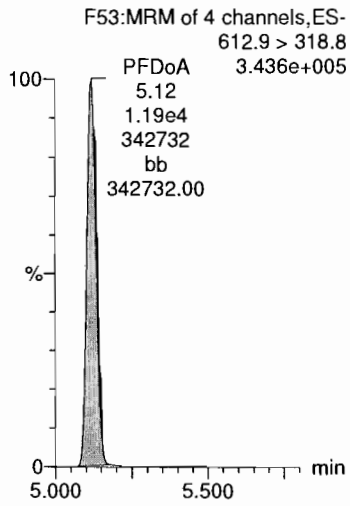
Last Altered: Thursday, May 03, 2018 12:20:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:20:41 Pacific Daylight Time

Name: 180502M4_35, Date: 03-May-2018, Time: 00:32:42, ID: ST180502M4-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

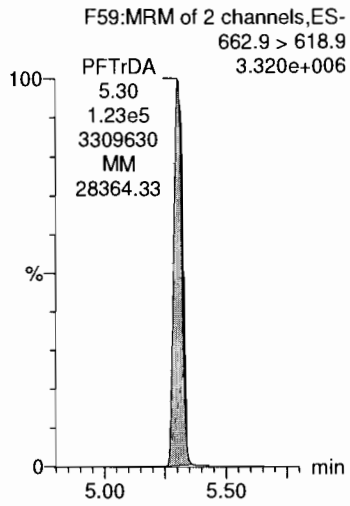
PFUnA



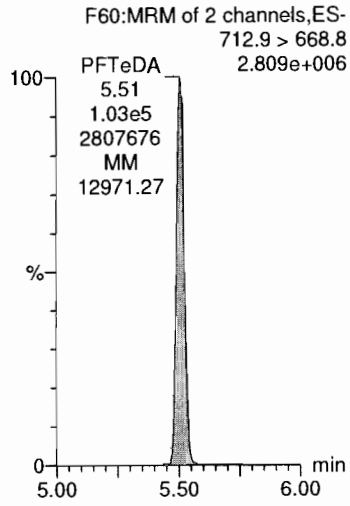
PFDoA



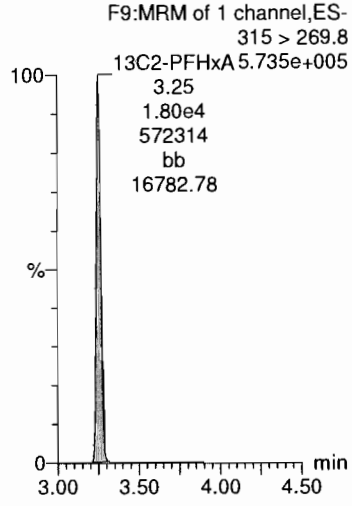
PFTrDA



PFTeDA



13C2-PFHxA



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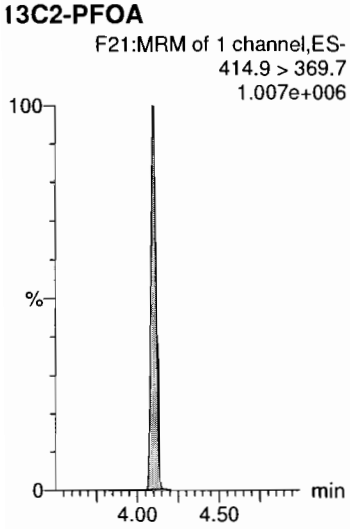

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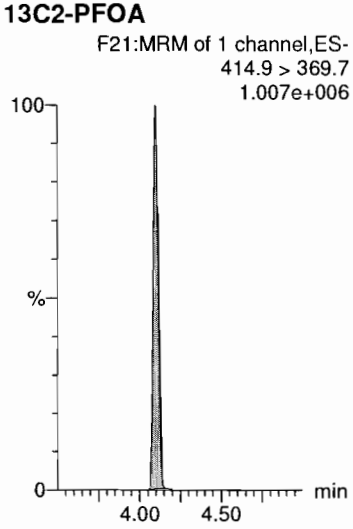

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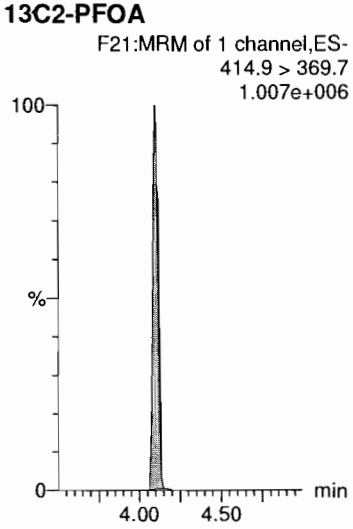

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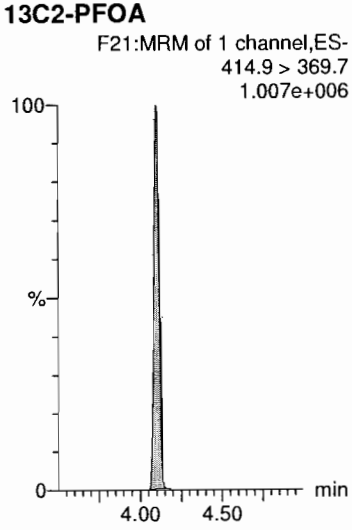

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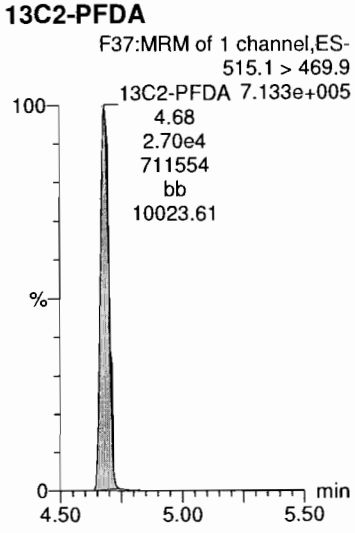


AR 5/3/2018

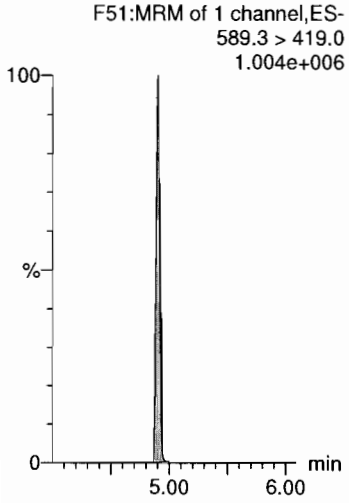
Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-35.qld

Last Altered: Thursday, May 03, 2018 12:20:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:20:41 Pacific Daylight Time

Name: 180502M4_35, Date: 03-May-2018, Time: 00:32:42, ID: ST180502M4-10 PFC CS2 537 18D1815, Description: PFC CS2 537 18D1815

d5-N-EtFOSAA



AR 5/3/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:24:47 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:24:54 Pacific Daylight Time

√AD 5/3/18

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

Name: 180502M4_46, Date: 03-May-2018, Time: 02:38:55, ID: ST180502M4-8, PFC CS4 537 18D1817, Description: PFC CS4 18D1817

-11 AR 5/3/18

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.86e4	1.53e4	1.0000		2.87	2.87	72.5	66.7	100.6
2	2	PFHxA	313.2 > 268.9	1.77e5	3.21e4	1.0000		3.27	3.24	55.2	78.8	105.0
3	3	PFHpA	363 > 318.9	1.67e5	3.21e4	1.0000		3.72	3.71	51.9	74.6	99.5
4	4	PFHxS	398.9 > 79.6	3.26e4	1.53e4	1.0000		3.81	3.81	61.3	64.7	94.6
5	5	PFOA	413 > 368.7	2.29e5	3.21e4	1.0000		4.10	4.09	71.5	78.4	104.5
6	6	PFNA	463 > 418.8	2.42e5	3.21e4	1.0000		4.41	4.41	75.5	78.2	104.3
7	7	PFOS	499 >79.9	3.88e4	1.53e4	1.0000		4.46	4.45	72.8	65.4	94.4
8	8	PFDA	513 > 468.8	2.46e5	3.21e4	1.0000		4.68	4.67	76.5	78.6	104.8
9	9	N-MeFOSAA	570.1 > 419.0	8.96e4	3.04e4	1.0000		4.78	4.78	118	78.2	104.3
10	10	N-EtFOSAA	584.2 >419.0	6.66e4	3.04e4	1.0000		4.90	4.89	87.8	76.2	101.7
11	11	PFUnA	563 > 518.9	2.61e5	3.21e4	1.0000		4.91	4.90	81.3	76.9	102.6
12	12	PFDoA	612.9 > 318.8	3.58e4	3.21e4	1.0000		5.12	5.11	11.1	73.4	97.9
13	13	PFTrDA	662.9 > 618.9	3.41e5	3.21e4	1.0000		5.30	5.29	106	73.7	98.2
14	14	PFTeDA	712.9 > 668.8	3.00e5	3.21e4	1.0000		5.47	5.49	93.5	77.1	102.8
15	15	13C2-PFHxA	315 > 269.8	1.64e4	3.21e4	1.0000	0.506	3.28	3.24	5.10	10.1	100.9
16	16	13C2-PFDA	515.1 > 469.9	2.84e4	3.21e4	1.0000	0.810	4.67	4.67	8.86	10.9	109.3
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.38e4	3.04e4	1.0000	1.119	4.78	4.89	44.5	39.8	99.5
18	18	13C2-PFOA	414.9 > 369.7	3.21e4	3.21e4	1.0000	1.000	3.92	4.09	10.0	10.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.53e4	1.53e4	1.0000	1.000	4.29	4.45	28.7	28.7	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.04e4	3.04e4	1.0000	1.000	4.62	4.78	40.0	40.0	100.0

AR 5/3/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:07:15 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:08:53 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	180502M4_12	ICV180502M4-1 PFC 537 ICV 18D2007	02-May-18	20:08:38
2	180502M4_13	IPA	02-May-18	20:20:06
3	180502M4_14	1800702-09 CH-AT-1RW193-0418 0.25453	02-May-18	20:31:33
4	180502M4_15	1800702-10 CH-AT-1FB193-0418 0.24305	02-May-18	20:43:03
5	180502M4_16	1800702-09@5X CH-AT-1RW193-0418 0.25453	02-May-18	20:54:33
6	180502M4_17	1800702-10@5X CH-AT-1FB193-0418 0.24305	02-May-18	21:06:00
7	180502M4_18	B8D0148-BS1 LFB 0.25	02-May-18	21:17:29
8	180502M4_19	B8D0148-BSD1 LFBD 0.25	02-May-18	21:28:59
9	180502M4_20	B8D0148-BLK1 LRB 0.25	02-May-18	21:40:29
10	180502M4_21	1800702-09RE1 CH-AT-1RW193-0418 0.25627	02-May-18	21:51:55
11	180502M4_22	1800702-10RE1 CH-AT-1FB193-0418 0.25575	02-May-18	22:03:24
12	180502M4_23	1800702-09RE1@5X CH-AT-1RW193-0418 0.2...	02-May-18	22:14:54
13	180502M4_24	1800702-10RE1@5X CH-AT-1FB193-0418 0.25...	02-May-18	22:26:21
14	180502M4_25	B8D0064-BS1 LFB 0.25	02-May-18	22:37:51
15	180502M4_26	B8D0064-BLK1 LRB 0.25	02-May-18	22:49:19
16	180502M4_27	1800625-01 FB01-0418 0.25462	02-May-18	23:00:48
17	180502M4_28	1800625-02 MW-18-0418 0.25052	02-May-18	23:12:18
18	180502M4_29	1800625-03 MW-32-0418 0.26043	02-May-18	23:23:47
19	180502M4_30	1800625-04 MW-19-0418 0.25939	02-May-18	23:35:16
20	180502M4_31	1800625-05 MW-11-0418 0.25818	02-May-18	23:46:46
21	180502M4_32	1800625-06 MW-30-0418 0.2575	02-May-18	23:58:13
22	180502M4_33	1800625-07 MW-29-0418 0.25858	03-May-18	00:09:42
23	180502M4_34	IPA	03-May-18	00:21:11
24	180502M4_35	ST180502M4-10 PFC CS2 537 18D1815	03-May-18	00:32:42
25	180502M4_36	IPA	03-May-18	00:44:12
26	180502M4_37	1800728-01 WI-A06-RW18-0418 0.25854	03-May-18	00:55:41
27	180502M4_38	1800728-02 WI-A06-RW18P-0418 0.25704	03-May-18	01:07:08
28	180502M4_39	1800728-03 WI-A06-FB18-0418 0.26707	03-May-18	01:18:38
29	180502M4_40	1800728-04 WI-A06-RW20-0418 0.25816	03-May-18	01:30:07
30	180502M4_41	1800728-05 WI-A06-FB20-0418 0.26849	03-May-18	01:41:36
31	180502M4_42	1800758-01 WI-AF-1RW57-0418 0.25788	03-May-18	01:53:06

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:07:15 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:08:53 Pacific Daylight Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	180502M4_43	1800758-02 WI-AF-1RW57P-0418 0.26832	03-May-18	02:04:32
33	180502M4_44	1800758-03 WI-AF-1FB57-0418 0.27106	03-May-18	02:16:02
34	180502M4_45	IPA	03-May-18	02:27:28
35	180502M4_46	ST180502M4-8 PFC CS4 537 18D1817	03-May-18	02:38:55
36	180502M4_47	IPA	03-May-18	02:50:25

AD 5/3/18

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:24:47 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:24:54 Pacific Daylight Time

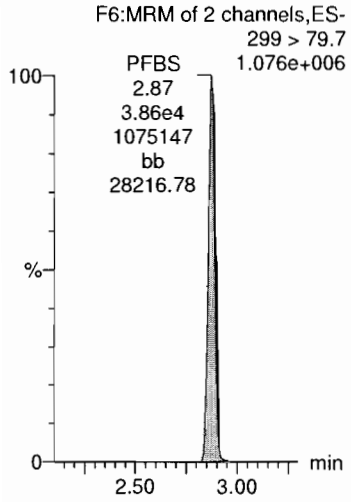
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

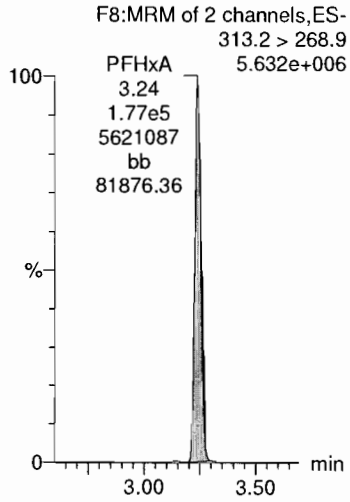
Name: 180502M4_46, Date: 03-May-2018, Time: 02:38:55, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

-11 AD 5/3/18

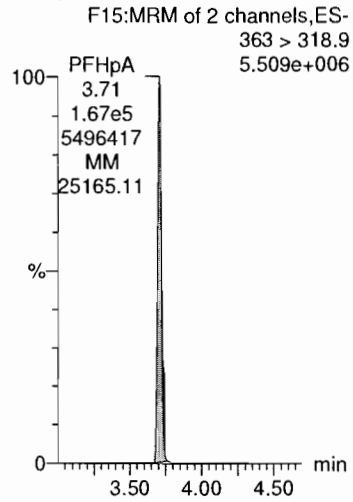
PFBS



PFHxA



PFHpA



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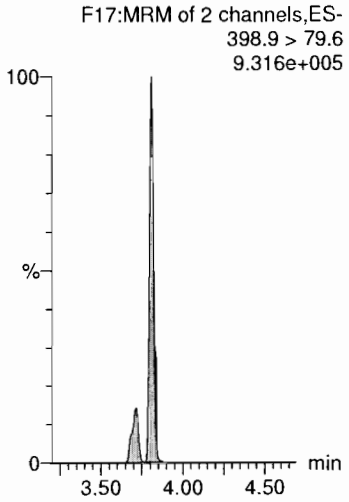

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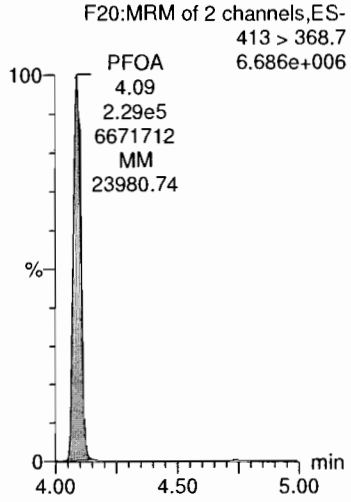
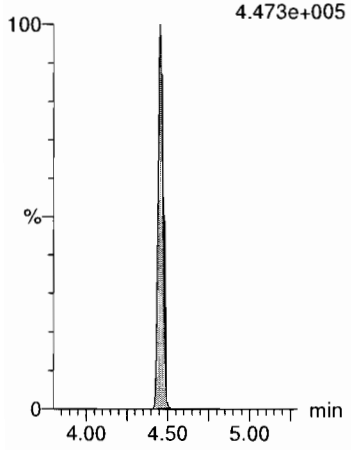


13C4-PFOS



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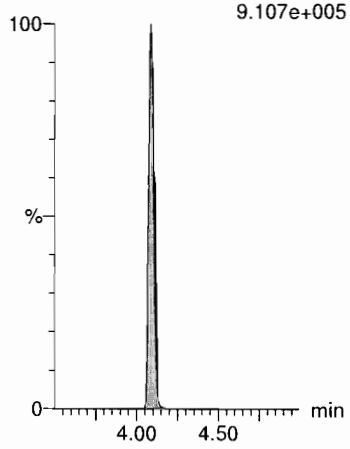

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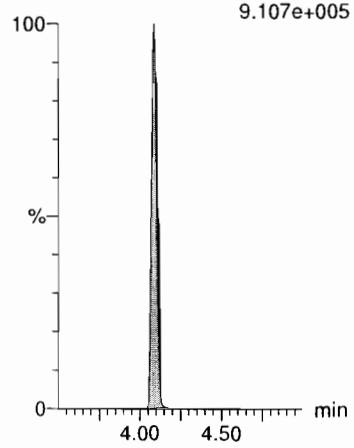

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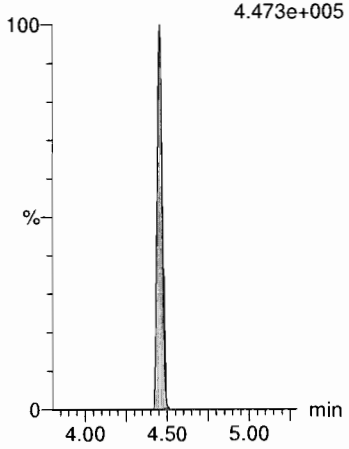

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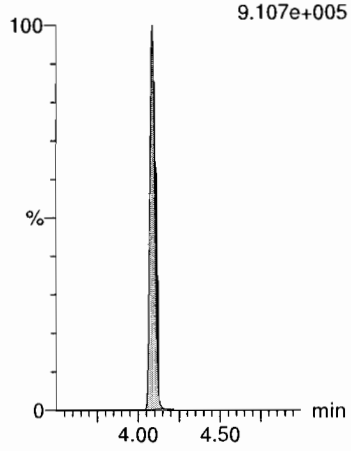

AR 5/3/2018

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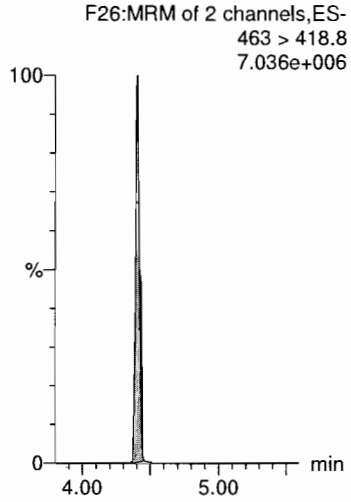
Last Altered: Thursday, May 03, 2018 12:24:47 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:24:54 Pacific Daylight Time

Name: 180502M4_46, Date: 03-May-2018, Time: 02:38:55, ID: ST180502M4-3 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

-11 AR 5/3/18

PFNA



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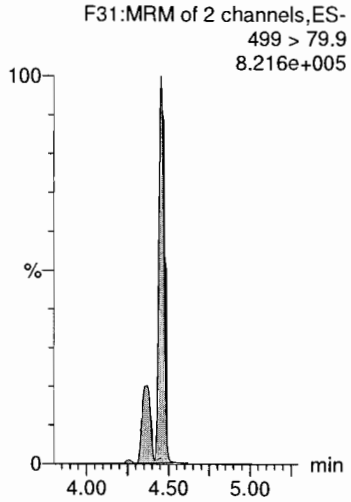

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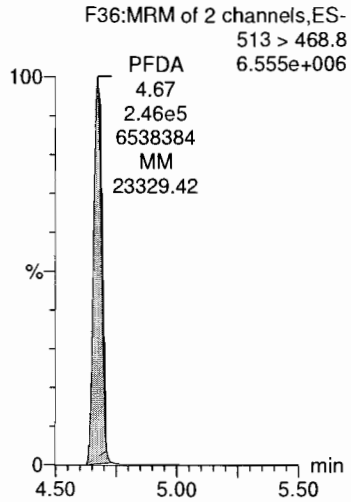
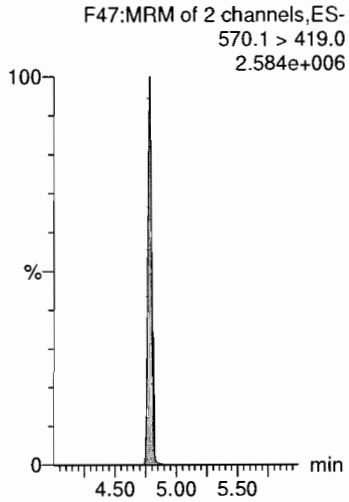


N-MeFOSAA



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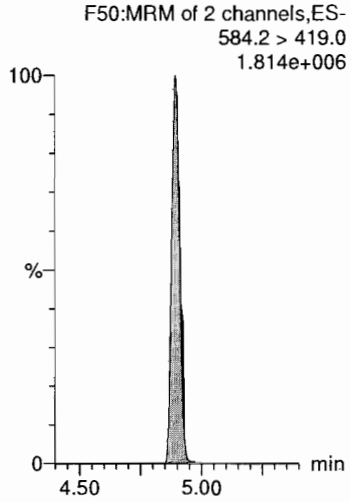

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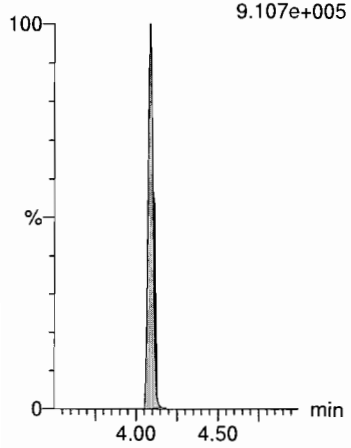

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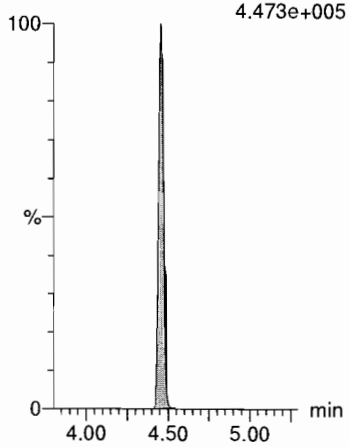

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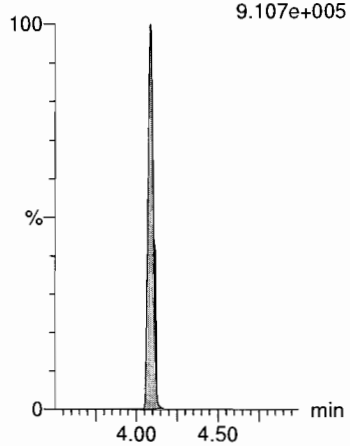

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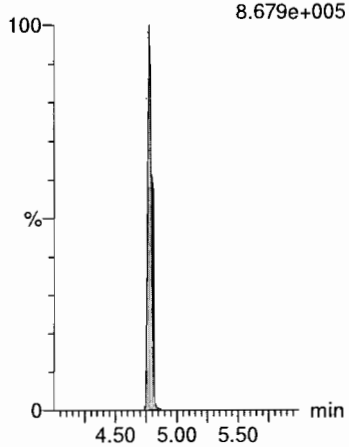
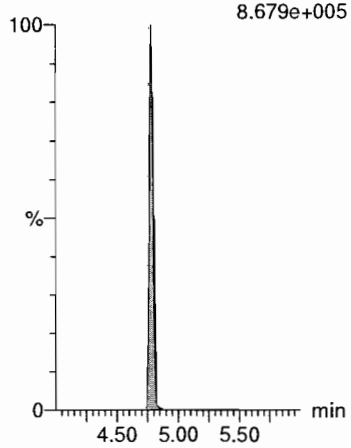


d3-N-MeFOSAA



AR 5/3/2018

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:24:47 Pacific Daylight Time
Printed: Thursday, May 03, 2018 12:24:54 Pacific Daylight Time

Name: 180502M4_46, Date: 03-May-2018, Time: 02:38:55, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

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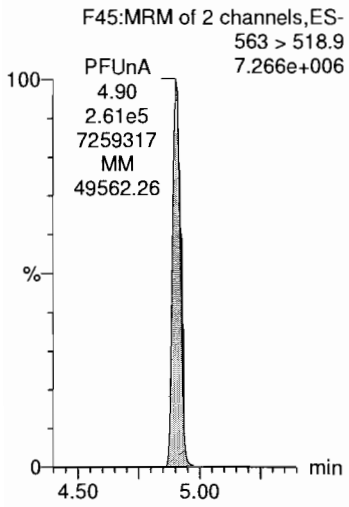
PFUnA



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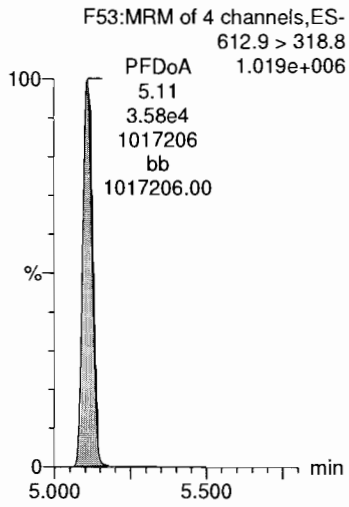

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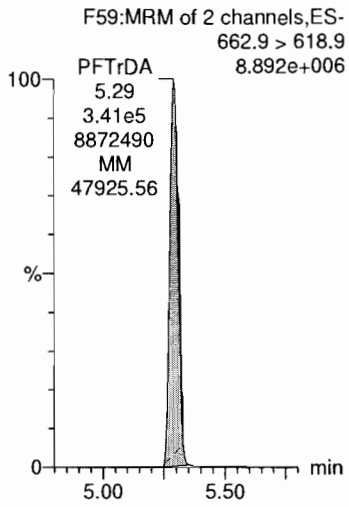
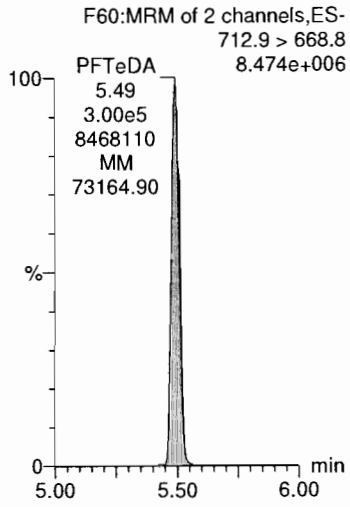


PFTeDA



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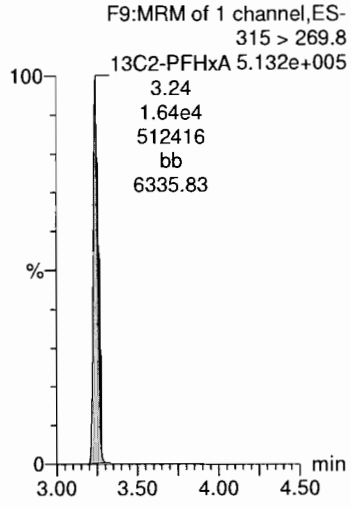

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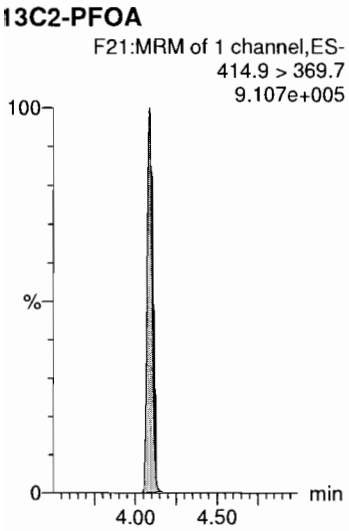

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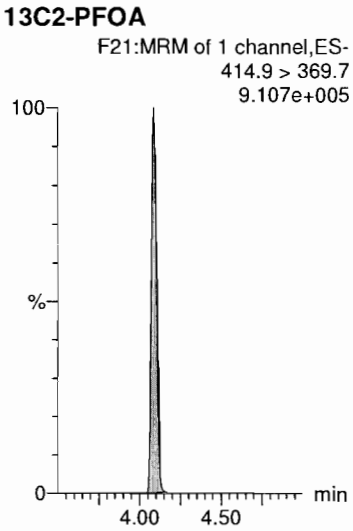

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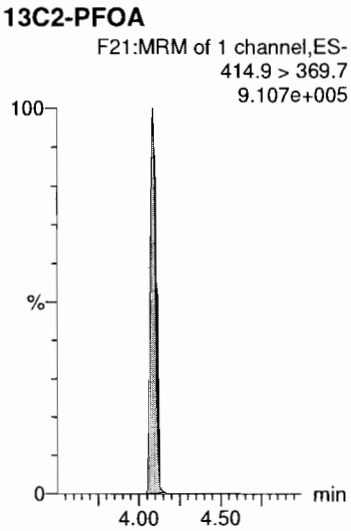

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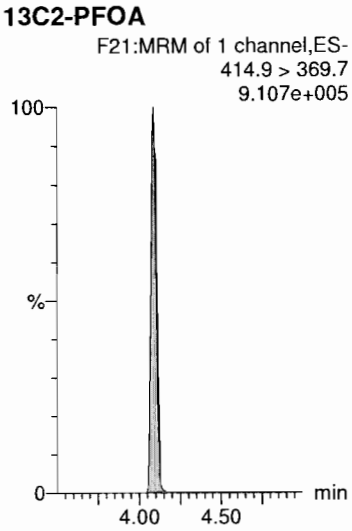

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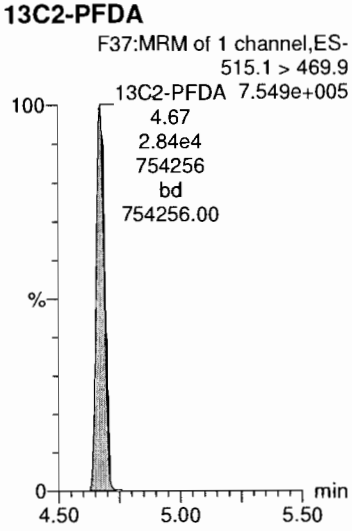

AR 5/3/2018

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 12:24:47 Pacific Daylight Time
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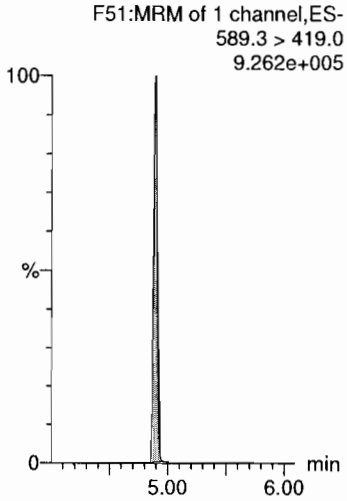
Name: 180502M4_46, Date: 03-May-2018, Time: 02:38:55, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

-11 AR 5/3/18

d5-N-EtFOSAA



AR 5/3/2018

INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

Quantify Compound Summary Report **MassLynx MassLynx V4.1 SCN 945**
Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:35:47 Pacific Daylight Time

HIGH POINT:
PFBS =75.0
PFHXS
PFOS
PFDA

LOW POINT:
PFHXA =1.0
PFHPA
PFOA
PFNA
PFDA
N-ETFOSAA
PFUNA
PFDOA
PFTRDA
PFTEDA

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

AD 5/3/18

Jam 5/3/18

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999384
Calibration curve: 1.08734 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.443	2.92	269.935	14846.628	0.522	0.5	8.5	NO	0.999	NO	bb
2	2	180502M4_3	Standard	0.885	2.92	526.548	14350.852	1.053	1.0	9.4	NO	0.999	NO	bb
3	3	180502M4_4	Standard	1.770	2.92	1025.382	14576.021	2.019	1.9	4.9	NO	0.999	NO	bb
4	4	180502M4_5	Standard	4.420	2.92	2313.471	13110.118	5.065	4.7	5.4	NO	0.999	NO	bb
5	5	180502M4_6	Standard	8.850	2.92	4976.235	14590.224	9.789	9.0	1.7	NO	0.999	NO	bb
6	6	180502M4_7	Standard	22.100	2.91	12828.166	14878.392	24.745	22.8	3.0	NO	0.999	NO	bb
7	7	180502M4_8	Standard	44.200	2.91	23575.678	14466.456	46.772	43.0	-2.7	NO	0.999	NO	bb
8	8	180502M4_9	Standard	66.300	2.91	37334.398	14879.066	72.014	66.2	-0.1	NO	0.999	NO	bb
9	9	180502M4_10	Standard	88.400	2.91	50801.750	16251.814	89.714	82.5	-6.7	NO	0.999	NO	bbX

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.996628
Calibration curve: 0.7014 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	3.29	1351.467	29110.195	0.464	0.7	32.4	NO	0.997	NO	bbX
2	2	180502M4_3	Standard	1.000	3.29	2732.840	30995.338	0.882	1.3	25.7	NO	0.997	NO	bb
3	3	180502M4_4	Standard	2.000	3.29	5031.838	35104.098	1.433	2.0	2.2	NO	0.997	NO	bb
4	4	180502M4_5	Standard	5.000	3.29	10604.765	30518.889	3.475	5.0	-0.9	NO	0.997	NO	bb
5	5	180502M4_6	Standard	10.000	3.28	24474.471	34469.715	7.100	10.1	1.2	NO	0.997	NO	bb
6	6	180502M4_7	Standard	25.000	3.28	60131.445	36486.152	16.481	23.5	-6.0	NO	0.997	NO	bb
7	7	180502M4_8	Standard	50.000	3.28	117860.922	33625.336	35.051	50.0	-0.1	NO	0.997	NO	bb
8	8	180502M4_9	Standard	75.000	3.28	172611.734	34984.234	49.340	70.3	-6.2	NO	0.997	NO	bb
9	9	180502M4_10	Standard	100.000	3.28	240763.359	32442.094	74.213	105.8	5.8	NO	0.997	NO	bb

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 10:40:19 Pacific Daylight Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.995907
Calibration curve: 0.695517 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	3.76	1062.117	29110.195	0.365	0.5	4.9	NO	0.996	NO	MMX
2	2	180502M4_3	Standard	1.000	3.76	2953.878	30995.338	0.953	1.4	37.0	NO	0.996	NO	MM
3	3	180502M4_4	Standard	2.000	3.76	4477.689	35104.098	1.276	1.8	-8.3	NO	0.996	NO	MM
4	4	180502M4_5	Standard	5.000	3.75	9526.157	30518.889	3.121	4.5	-10.2	NO	0.996	NO	MM
5	5	180502M4_6	Standard	10.000	3.75	23729.406	34469.715	6.884	9.9	-1.0	NO	0.996	NO	MM
6	6	180502M4_7	Standard	25.000	3.75	57383.840	36486.152	15.728	22.6	-9.5	NO	0.996	NO	MM
7	7	180502M4_8	Standard	50.000	3.75	113276.648	33625.336	33.688	48.4	-3.1	NO	0.996	NO	MM
8	8	180502M4_9	Standard	75.000	3.75	177365.188	34984.234	50.699	72.9	-2.8	NO	0.996	NO	MM
9	9	180502M4_10	Standard	100.000	3.75	240235.156	32442.094	74.050	106.5	6.5	NO	0.996	NO	MM

Compound name: PFHxS
Coefficient of Determination: R^2 = 0.999297
Calibration curve: 0.946984 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.455	3.86	211.662	14846.628	0.409	0.4	-5.0	NO	0.999	NO	MM
2	2	180502M4_3	Standard	0.910	3.86	445.433	14350.852	0.891	0.9	3.4	NO	0.999	NO	MM
3	3	180502M4_4	Standard	1.820	3.86	829.500	14576.021	1.633	1.7	-5.2	NO	0.999	NO	MM
4	4	180502M4_5	Standard	4.560	3.86	2038.503	13110.118	4.463	4.7	3.3	NO	0.999	NO	MM
5	5	180502M4_6	Standard	9.120	3.85	4524.130	14590.224	8.899	9.4	3.0	NO	0.999	NO	MM
6	6	180502M4_7	Standard	22.800	3.85	10713.922	14878.392	20.667	21.8	-4.3	NO	0.999	NO	MM
7	7	180502M4_8	Standard	45.600	3.85	21443.352	14466.456	42.541	44.9	-1.5	NO	0.999	NO	MM
8	8	180502M4_9	Standard	68.400	3.85	34224.398	14879.066	66.015	69.7	1.9	NO	0.999	NO	MM
9	9	180502M4_10	Standard	91.200	3.85	45630.387	16251.814	80.581	85.1	-6.7	NO	0.999	NO	MMX

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 10:40:19 Pacific Daylight Time

Compound name: PFOA
Coefficient of Determination: R^2 = 0.997242
Calibration curve: 0.912025 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	4.14	1265.722	29110.195	0.435	0.5	-4.7	NO	0.997	NO	MMX
2	2	180502M4_3	Standard	1.000	4.14	3998.962	30995.338	1.290	1.4	41.5	NO	0.997	NO	MM
3	3	180502M4_4	Standard	2.000	4.14	5599.621	35104.098	1.595	1.7	-12.5	NO	0.997	NO	MM
4	4	180502M4_5	Standard	5.000	4.14	14562.449	30518.889	4.772	5.2	4.6	NO	0.997	NO	MM
5	5	180502M4_6	Standard	10.000	4.14	25879.254	34469.715	7.508	8.2	-17.7	NO	0.997	NO	MM
6	6	180502M4_7	Standard	25.000	4.14	87510.953	36486.152	23.985	26.3	5.2	NO	0.997	NO	MM
7	7	180502M4_8	Standard	50.000	4.13	149216.781	33625.336	44.376	48.7	-2.7	NO	0.997	NO	MM
8	8	180502M4_9	Standard	75.000	4.13	240649.703	34984.234	68.788	75.4	0.6	NO	0.997	NO	MM
9	9	180502M4_10	Standard	100.000	4.13	298820.938	32442.094	92.109	101.0	1.0	NO	0.997	NO	MM

Compound name: PFNA
Coefficient of Determination: R^2 = 0.995986
Calibration curve: 0.966029 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	4.45	1752.210	29110.195	0.602	0.6	24.6	NO	0.996	NO	MMX
2	2	180502M4_3	Standard	1.000	4.45	3743.488	30995.338	1.208	1.3	25.0	NO	0.996	NO	MM
3	3	180502M4_4	Standard	2.000	4.45	6577.037	35104.098	1.874	1.9	-3.0	NO	0.996	NO	MM
4	4	180502M4_5	Standard	5.000	4.45	14272.491	30518.889	4.677	4.8	-3.2	NO	0.996	NO	MM
5	5	180502M4_6	Standard	10.000	4.45	37785.926	34469.715	10.962	11.3	13.5	NO	0.996	NO	MM
6	6	180502M4_7	Standard	25.000	4.45	78707.742	36486.152	21.572	22.3	-10.7	NO	0.996	NO	MM
7	7	180502M4_8	Standard	50.000	4.45	154290.234	33625.336	45.885	47.5	-5.0	NO	0.996	NO	MM
8	8	180502M4_9	Standard	75.000	4.44	249249.125	34984.234	71.246	73.8	-1.7	NO	0.996	NO	MM
9	9	180502M4_10	Standard	100.000	4.44	329198.594	32442.094	101.473	105.0	5.0	NO	0.996	NO	MM

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Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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Compound name: PFOS
Coefficient of Determination: R^2 = 0.997337
Calibration curve: 1.11321 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	0.464	4.51	202.859	14846.628	0.392	0.4	-24.1	NO	0.997	NO	MM
2	2 180502M4_3	Standard	0.925	4.50	440.510	14350.852	0.881	0.8	-14.4	NO	0.997	NO	MM
3	3 180502M4_4	Standard	1.850	4.50	998.744	14576.021	1.967	1.8	-4.5	NO	0.997	NO	MM
4	4 180502M4_5	Standard	4.625	4.50	2798.390	13110.118	6.126	5.5	19.0	NO	0.997	NO	MM
5	5 180502M4_6	Standard	9.250	4.50	5212.070	14590.224	10.253	9.2	-0.4	NO	0.997	NO	MM
6	6 180502M4_7	Standard	23.100	4.50	12379.973	14878.392	23.881	21.5	-7.1	NO	0.997	NO	MM
7	7 180502M4_8	Standard	46.200	4.50	26708.953	14466.456	52.988	47.6	3.0	NO	0.997	NO	MM
8	8 180502M4_9	Standard	69.300	4.50	39844.559	14879.066	76.856	69.0	-0.4	NO	0.997	NO	MM
9	9 180502M4_10	Standard	92.400	4.50	53393.332	16251.814	94.290	84.7	-8.3	NO	0.997	NO	MMX

Compound name: PFDA
Coefficient of Determination: R^2 = 0.997763
Calibration curve: -0.00285672 * x^2 + 1.19829 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	0.500	4.72	1777.731	29110.195	0.611	0.5	2.1	NO	0.998	NO	MMX
2	2 180502M4_3	Standard	1.000	4.72	4256.525	30995.338	1.373	1.1	14.9	NO	0.998	NO	MM
3	3 180502M4_4	Standard	2.000	4.72	7189.698	35104.098	2.048	1.7	-14.2	NO	0.998	NO	MM
4	4 180502M4_5	Standard	5.000	4.72	19403.072	30518.889	6.358	5.4	7.5	NO	0.998	NO	MM
5	5 180502M4_6	Standard	10.000	4.72	39675.789	34469.715	11.510	9.8	-1.6	NO	0.998	NO	MM
6	6 180502M4_7	Standard	25.000	4.72	97853.086	36486.152	26.819	23.7	-5.1	NO	0.998	NO	MM
7	7 180502M4_8	Standard	50.000	4.72	185600.672	33625.336	55.197	52.7	5.4	NO	0.998	NO	MM
8	8 180502M4_9	Standard	75.000	4.72	254127.297	34984.234	72.641	73.5	-2.0	NO	0.998	NO	MM
9	9 180502M4_10	Standard	100.000	4.71	382603.438	32442.094	117.934	157.7	57.7	NO	0.998	NO	MMX

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Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
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Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.998968
Calibration curve: -0.000768073 * x^2 + 1.56852 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	0.500	4.83	447.433	29375.826	0.609	0.4	-22.3	NO	0.999	NO	MM
2	2 180502M4_3	Standard	1.000	4.83	1429.297	29370.715	1.947	1.2	24.2	NO	0.999	NO	MM
3	3 180502M4_4	Standard	2.000	4.83	2100.412	31016.135	2.709	1.7	-13.6	NO	0.999	NO	MM
4	4 180502M4_5	Standard	5.000	4.83	5215.281	27378.705	7.619	4.9	-2.6	NO	0.999	NO	MM
5	5 180502M4_6	Standard	10.000	4.83	11310.131	31139.033	14.529	9.3	-7.0	NO	0.999	NO	MM
6	6 180502M4_7	Standard	25.000	4.82	28806.207	28274.086	40.753	26.3	5.3	NO	0.999	NO	MM
7	7 180502M4_8	Standard	50.000	4.82	58690.855	30689.188	76.497	50.0	-0.0	NO	0.999	NO	MM
8	8 180502M4_9	Standard	75.000	4.82	82698.391	29325.336	112.801	74.6	-0.5	NO	0.999	NO	MM
9	9 180502M4_10	Standard	100.000	4.82	113798.469	30512.551	149.183	100.0	0.0	NO	0.999	NO	MM

Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.998532
Calibration curve: 1.15097 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	0.500	4.95	455.555	29375.826	0.620	0.5	7.8	NO	0.999	NO	MMX
2	2 180502M4_3	Standard	1.000	4.95	1140.096	29370.715	1.553	1.3	34.9	NO	0.999	NO	MM
3	3 180502M4_4	Standard	2.000	4.94	1617.904	31016.135	2.087	1.8	-9.4	NO	0.999	NO	MM
4	4 180502M4_5	Standard	5.000	4.94	3925.752	27378.705	5.735	5.0	-0.3	NO	0.999	NO	MM
5	5 180502M4_6	Standard	10.000	4.94	9462.757	31139.033	12.155	10.6	5.6	NO	0.999	NO	MM
6	6 180502M4_7	Standard	25.000	4.94	21707.463	28274.086	30.710	26.7	6.7	NO	0.999	NO	MM
7	7 180502M4_8	Standard	50.000	4.94	43269.652	30689.188	56.397	49.0	-2.0	NO	0.999	NO	MM
8	8 180502M4_9	Standard	75.000	4.94	63652.527	29325.336	86.823	75.4	0.6	NO	0.999	NO	MM
9	9 180502M4_10	Standard	100.000	4.93	86197.813	30512.551	113.000	98.2	-1.8	NO	0.999	NO	MM

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Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
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Compound name: PFUnA
Coefficient of Determination: R^2 = 0.991760
Calibration curve: 1.05646 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	4.95	1775.402	29110.195	0.610	0.6	15.5	NO	0.992	NO	MMX
2	2	180502M4_3	Standard	1.000	4.96	3799.674	30995.338	1.226	1.2	16.0	NO	0.992	NO	MM
3	3	180502M4_4	Standard	2.000	4.96	6182.767	35104.098	1.761	1.7	-16.6	NO	0.992	NO	MM
4	4	180502M4_5	Standard	5.000	4.95	12768.961	30518.889	4.184	4.0	-20.8	NO	0.992	NO	MM
5	5	180502M4_6	Standard	10.000	4.95	42340.199	34469.715	12.283	11.6	16.3	NO	0.992	NO	MM
6	6	180502M4_7	Standard	25.000	4.95	89860.219	36486.152	24.629	23.3	-6.8	NO	0.992	NO	MM
7	7	180502M4_8	Standard	50.000	4.95	154539.234	33625.336	45.959	43.5	-13.0	NO	0.992	NO	MM
8	8	180502M4_9	Standard	75.000	4.95	282209.844	34984.234	80.668	76.4	1.8	NO	0.992	NO	MM
9	9	180502M4_10	Standard	100.000	4.95	364722.375	32442.094	112.423	106.4	6.4	NO	0.992	NO	MM

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.997324
Calibration curve: 0.151773 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	5.15	343.349	29110.195	0.118	0.8	55.4	NO	0.997	NO	bbX
2	2	180502M4_3	Standard	1.000	5.16	591.041	30995.338	0.191	1.3	25.6	NO	0.997	NO	bb
3	3	180502M4_4	Standard	2.000	5.16	1147.978	35104.098	0.327	2.2	7.7	NO	0.997	NO	bb
4	4	180502M4_5	Standard	5.000	5.15	2457.108	30518.889	0.805	5.3	6.1	NO	0.997	NO	bb
5	5	180502M4_6	Standard	10.000	5.15	5536.253	34469.715	1.606	10.6	5.8	NO	0.997	NO	bb
6	6	180502M4_7	Standard	25.000	5.15	12724.030	36486.152	3.487	23.0	-8.1	NO	0.997	NO	bb
7	7	180502M4_8	Standard	50.000	5.15	27404.182	33625.336	8.150	53.7	7.4	NO	0.997	NO	bb
8	8	180502M4_9	Standard	75.000	5.15	39070.668	34984.234	11.168	73.6	-1.9	NO	0.997	NO	bb
9	9	180502M4_10	Standard	100.000	5.14	48471.387	32442.094	14.941	98.4	-1.6	NO	0.997	NO	bb

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Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
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Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.994392
Calibration curve: 1.44353 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	5.35	2657.109	29110.195	0.913	0.6	26.5	NO	0.994	NO	MMX
2	2	180502M4_3	Standard	1.000	5.35	5432.261	30995.338	1.753	1.2	21.4	NO	0.994	NO	MM
3	3	180502M4_4	Standard	2.000	5.34	9844.805	35104.098	2.804	1.9	-2.9	NO	0.994	NO	MM
4	4	180502M4_5	Standard	5.000	5.34	24365.830	30518.889	7.984	5.5	10.6	NO	0.994	NO	MM
5	5	180502M4_6	Standard	10.000	5.34	53688.512	34469.715	15.576	10.8	7.9	NO	0.994	NO	MM
6	6	180502M4_7	Standard	25.000	5.34	107822.117	36486.152	29.552	20.5	-18.1	NO	0.994	NO	MM
7	7	180502M4_8	Standard	50.000	5.34	242287.375	33625.336	72.055	49.9	-0.2	NO	0.994	NO	MM
8	8	180502M4_9	Standard	75.000	5.34	368464.656	34984.234	105.323	73.0	-2.7	NO	0.994	NO	MM
9	9	180502M4_10	Standard	100.000	5.34	492531.844	32442.094	151.819	105.2	5.2	NO	0.994	NO	MM

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998778
Calibration curve: 1.2121 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	0.500	5.56	2036.021	29110.195	0.699	0.6	15.4	NO	0.999	NO	MMX
2	2	180502M4_3	Standard	1.000	5.56	4368.249	30995.338	1.409	1.2	16.3	NO	0.999	NO	MM
3	3	180502M4_4	Standard	2.000	5.56	8679.872	35104.098	2.473	2.0	2.0	NO	0.999	NO	MM
4	4	180502M4_5	Standard	5.000	5.56	19466.125	30518.889	6.378	5.3	5.2	NO	0.999	NO	MM
5	5	180502M4_6	Standard	10.000	5.56	40372.738	34469.715	11.713	9.7	-3.4	NO	0.999	NO	MM
6	6	180502M4_7	Standard	25.000	5.55	105724.539	36486.152	28.977	23.9	-4.4	NO	0.999	NO	MM
7	7	180502M4_8	Standard	50.000	5.55	207835.391	33625.336	61.809	51.0	2.0	NO	0.999	NO	MM
8	8	180502M4_9	Standard	75.000	5.55	306720.156	34984.234	87.674	72.3	-3.6	NO	0.999	NO	MM
9	9	180502M4_10	Standard	100.000	5.55	403612.781	32442.094	124.410	102.6	2.6	NO	0.999	NO	MM

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Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
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Compound name: 13C2-PFHxA
Response Factor: 0.505627
RRF SD: 0.0247939, Relative SD: 4.9036
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	10.000	3.29	16093.529	29110.195	5.528	10.9	9.3	NO		NO	bb
2	2	180502M4_3	Standard	10.000	3.29	16225.864	30995.338	5.235	10.4	3.5	NO		NO	bb
3	3	180502M4_4	Standard	10.000	3.29	17075.445	35104.098	4.864	9.6	-3.8	NO		NO	bb
4	4	180502M4_5	Standard	10.000	3.29	15626.155	30518.889	5.120	10.1	1.3	NO		NO	bb
5	5	180502M4_6	Standard	10.000	3.28	17198.123	34469.715	4.989	9.9	-1.3	NO		NO	bd
6	6	180502M4_7	Standard	10.000	3.28	17178.785	36486.152	4.708	9.3	-6.9	NO		NO	bb
7	7	180502M4_8	Standard	10.000	3.28	17262.492	33625.336	5.134	10.2	1.5	NO		NO	bb
8	8	180502M4_9	Standard	10.000	3.28	16827.453	34984.234	4.810	9.5	-4.9	NO		NO	bb
9	9	180502M4_10	Standard	10.000	3.28	16601.164	32442.094	5.117	10.1	1.2	NO		NO	bb

Compound name: 13C2-PFDA
Response Factor: 0.809995
RRF SD: 0.102222, Relative SD: 12.6201
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	10.000	4.72	26527.516	29110.195	9.113	11.3	12.5	NO		NO	bd
2	2	180502M4_3	Standard	10.000	4.72	27580.605	30995.338	8.898	11.0	9.9	NO		NO	bb
3	3	180502M4_4	Standard	10.000	4.72	22732.613	35104.098	6.476	8.0	-20.1	NO		NO	bb
4	4	180502M4_5	Standard	10.000	4.72	28862.715	30518.889	9.457	11.7	16.8	NO		NO	bb
5	5	180502M4_6	Standard	10.000	4.72	28691.727	34469.715	8.324	10.3	2.8	NO		NO	bb
6	6	180502M4_7	Standard	10.000	4.72	28340.039	36486.152	7.767	9.6	-4.1	NO		NO	bb
7	7	180502M4_8	Standard	10.000	4.72	22463.975	33625.336	6.681	8.2	-17.5	NO		NO	bb
8	8	180502M4_9	Standard	10.000	4.72	27809.697	34984.234	7.949	9.8	-1.9	NO		NO	bb
9	9	180502M4_10	Standard	10.000	4.71	26714.135	32442.094	8.234	10.2	1.7	NO		NO	bb

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Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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Compound name: d5-N-EtFOSAA
Response Factor: 1.11871
RRF SD: 0.0448716, Relative SD: 4.01102
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	40.000	4.94	31980.510	29375.826	43.547	38.9	-2.7	NO		NO	bb
2	2 180502M4_3	Standard	40.000	4.94	33563.949	29370.715	45.711	40.9	2.2	NO		NO	bb
3	3 180502M4_4	Standard	40.000	4.94	34334.824	31016.135	44.280	39.6	-1.0	NO		NO	bb
4	4 180502M4_5	Standard	40.000	4.94	30614.246	27378.705	44.727	40.0	-0.0	NO		NO	bb
5	5 180502M4_6	Standard	40.000	4.94	34697.156	31139.033	44.571	39.8	-0.4	NO		NO	bb
6	6 180502M4_7	Standard	40.000	4.94	34368.875	28274.086	48.622	43.5	8.7	NO		NO	bb
7	7 180502M4_8	Standard	40.000	4.93	32746.225	30689.188	42.681	38.2	-4.6	NO		NO	bb
8	8 180502M4_9	Standard	40.000	4.93	33440.816	29325.336	45.614	40.8	1.9	NO		NO	bb
9	9 180502M4_10	Standard	40.000	4.93	32787.250	30512.551	42.982	38.4	-3.9	NO		NO	bb

Compound name: 13C2-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180502M4_2	Standard	10.000	4.14	29110.195	29110.195	10.000	10.0	0.0	NO		NO	bbX
2	2 180502M4_3	Standard	10.000	4.14	30995.338	30995.338	10.000	10.0	0.0	NO		NO	bb
3	3 180502M4_4	Standard	10.000	4.14	35104.098	35104.098	10.000	10.0	0.0	NO		NO	bb
4	4 180502M4_5	Standard	10.000	4.14	30518.889	30518.889	10.000	10.0	0.0	NO		NO	bb
5	5 180502M4_6	Standard	10.000	4.14	34469.715	34469.715	10.000	10.0	0.0	NO		NO	bb
6	6 180502M4_7	Standard	10.000	4.13	36486.152	36486.152	10.000	10.0	0.0	NO		NO	bb
7	7 180502M4_8	Standard	10.000	4.13	33625.336	33625.336	10.000	10.0	0.0	NO		NO	bb
8	8 180502M4_9	Standard	10.000	4.13	34984.234	34984.234	10.000	10.0	0.0	NO		NO	bb
9	9 180502M4_10	Standard	10.000	4.13	32442.094	32442.094	10.000	10.0	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 10:40:19 Pacific Daylight Time

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	28.700	4.50	14846.628	14846.628	28.700	28.7	0.0	NO		NO	bb
2	2	180502M4_3	Standard	28.700	4.50	14350.852	14350.852	28.700	28.7	0.0	NO		NO	bb
3	3	180502M4_4	Standard	28.700	4.50	14576.021	14576.021	28.700	28.7	0.0	NO		NO	bb
4	4	180502M4_5	Standard	28.700	4.50	13110.118	13110.118	28.700	28.7	0.0	NO		NO	bb
5	5	180502M4_6	Standard	28.700	4.50	14590.224	14590.224	28.700	28.7	0.0	NO		NO	bb
6	6	180502M4_7	Standard	28.700	4.50	14878.392	14878.392	28.700	28.7	0.0	NO		NO	bb
7	7	180502M4_8	Standard	28.700	4.50	14466.456	14466.456	28.700	28.7	0.0	NO		NO	bb
8	8	180502M4_9	Standard	28.700	4.50	14879.066	14879.066	28.700	28.7	0.0	NO		NO	bd
9	9	180502M4_10	Standard	28.700	4.49	16251.814	16251.814	28.700	28.7	0.0	NO		NO	bbX

Compound name: d3-N-MeFOSAA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180502M4_2	Standard	40.000	4.83	29375.826	29375.826	40.000	40.0	0.0	NO		NO	bb
2	2	180502M4_3	Standard	40.000	4.83	29370.715	29370.715	40.000	40.0	0.0	NO		NO	bb
3	3	180502M4_4	Standard	40.000	4.83	31016.135	31016.135	40.000	40.0	0.0	NO		NO	bb
4	4	180502M4_5	Standard	40.000	4.82	27378.705	27378.705	40.000	40.0	0.0	NO		NO	bb
5	5	180502M4_6	Standard	40.000	4.82	31139.033	31139.033	40.000	40.0	0.0	NO		NO	bb
6	6	180502M4_7	Standard	40.000	4.82	28274.086	28274.086	40.000	40.0	0.0	NO		NO	bb
7	7	180502M4_8	Standard	40.000	4.82	30689.188	30689.188	40.000	40.0	0.0	NO		NO	bb
8	8	180502M4_9	Standard	40.000	4.82	29325.336	29325.336	40.000	40.0	0.0	NO		NO	bb
9	9	180502M4_10	Standard	40.000	4.82	30512.551	30512.551	40.000	40.0	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:34:15 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AO 5/3/18

Name: 180502M4_2, Date: 02-May-2018, Time: 18:13:53, ID: ST180502M4-1 PFC CS-3 537 18D1810, Description: PFC CS-3 18D1810

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBS	19	0.9994	NO	
2	2	PFHxA	18	0.9966	NO	
3	3	PFHpA	18	0.9959	NO	
4	4	PFHxS	19	0.9993	NO	
5	5	PFOA	18	0.9972	NO	
6	6	PFNA	18	0.9960	NO	
7	7	PFOS	19	0.9973	NO	
8	8	PFDA	18	0.9978	NO	
9	9	N-MeFOSAA	20	0.9990	NO	
10	10	N-EtFOSAA	20	0.9985	NO	
11	11	PFUnA	18	0.9918	NO	
12	12	PFDoA	18	0.9973	NO	
13	13	PFTrDA	18	0.9944	NO	
14	14	PFTeDA	18	0.9988	NO	
15	15	13C2-PFHxA	18		NO	4.904
16	16	13C2-PFDA	18		NO	12.620
17	17	d5-N-EtFOSAA	20		NO	4.011
18	18	13C2-PFOA	18		NO	0.000
19	19	13C4-PFOS	19		NO	0.000
20	20	d3-N-MeFOSAA	20		NO	0.000

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, May 03, 2018 11:03:51 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:04:57 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 10:03:21

2 AD 5/3/18

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	180502M4_1	IPA	02-May-18	18:02:28
2	180502M4_2	ST180502M4-1 PFC CS-3 537 18D1810	02-May-18	18:13:53
3	180502M4_3	ST180502M4-2 PFC CS-2 537 18D1811	02-May-18	18:25:20
4	180502M4_4	ST180502M4-3 PFC CS-1 537 18D1812	02-May-18	18:36:47
5	180502M4_5	ST180502M4-4 PFC CS0 537 18D1813	02-May-18	18:48:14
6	180502M4_6	ST180502M4-5 PFC CS1 537 18D1814	02-May-18	18:59:43
7	180502M4_7	ST180502M4-6 PFC CS2 537 18D2412	02-May-18	19:11:13
8	180502M4_8	ST180502M4-7 PFC CS3 537 18D1816	02-May-18	19:22:43
9	180502M4_9	ST180502M4-8 PFC CS4 537 18D1817	02-May-18	19:34:10
10	180502M4_10	ST180502M4-9 PFC CS5 537 18D1818	02-May-18	19:45:39
11	180502M4_11	IPA	02-May-18	19:57:08
12	180502M4_12	ICV180502M4-1 PFC 537 ICV 18D2007	02-May-18	20:08:38
13	180502M4_13	IPA	02-May-18	20:20:06

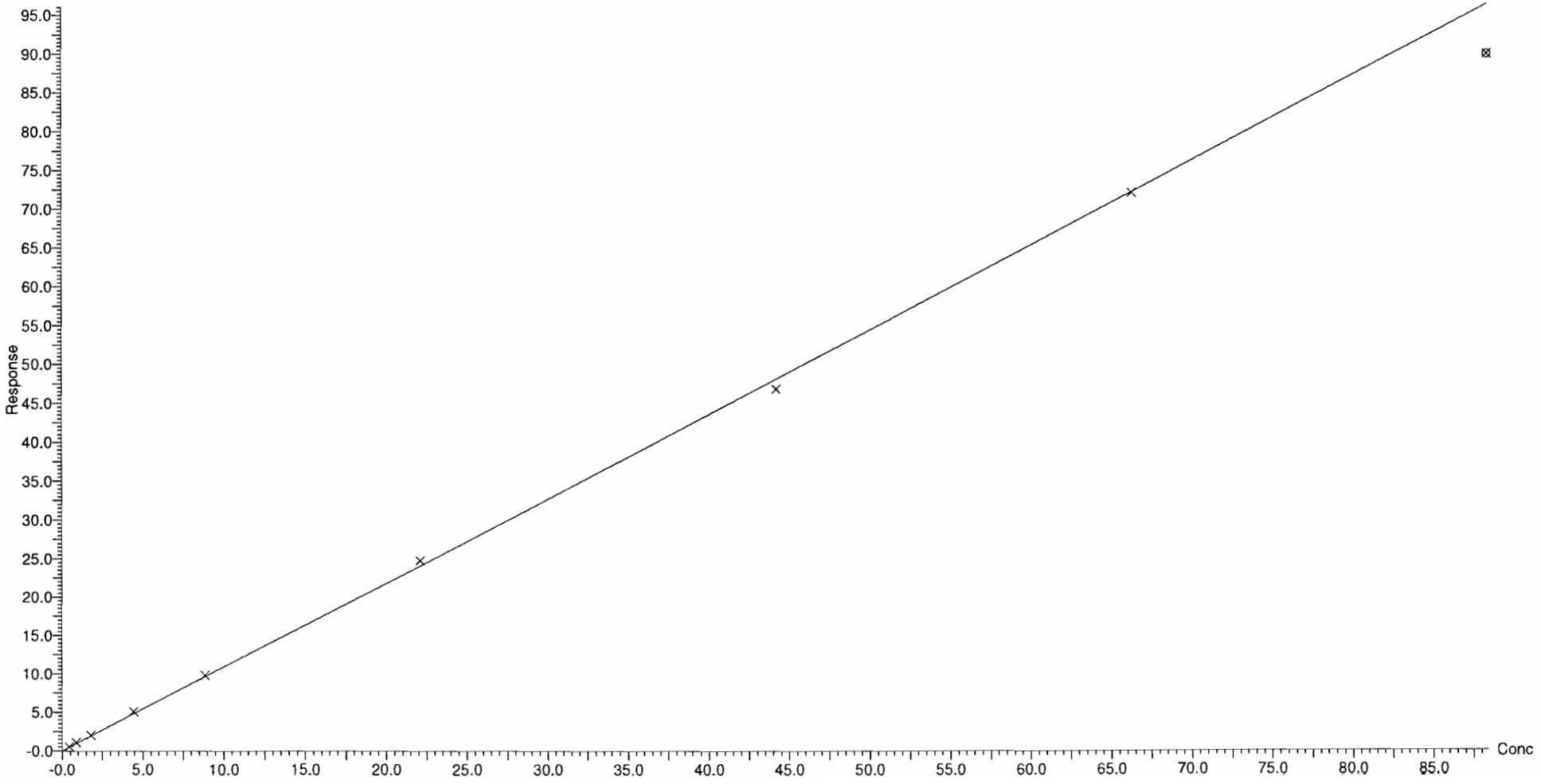
Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0408.mdb 08 Apr 2018 13:44:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 10:03:21

2 AM 5/3/18

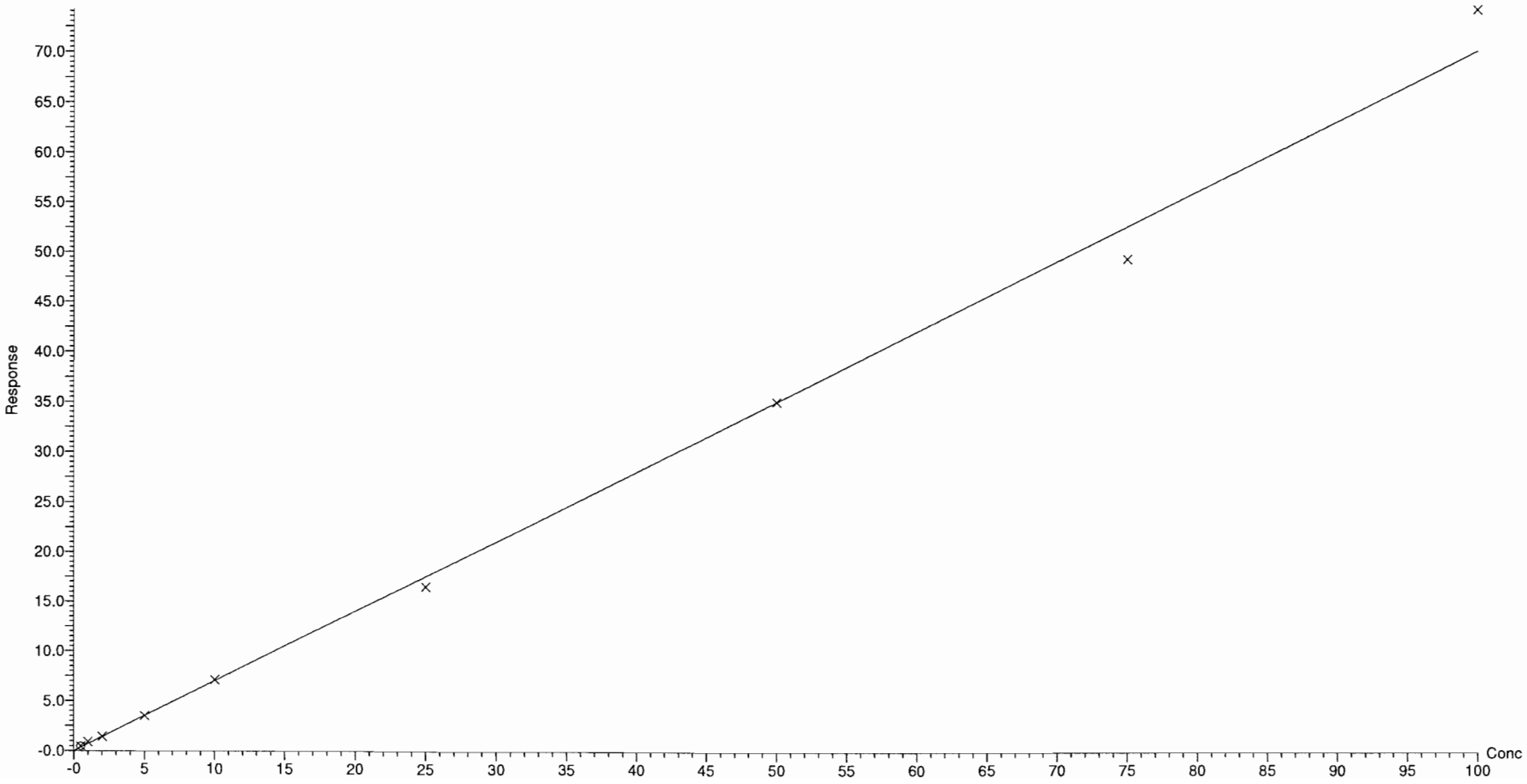
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999384
Calibration curve: 1.08734 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

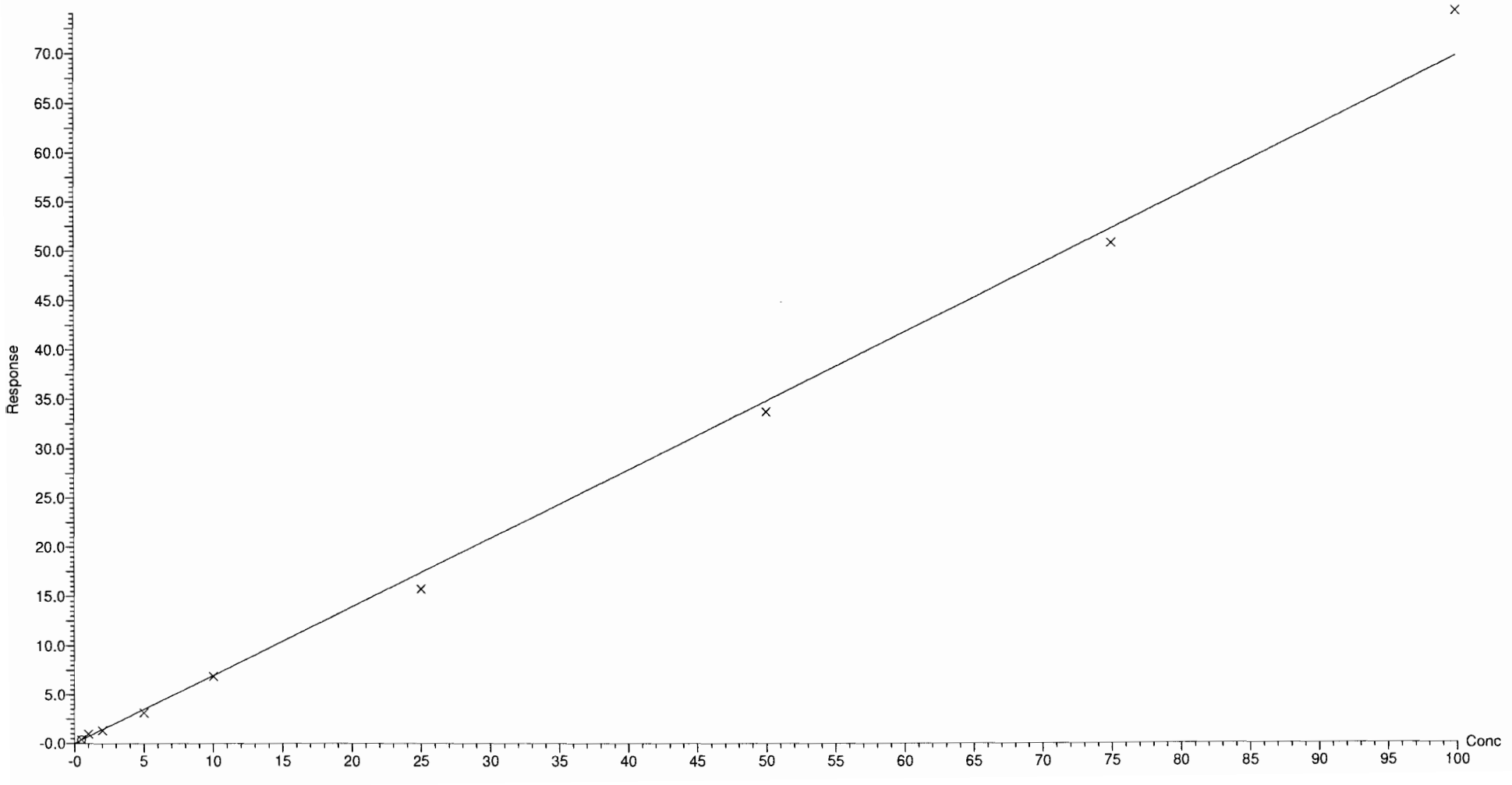
Compound name: PFHxA
Coefficient of Determination: R^2 = 0.996628
Calibration curve: 0.7014 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

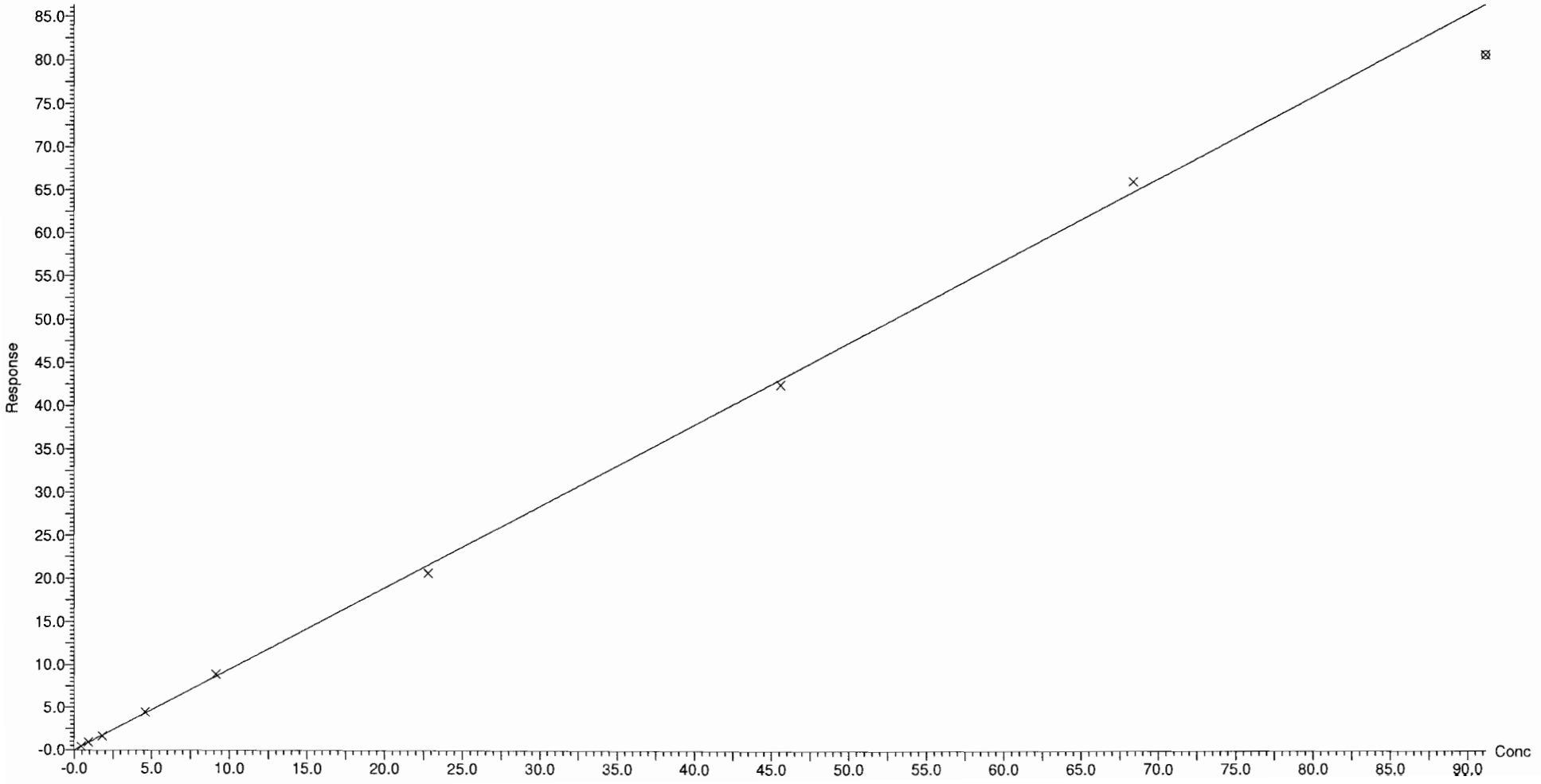
Compound name: PFHpA
Coefficient of Determination: R^2 = 0.995907
Calibration curve: 0.695517 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

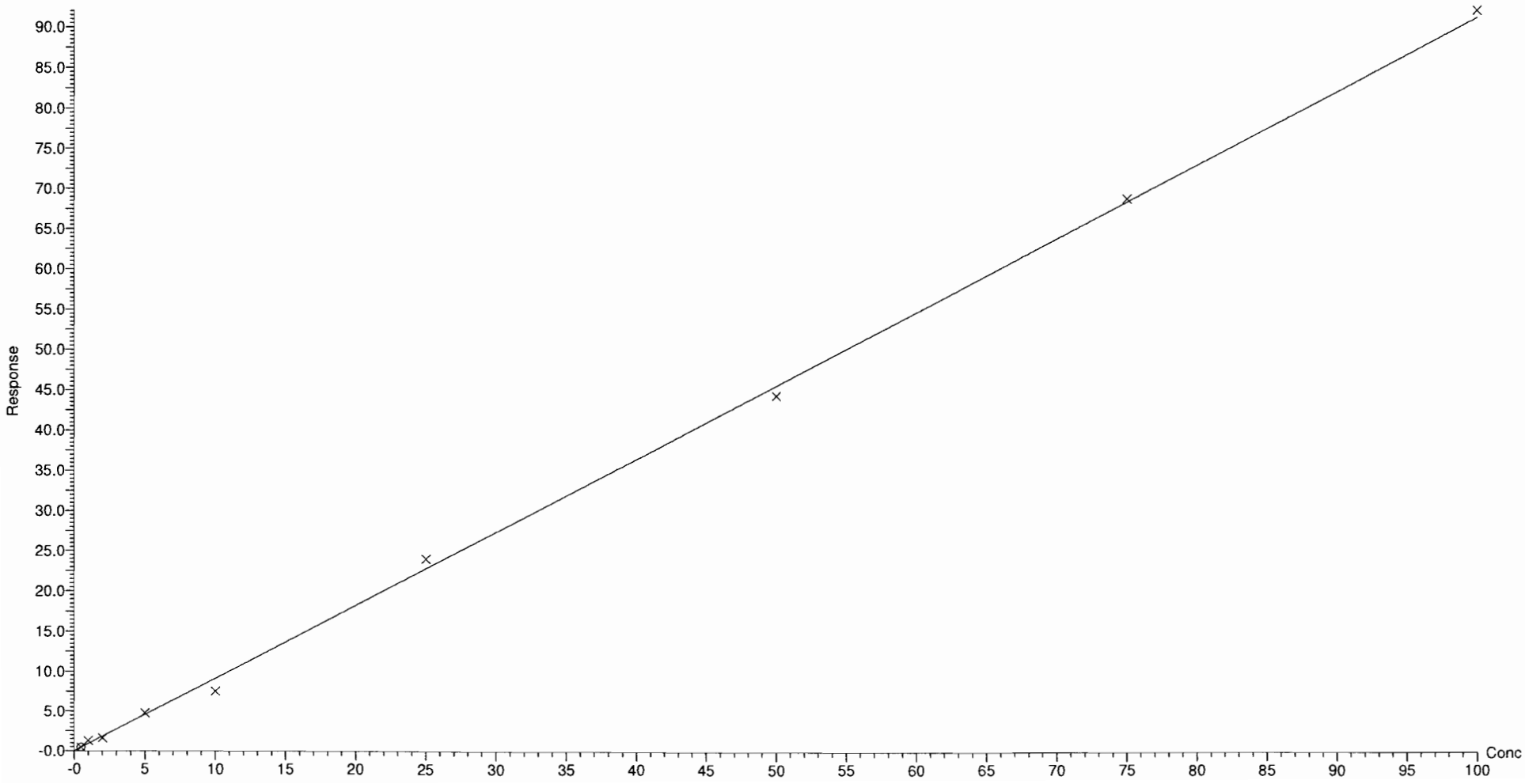
Compound name: PFHxS
Coefficient of Determination: R^2 = 0.999297
Calibration curve: 0.946984 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

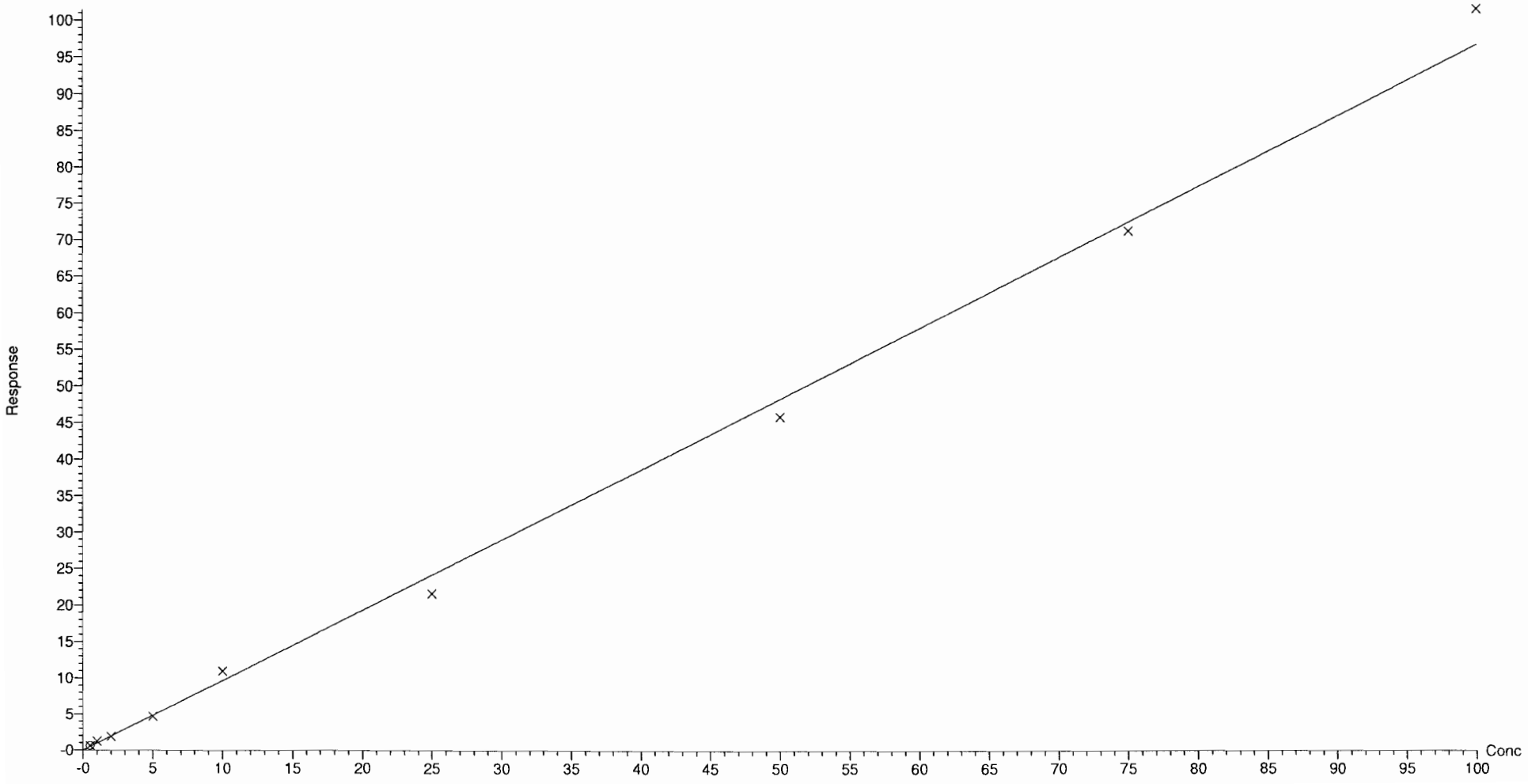
Compound name: PFOA
Coefficient of Determination: R^2 = 0.997242
Calibration curve: 0.912025 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

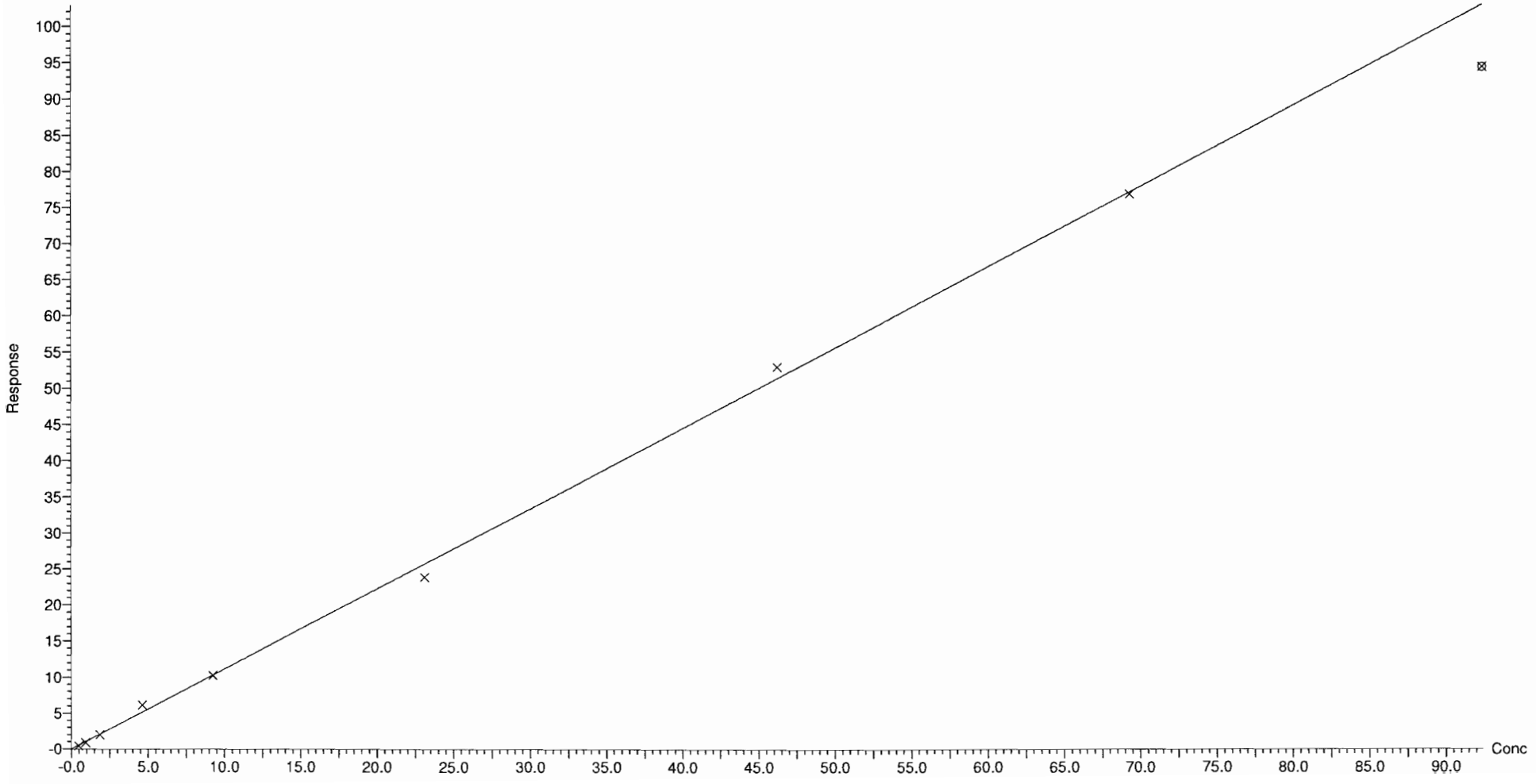
Compound name: PFNA
Coefficient of Determination: R^2 = 0.995986
Calibration curve: 0.966029 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

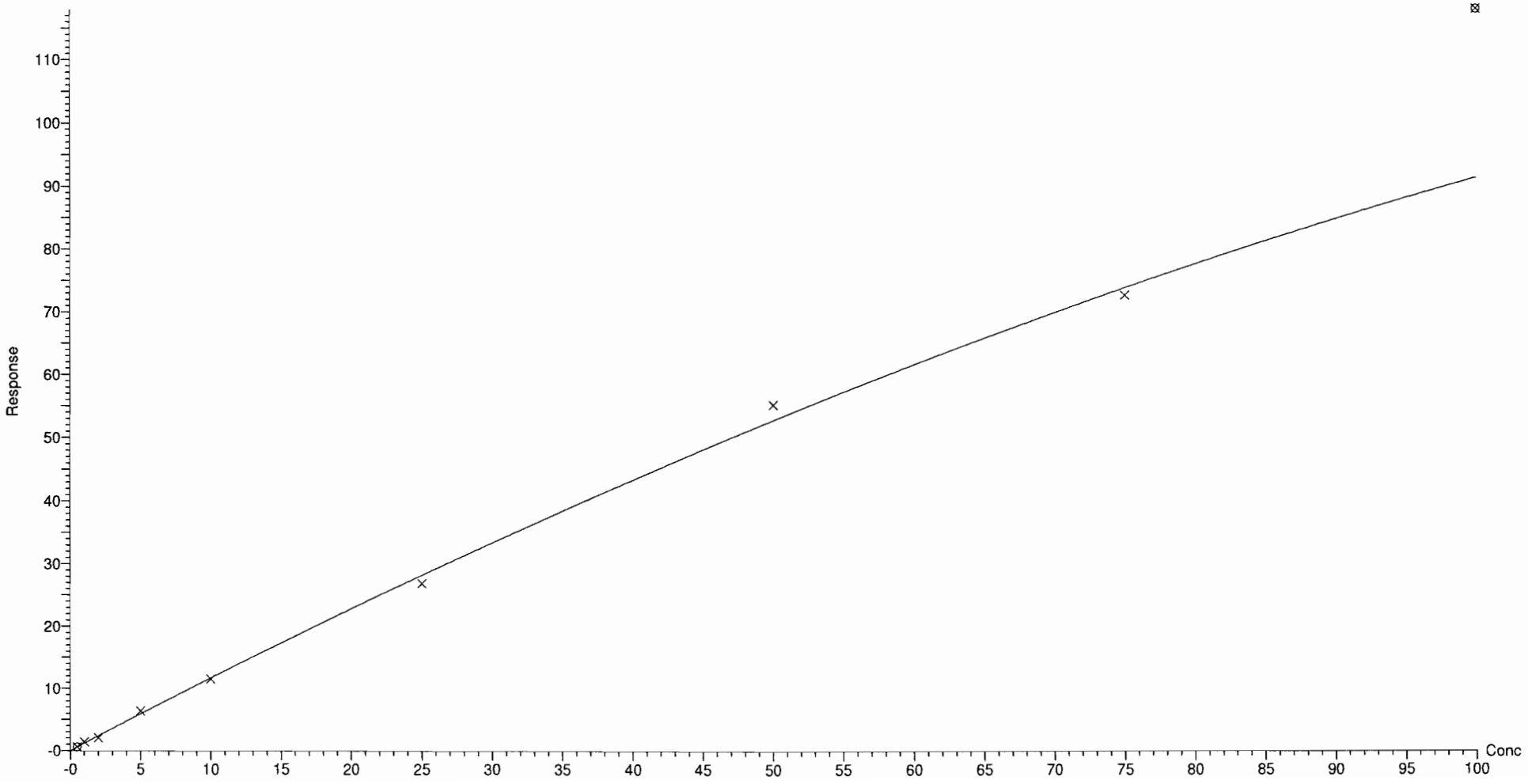
Compound name: PFOS
Coefficient of Determination: R^2 = 0.997337
Calibration curve: 1.11321 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:39:05 Pacific Daylight Time

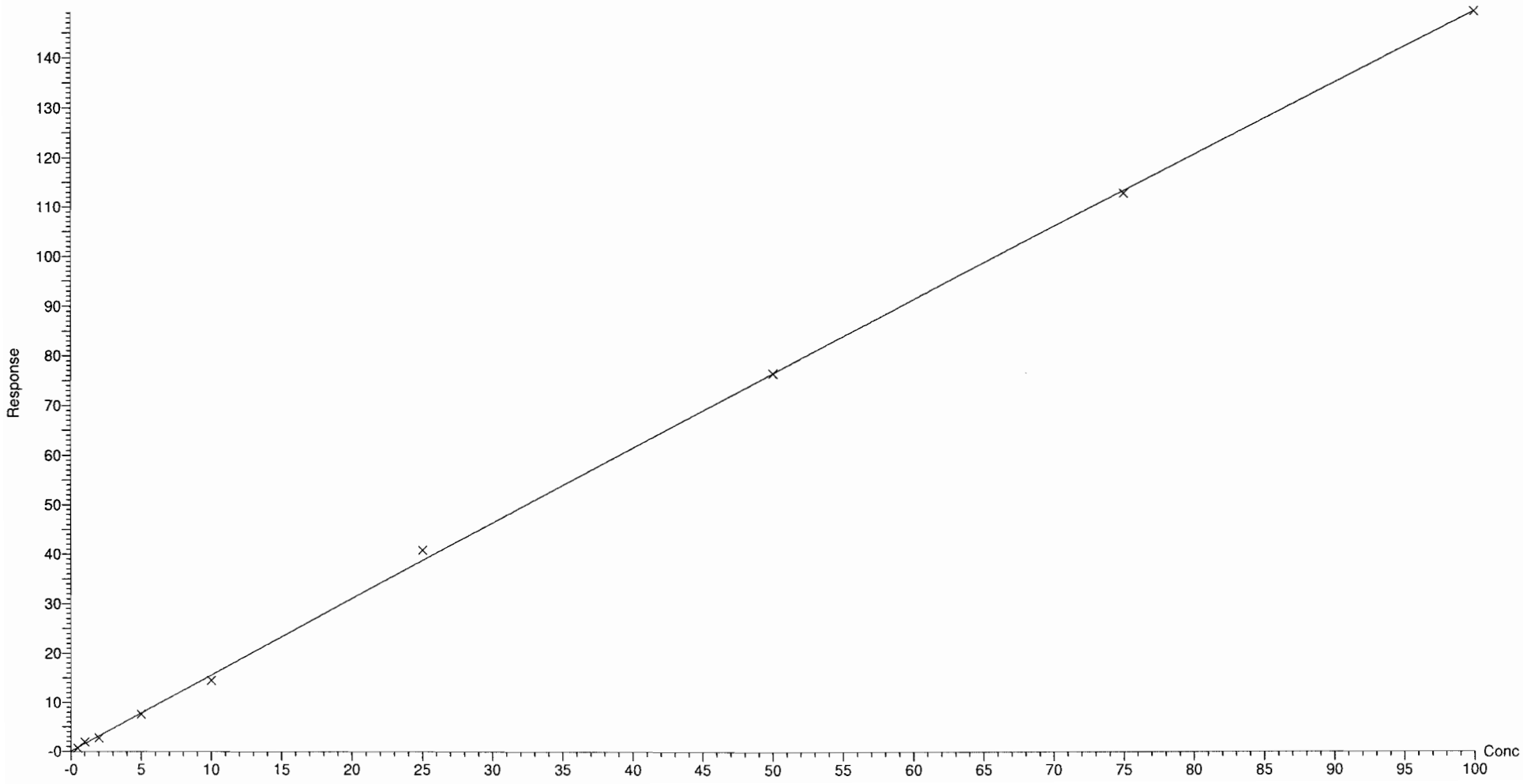
Compound name: PFDA
Coefficient of Determination: R^2 = 0.997763
Calibration curve: -0.00285672 * x^2 + 1.19829 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

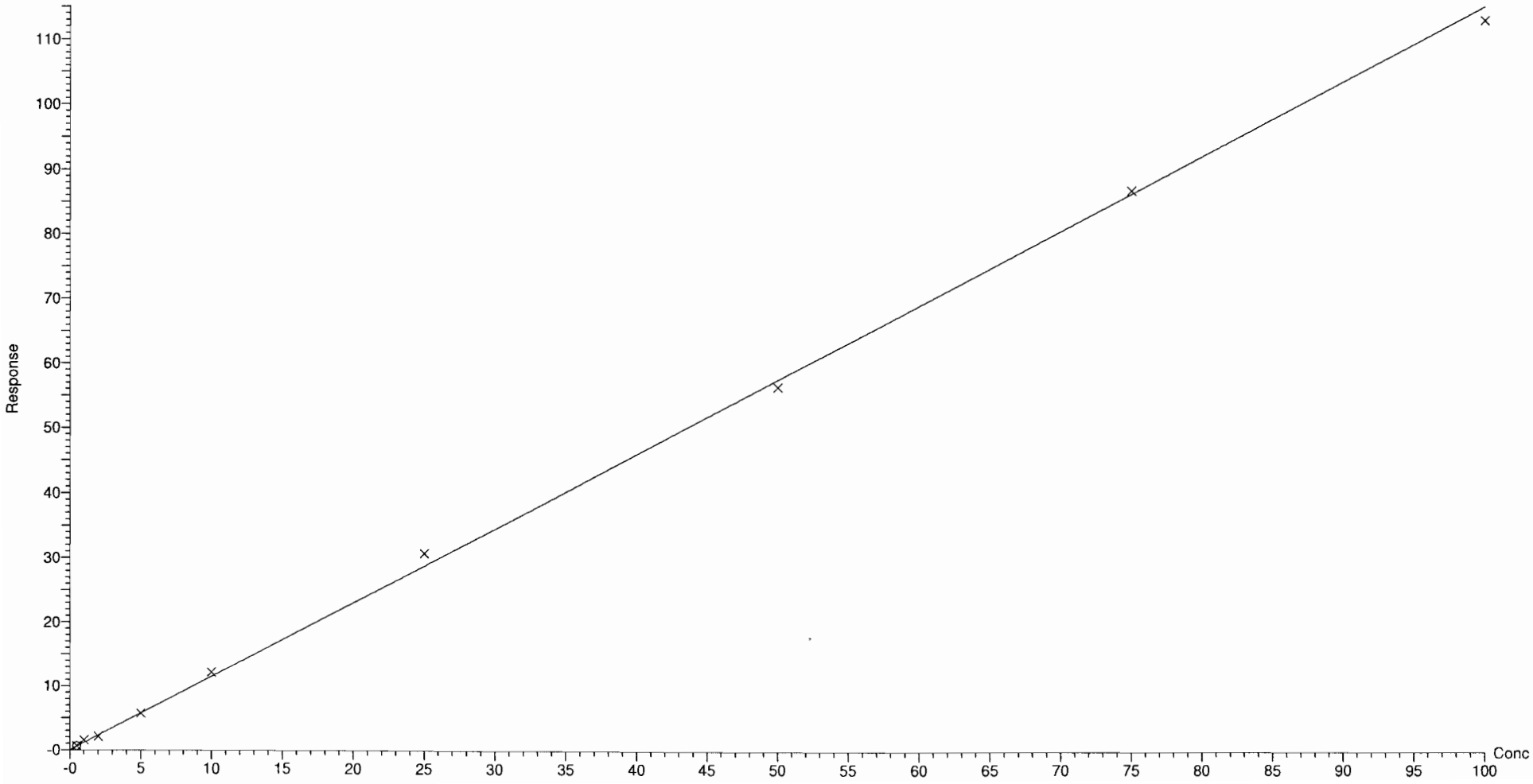
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.998968
Calibration curve: -0.000768073 * x^2 + 1.56852 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

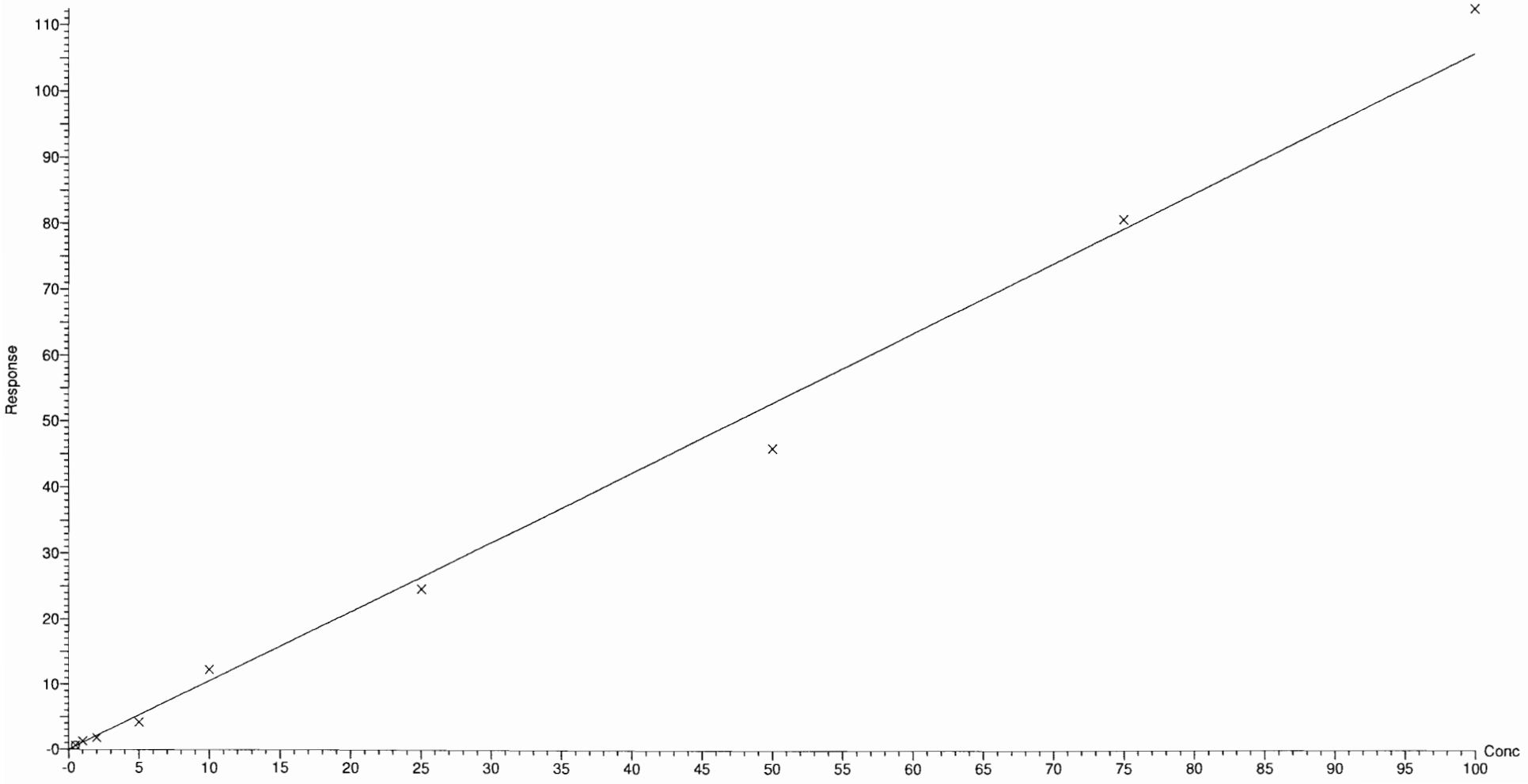
Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.998532
Calibration curve: 1.15097 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

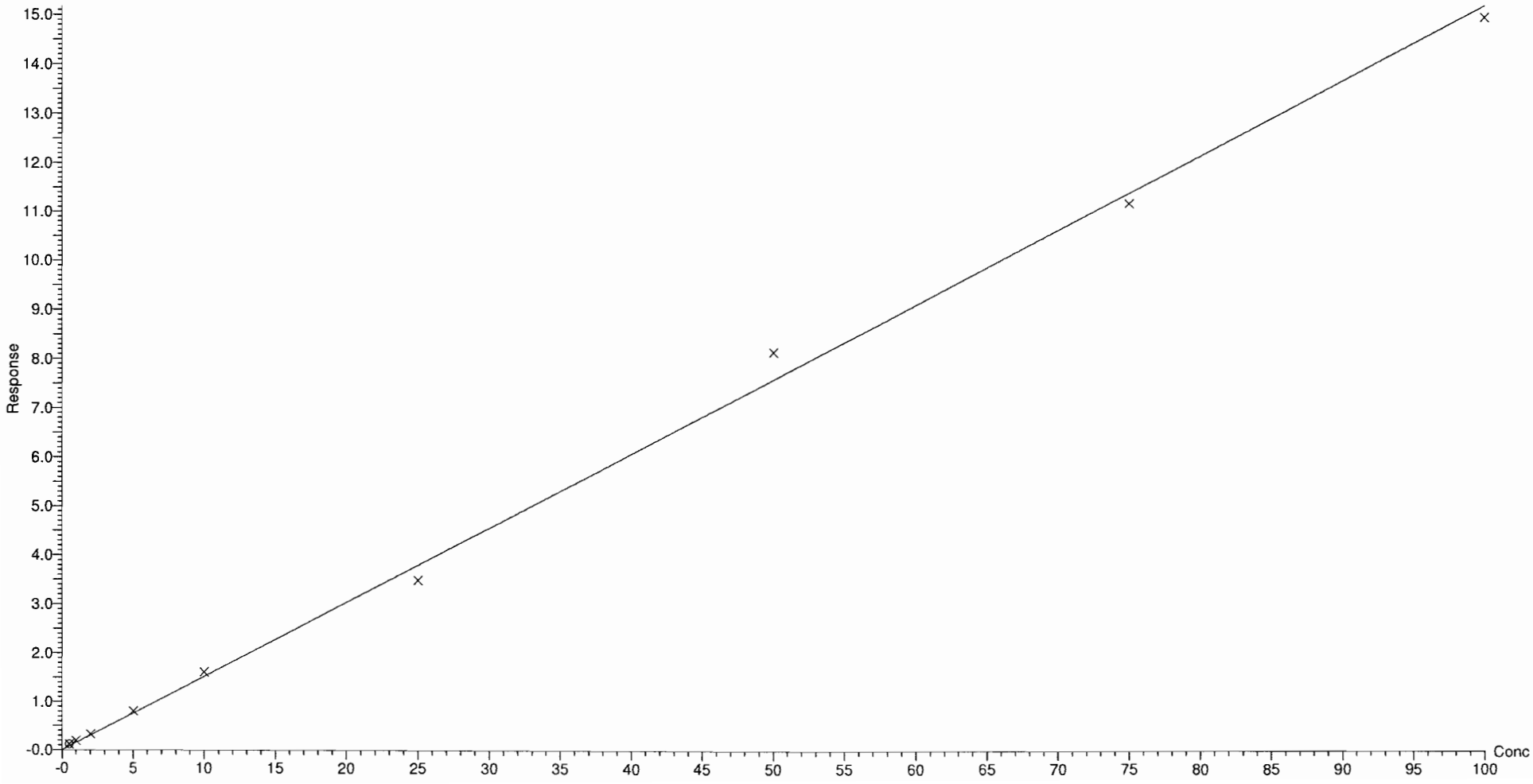
Compound name: PFUnA
Coefficient of Determination: R^2 = 0.991760
Calibration curve: 1.05646 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

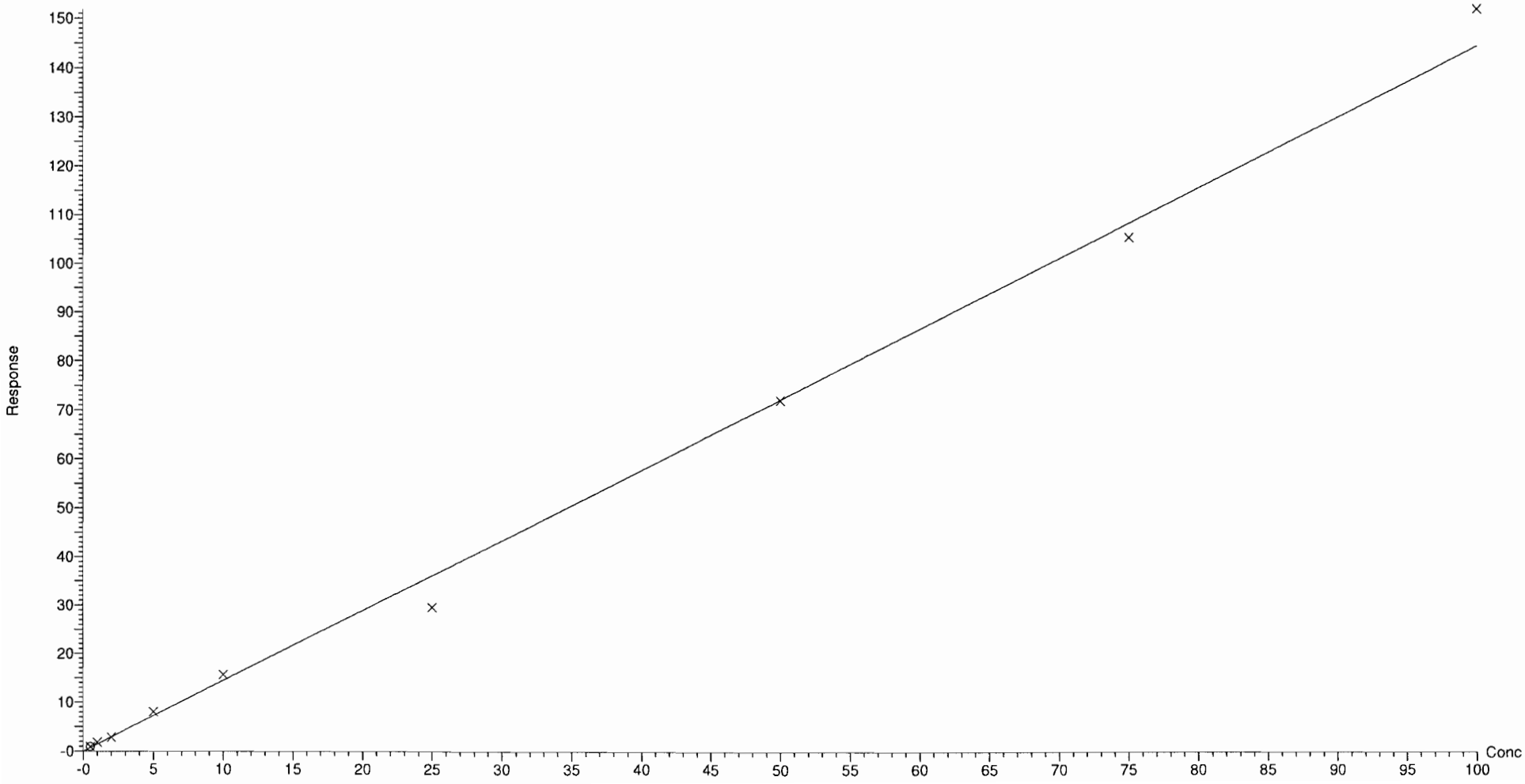
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.997324
Calibration curve: 0.151773 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.994392
Calibration curve: 1.44353 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

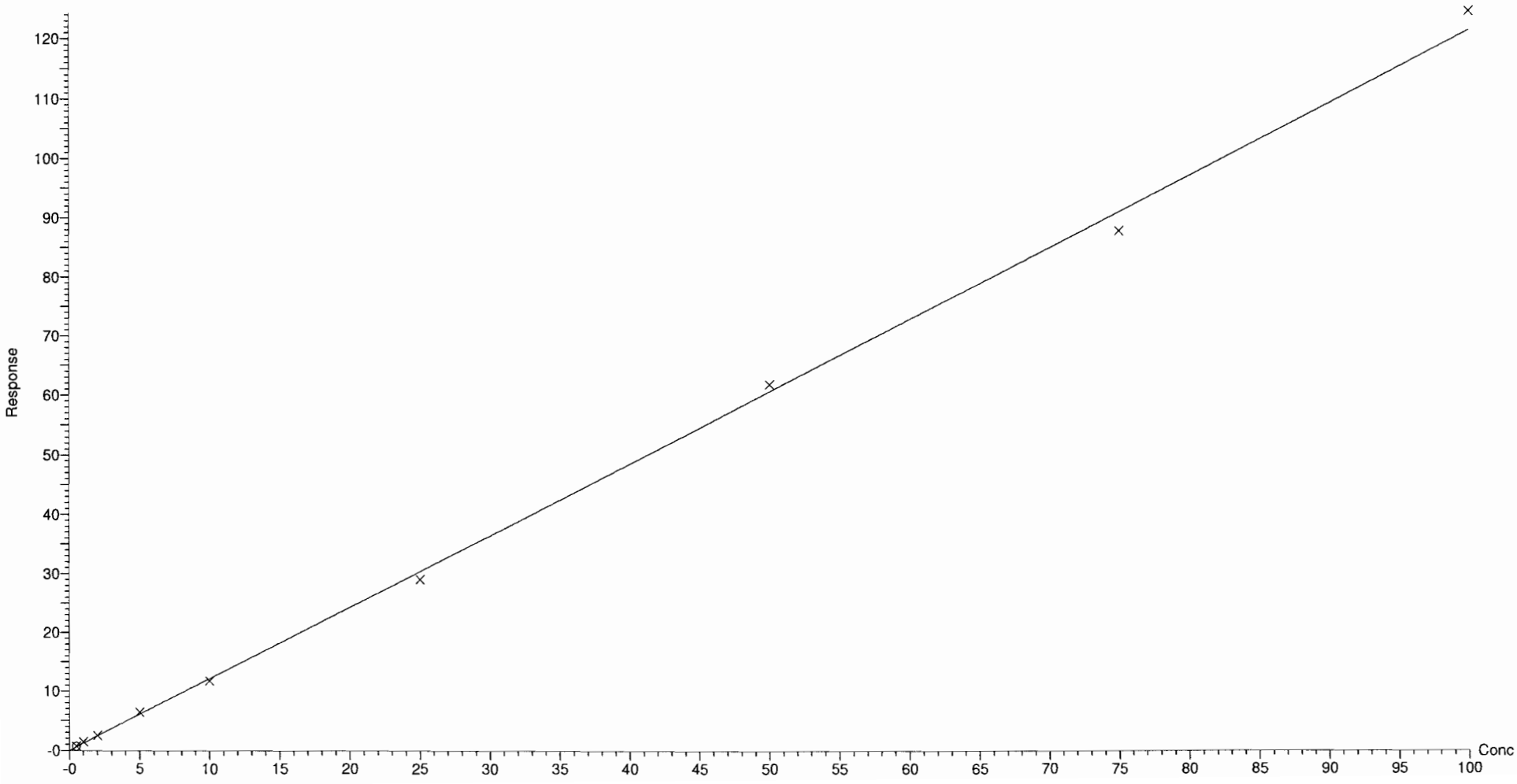


Vista Analytical Laboratory Q1

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 10:03:21 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:01:40 Pacific Daylight Time

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998778
Calibration curve: 1.2121 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



ICAL

Compound 18: 13C2-PFOA

high	36486.152	RPD
low	30995.338	16.27

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flags
1	ST180502M4-1 PFC CS-3 537 18D1810	180502M4_2	Standard	10	4.14	29110.20	29110.20	10	bbX
2	ST180502M4-2 PFC CS-2 537 18D1811	180502M4_3	Standard	10	4.14	30995.34	30995.34	10	bb
3	ST180502M4-3 PFC CS-1 537 18D1812	180502M4_4	Standard	10	4.14	35104.10	35104.10	10	bb
4	ST180502M4-4 PFC CS0 537 18D1813	180502M4_5	Standard	10	4.14	30518.89	30518.89	10	bb
5	ST180502M4-5 PFC CS1 537 18D1814	180502M4_6	Standard	10	4.14	34469.72	34469.72	10	bb
6	ST180502M4-6 PFC CS2 537 18D2412	180502M4_7	Standard	10	4.13	36486.15	36486.15	10	bb
7	ST180502M4-7 PFC CS3 537 18D1816	180502M4_8	Standard	10	4.13	33625.34	33625.34	10	bb
8	ST180502M4-8 PFC CS4 537 18D1817	180502M4_9	Standard	10	4.13	34984.23	34984.23	10	bb
9	ST180502M4-9 PFC CS5 537 18D1818	180502M4_10	Standard	10	4.13	32442.09	32442.09	10	bb
							average		
							33578.23		

Compound 18: 13C4-PFOS

high	14879.066	RPD
low	13110.118	12.64

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flags
1	ST180502M4-1 PFC CS-3 537 18D1810	180502M4_2	Standard	28.7	4.5	14846.63	14846.63	28.7	bb
2	ST180502M4-2 PFC CS-2 537 18D1811	180502M4_3	Standard	28.7	4.5	14350.85	14350.85	28.7	bb
3	ST180502M4-3 PFC CS-1 537 18D1812	180502M4_4	Standard	28.7	4.5	14576.02	14576.02	28.7	bb
4	ST180502M4-4 PFC CS0 537 18D1813	180502M4_5	Standard	28.7	4.5	13110.12	13110.12	28.7	bb
5	ST180502M4-5 PFC CS1 537 18D1814	180502M4_6	Standard	28.7	4.5	14590.22	14590.22	28.7	bb
6	ST180502M4-6 PFC CS2 537 18D2412	180502M4_7	Standard	28.7	4.5	14878.39	14878.39	28.7	bb
7	ST180502M4-7 PFC CS3 537 18D1816	180502M4_8	Standard	28.7	4.5	14466.46	14466.46	28.7	bb
8	ST180502M4-8 PFC CS4 537 18D1817	180502M4_9	Standard	28.7	4.5	14879.07	14879.07	28.7	bd
9	ST180502M4-9 PFC CS5 537 18D1818	180502M4_10	Standard	28.7	4.49	16251.81	16251.81	28.7	bbX
							average		
							14462.22		

Compound 20: d3-N-MeFOSAA

high	31139.033	RPD
low	27378.705	12.85

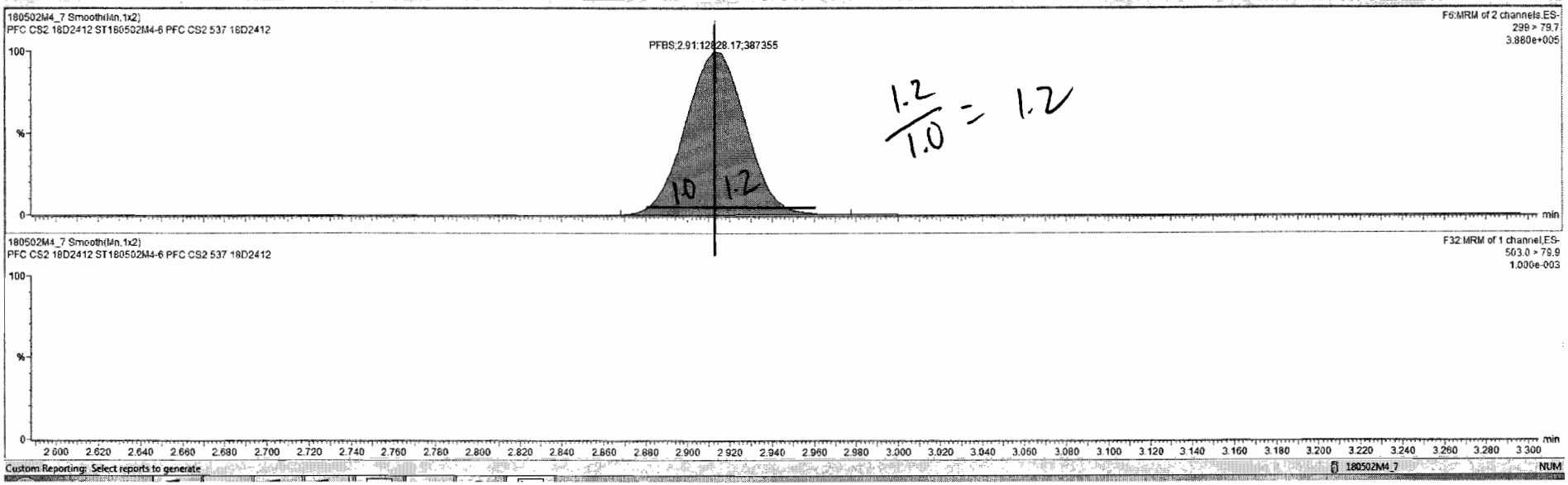
	ID	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flags
1	ST180502M4-1 PFC CS-3 537 18D1810	180502M4_2	Standard	40	4.83	29375.83	29375.83	40	bb
2	ST180502M4-2 PFC CS-2 537 18D1811	180502M4_3	Standard	40	4.83	29370.72	29370.72	40	bb
3	ST180502M4-3 PFC CS-1 537 18D1812	180502M4_4	Standard	40	4.83	31016.14	31016.14	40	bb
4	ST180502M4-4 PFC CS0 537 18D1813	180502M4_5	Standard	40	4.82	27378.71	27378.71	40	bb
5	ST180502M4-5 PFC CS1 537 18D1814	180502M4_6	Standard	40	4.82	31139.03	31139.03	40	bb
6	ST180502M4-6 PFC CS2 537 18D2412	180502M4_7	Standard	40	4.82	28274.09	28274.09	40	bb
7	ST180502M4-7 PFC CS3 537 18D1816	180502M4_8	Standard	40	4.82	30689.19	30689.19	40	bb
8	ST180502M4-8 PFC CS4 537 18D1817	180502M4_9	Standard	40	4.82	29325.34	29325.34	40	bb
9	ST180502M4-9 PFC CS5 537 18D1818	180502M4_10	Standard	40	4.82	30512.55	30512.55	40	bb
							average		
							29675.73		

TargetLynx XS - 180502M-CRV - [Chromatogram]

File Edit View Display Processing Window Help

180502M4_7 ST180502M4-6 PFC CS2 537 18D2412 PFC CS2 18D2412

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor3	SWI	Cal File
1	PFBS	22.757624	0.00274	103.0		1.283e4		2.91	1	19			0.647	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
2	PFHxA	23.496755	0.00866	94.0		6.013e4		3.28	2	18			0.795	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
3	PFHpA	22.612768	0.00333	90.5		5.738e4		3.75	3	18			0.909	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
4	PFHxS	21.823861	0.00798	95.7		1.071e4		3.85	4	19			0.857	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
5	PFOA	26.295282	0.00868	105.2		8.751e4		4.14	5	18			1.001	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
6	PFNA	22.330531	0.00521	89.3		7.871e4		4.45	6	18			1.077	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
7	PFOS	21.452046	0.000186	92.9		1.238e4		4.50	7	19			1.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
8	PFDA	24.993673	0.0000...	100.0		9.785e4		4.72	8	18			1.141	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
9	N-MeFOSAA	26.320930	0.0000...	105.3		2.581e4		4.62	9	20			1.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
10	N-EtFOSAA	26.581889	0.000133	106.7		2.171e4		4.94	10	20			1.023	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
11	PFUnA	23.312269	0.00335	93.2		8.986e4		4.95	11	18			1.197	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
12	PFDoA	22.977483	0.0130	91.9		1.272e4		5.15	12	18			1.246	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
13	PFTrDA	20.471768	0.00163	81.9		1.078e5		5.34	13	18			1.292	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
14	PFTeDA	23.906140	0.00445	95.6		1.057e5		5.55	14	18			1.344	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
15	13C2-PFHxA	9.3118142	0.00470	93.1		1.718e4	0.506	3.28	15	18			0.795	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
16	13C2-PFDA	9.5693662	0.0000...	95.9		2.834e4	0.810	4.72	16	18			1.141	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
17	d5-N-EtFOSAA	43.463098	0.0139	108.7		3.437e4	1.119	4.94	17	20			1.023	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
18	13C2-PFOA	10.000000	0.0000...	100.0		3.649e4	1.000	4.13	18	18			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
19	13C4-PFOS	28.700000	0.000207	100.0		1.488e4	1.000	4.50	19	19			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
20	d3-N-MeFOSAA	40.000000	0.000153	100.0		2.827e4	1.000	4.82	20	20			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...



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180502M4_7

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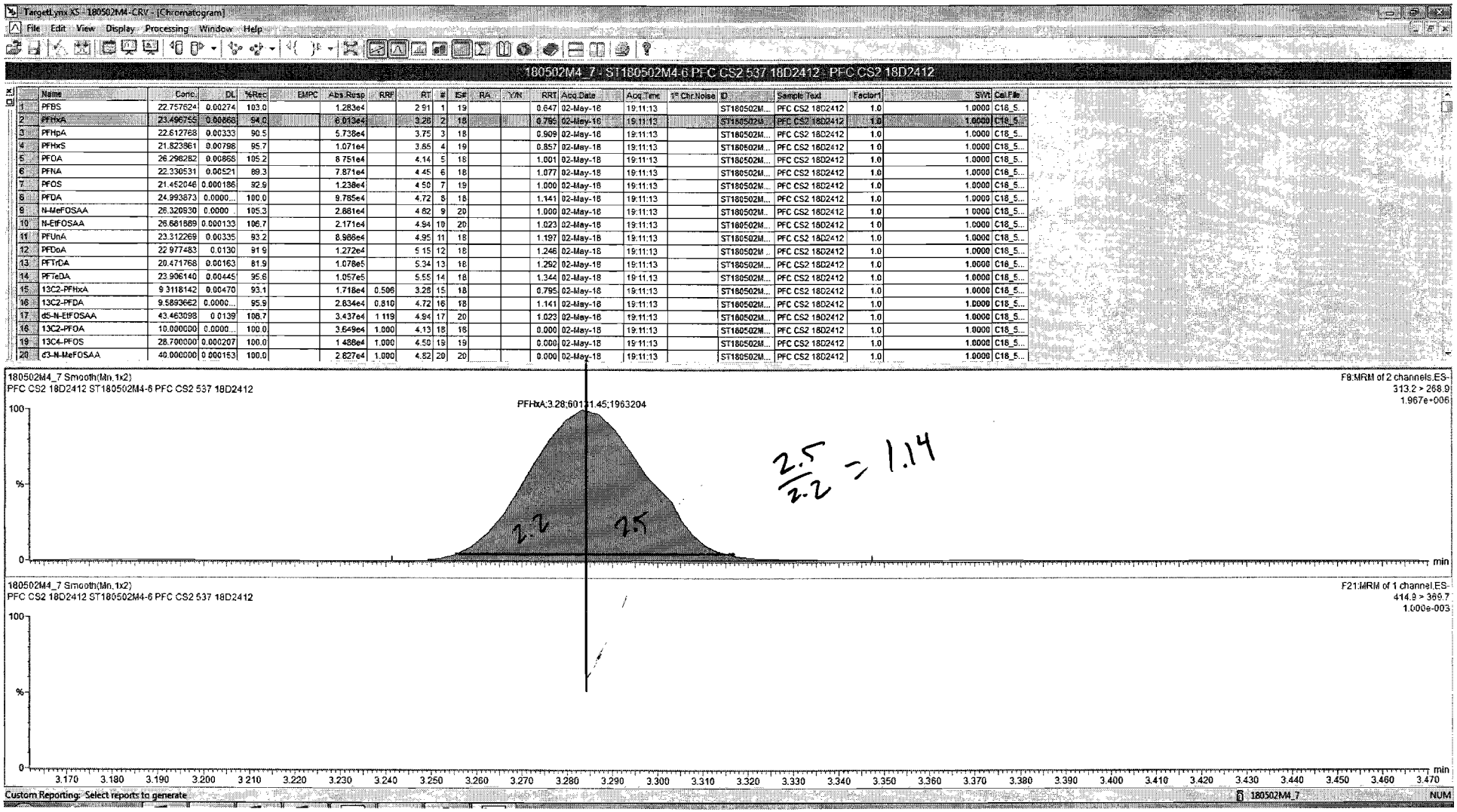

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	Wt	Cal.File
1	PFBS	22.757624	0.00274	103.0		1.283e4		2.91	1	19			0.647	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
2	PFHxA	23.496755	0.00668	94.0		6.013e4		3.28	2	18			0.795	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
3	PFHpA	22.612768	0.00333	90.5		5.738e4		3.75	3	18			0.909	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
4	PFHxS	21.823861	0.00798	95.7		1.071e4		3.85	4	19			0.857	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
5	PFOA	26.296282	0.00866	105.2		8.751e4		4.14	5	18			1.001	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
6	PFNA	22.330531	0.00521	89.3		7.871e4		4.45	6	18			1.077	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
7	PFOS	21.452046	0.000186	92.9		1.238e4		4.50	7	19			1.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
8	PFDA	24.993873	0.0000...	100.0		9.785e4		4.72	8	18			1.141	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
9	N-MeFOSAA	26.326930	0.0000	105.3		2.681e4		4.82	9	20			1.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
10	N-EtFOSAA	26.681869	0.000133	106.7		2.171e4		4.94	10	20			1.023	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
11	PFUnA	23.312269	0.00335	93.2		8.986e4		4.95	11	18			1.197	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
12	PFDoA	22.977483	0.0130	91.9		1.272e4		5.15	12	18			1.246	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
13	PFTrDA	20.471768	0.00163	81.9		1.078e5		5.34	13	18			1.292	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
14	PFTeDA	23.906140	0.00445	95.6		1.057e5		5.55	14	18			1.344	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
15	13C2-PFHxA	9.3118142	0.00470	93.1		1.718e4	0.506	3.28	15	18			0.795	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
16	13C2-PFDA	9.5893662	0.0000...	95.9		2.634e4	0.810	4.72	16	18			1.141	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
17	d5-N-EtFOSAA	43.463098	0.0139	108.7		3.437e4	1.119	4.94	17	20			1.023	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
18	13C2-PFOA	10.000000	0.0000...	100.0		3.649e4	1.000	4.13	18	18			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
19	13C4-PFOS	28.700000	0.000207	100.0		1.488e4	1.000	4.50	19	19			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...
20	d3-N-MeFOSAA	40.000000	0.000153	100.0		2.827e4	1.000	4.82	20	20			0.000	02-May-18	19:11:13		ST180502M...	PFC CS2 18D2412	1.0	1.0000	C18_5...

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2 40 5/3/18

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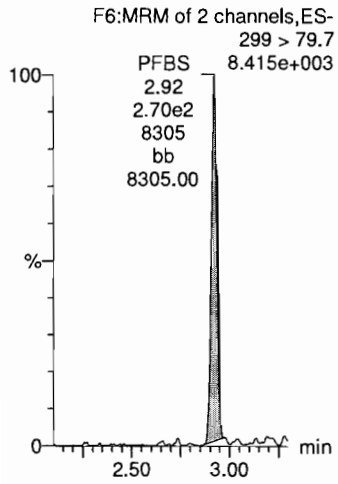
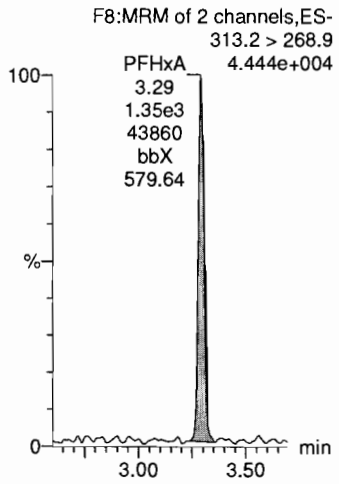


PFHxA



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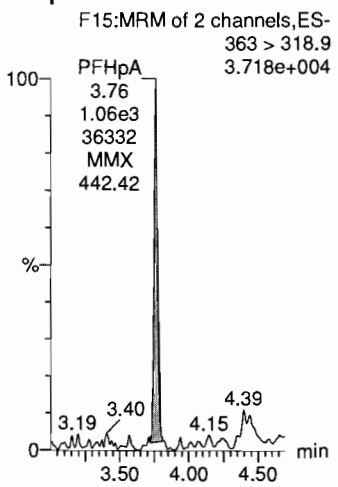

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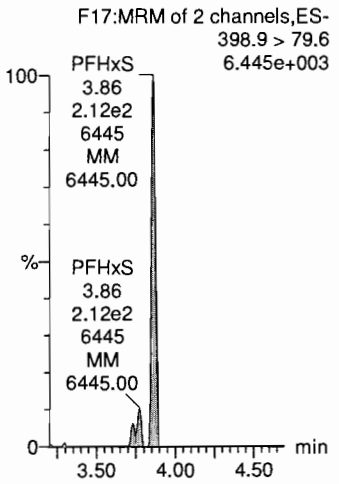

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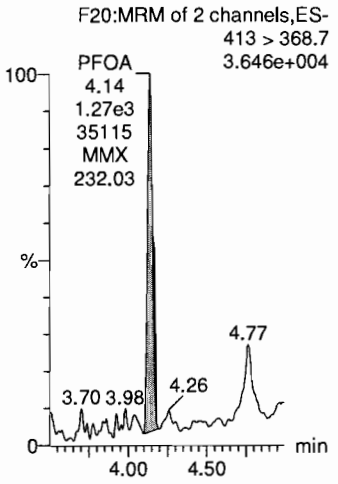

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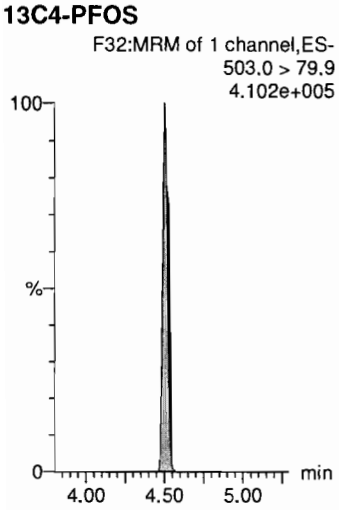

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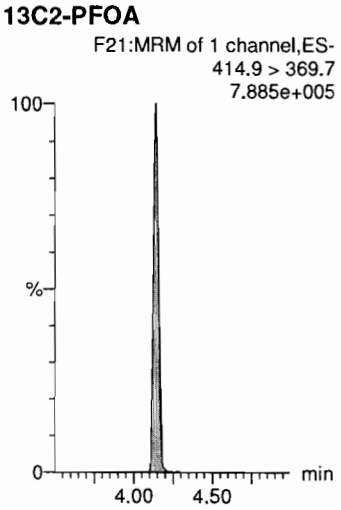

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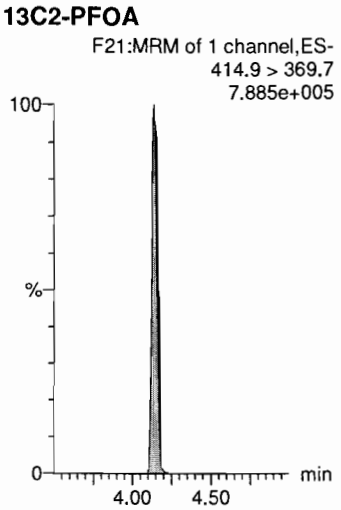

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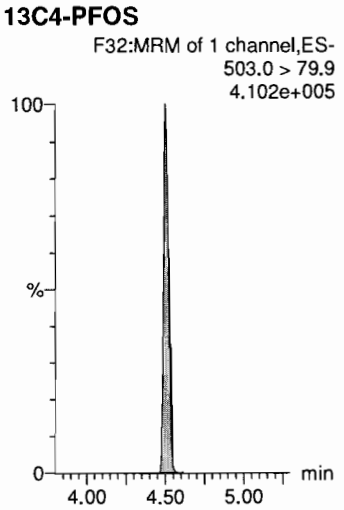

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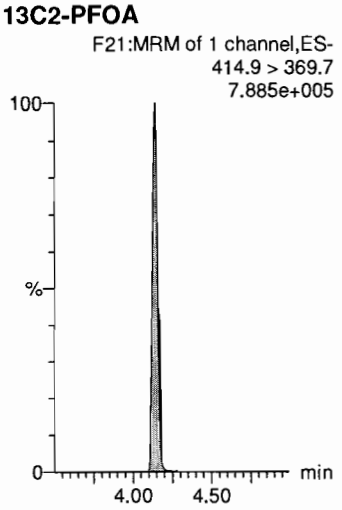

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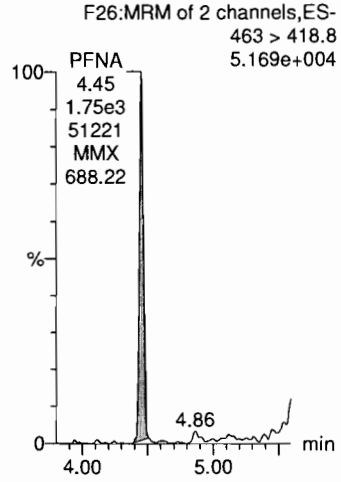

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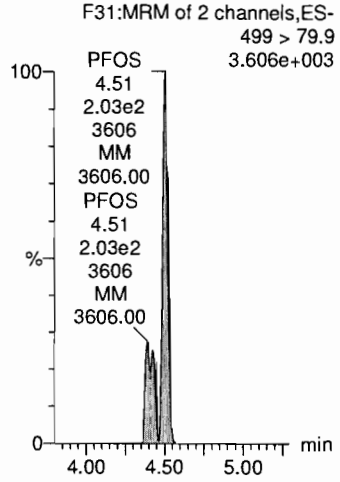

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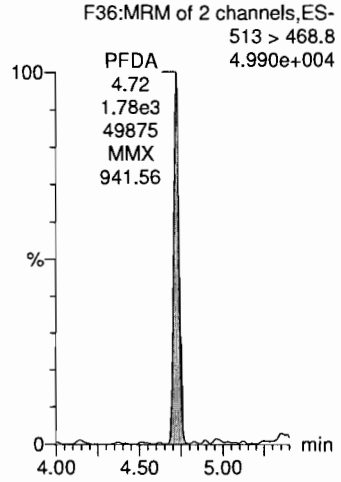

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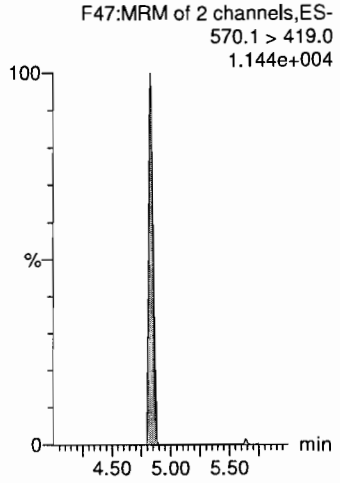

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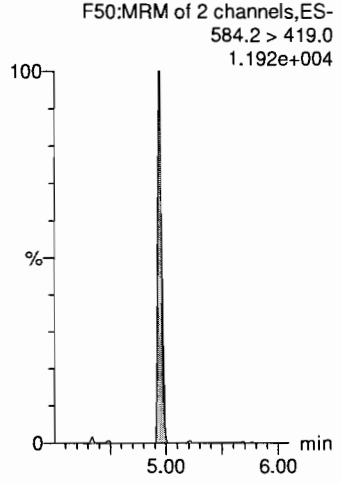

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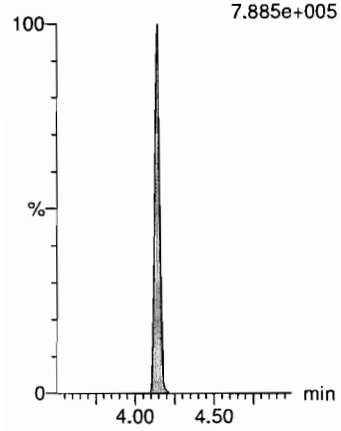

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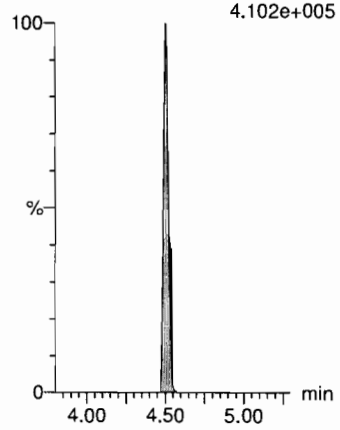

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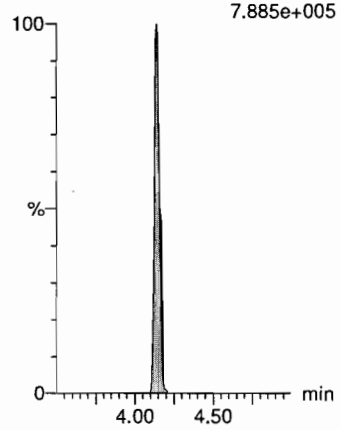

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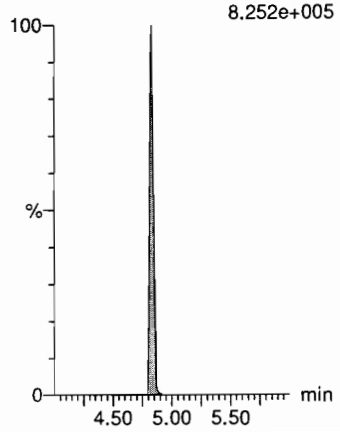

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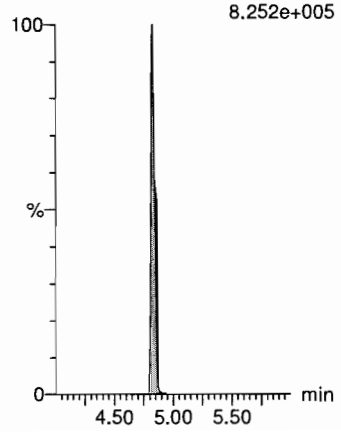

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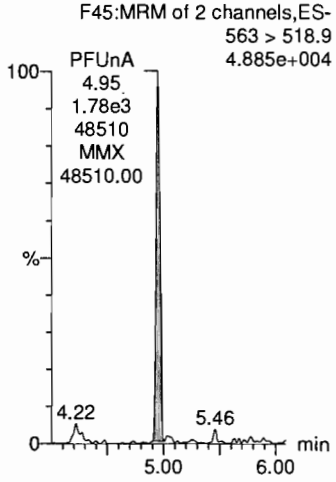
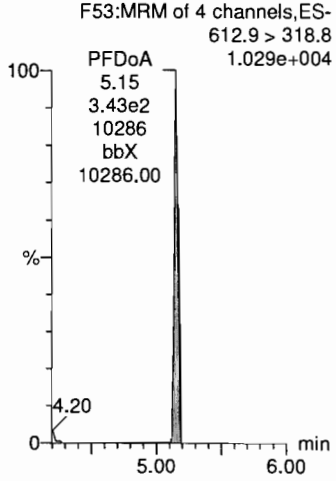
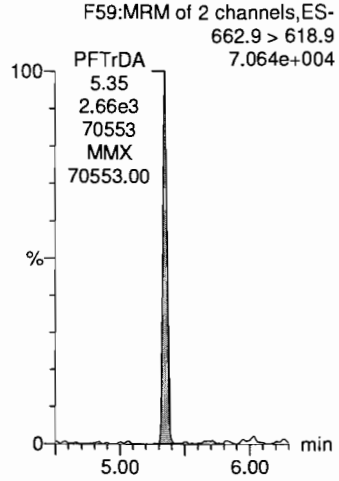
PFUnA



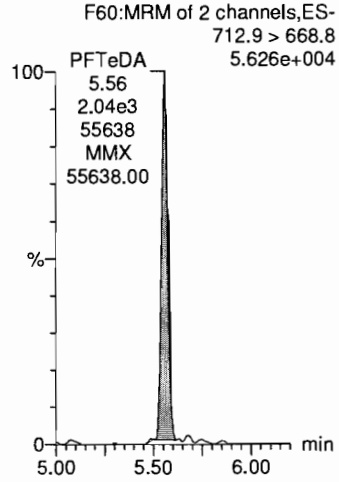
PFDoA



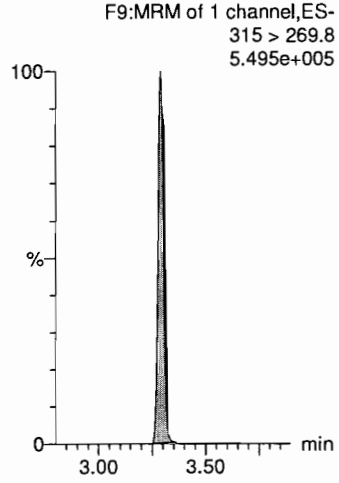
PFTrDA



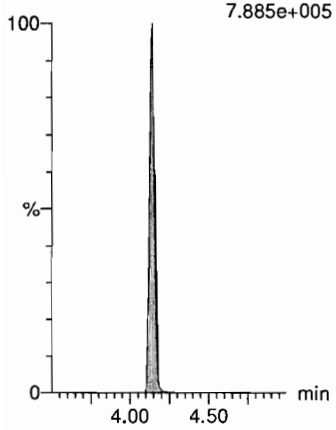
PFTeDA



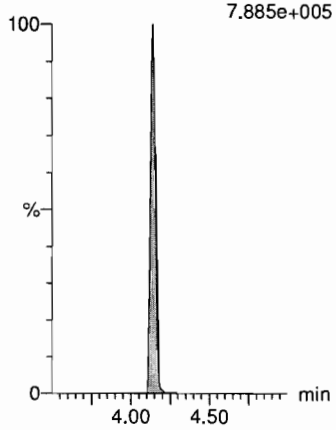
13C2-PFHxA



13C2-PFOA



13C2-PFOA



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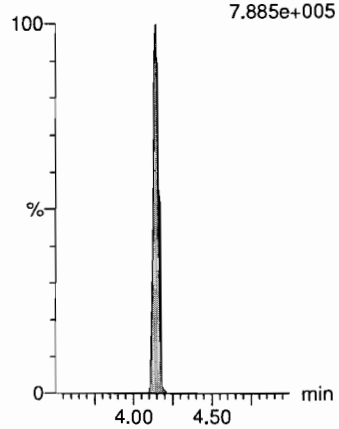

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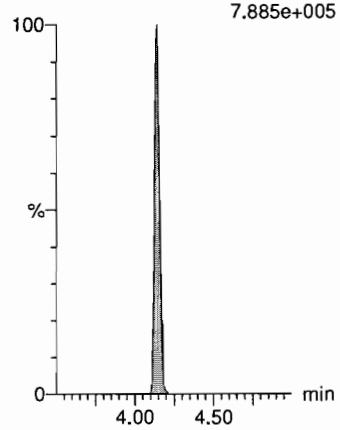
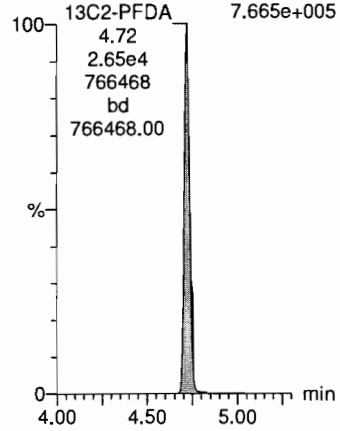


13C2-PFDA

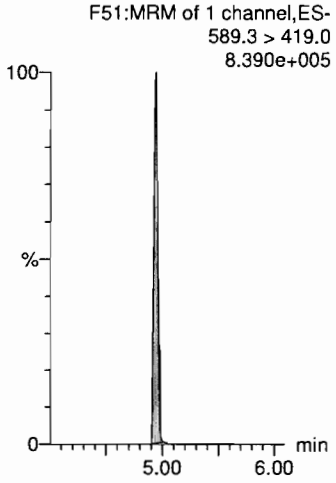


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_2, Date: 02-May-2018, Time: 18:13:53, ID: ST180502M4-1 PFC CS-3 537 18D1810, Description: PFC CS-3 18D1810

d5-N-EtFOSAA

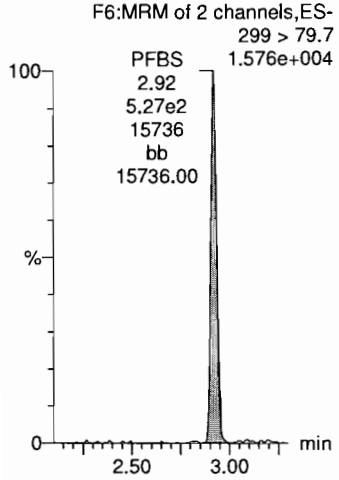


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

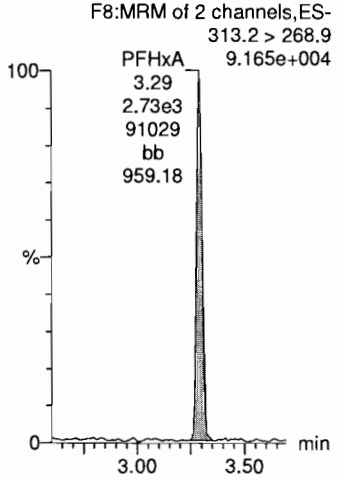
Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_3, Date: 02-May-2018, Time: 18:25:20, ID: ST180502M4-2 PFC CS-2 537 18D1811, Description: PFC CS-2 18D1811

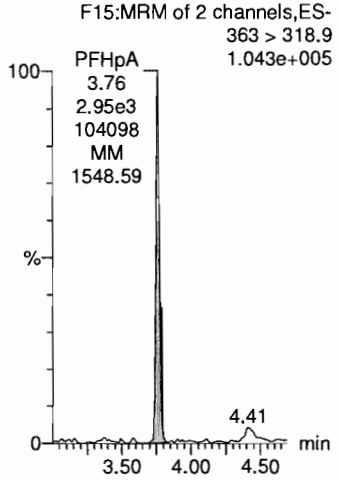
PFBS



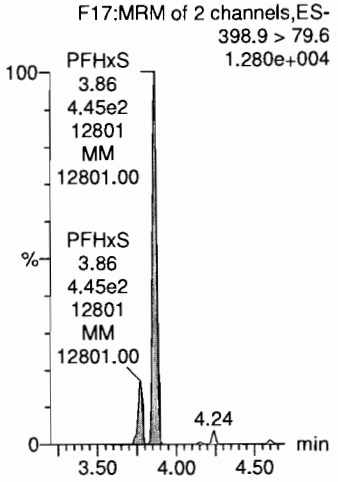
PFHxA



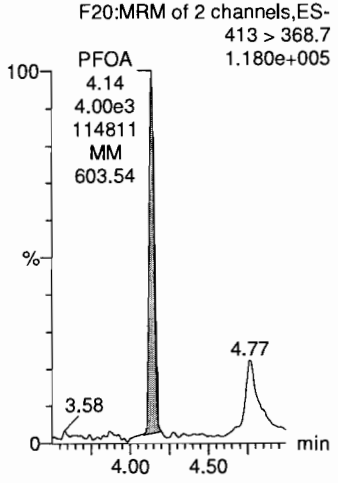
PFHpA



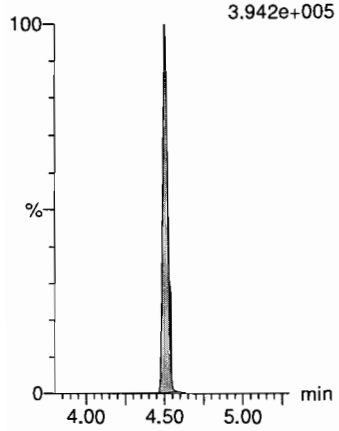
PFHxS



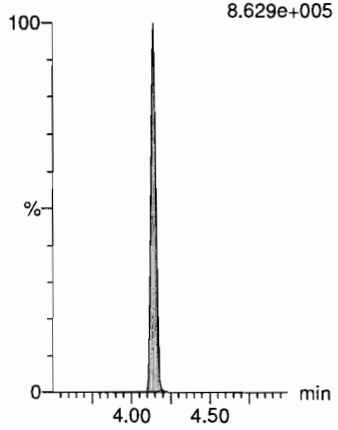
PFOA



13C4-PFOS



13C2-PFOA



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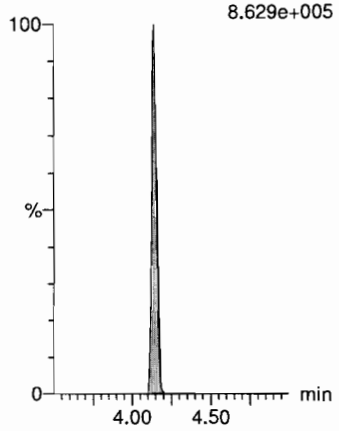

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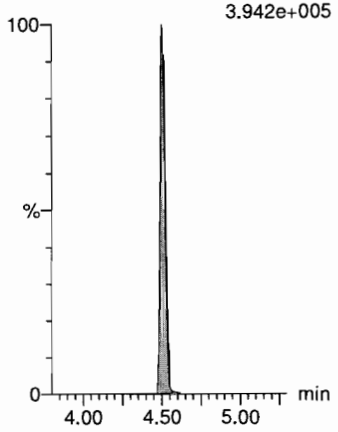
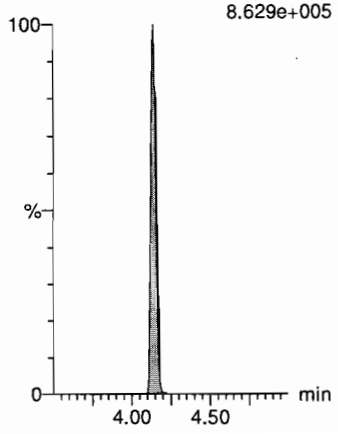


13C2-PFOA

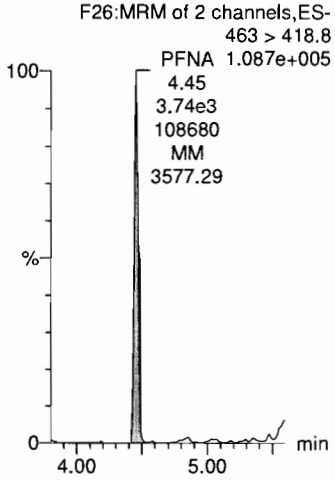


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

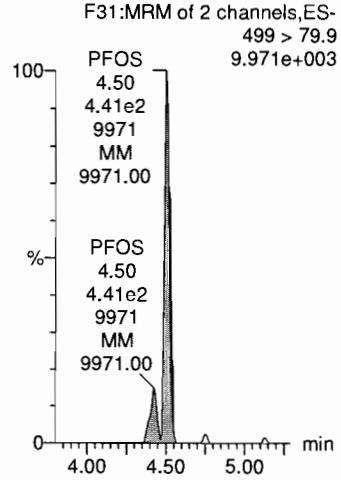
Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_3, Date: 02-May-2018, Time: 18:25:20, ID: ST180502M4-2 PFC CS-2 537 18D1811, Description: PFC CS-2 18D1811

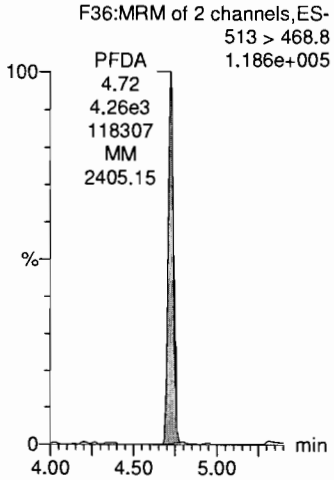
PFNA



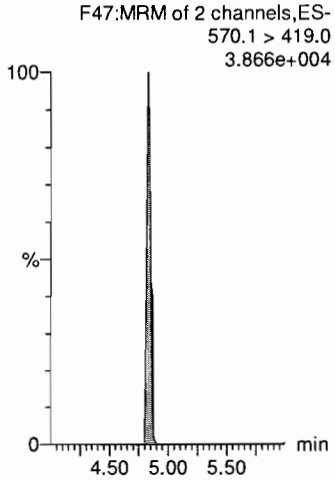
PFOS



PFDA



N-MeFOSAA



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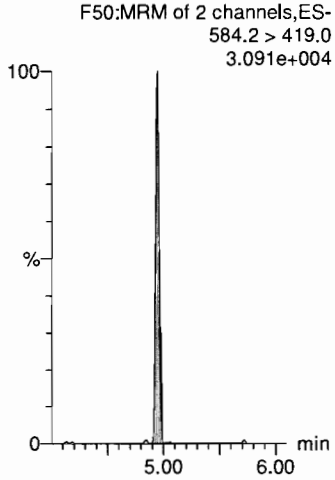
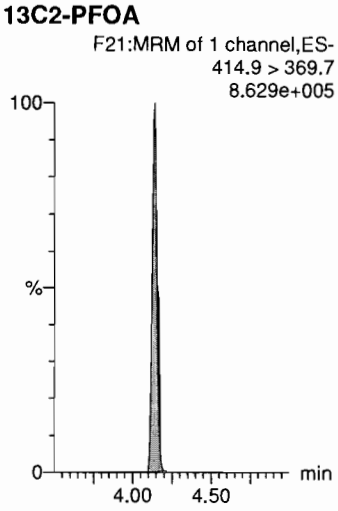
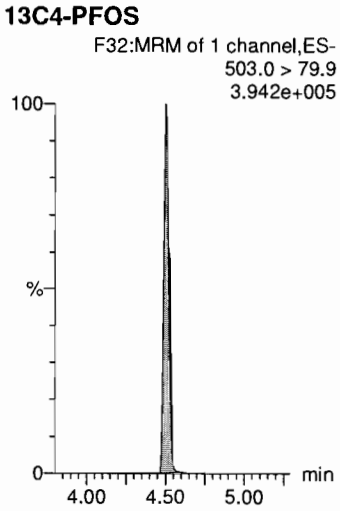


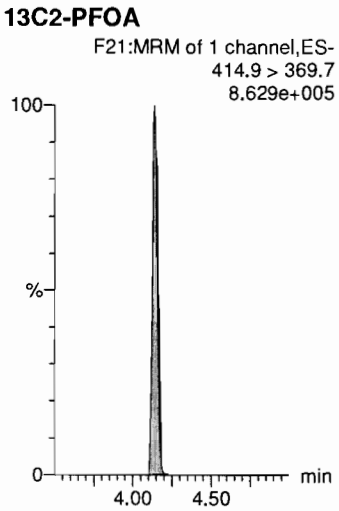
13C2-PFOA



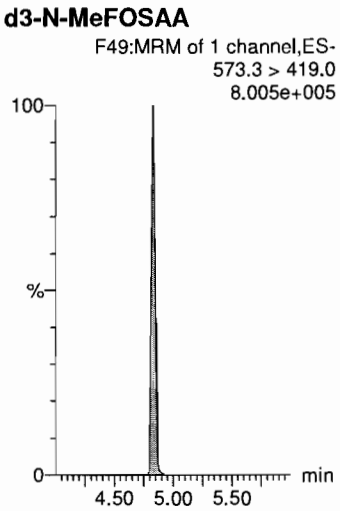
13C4-PFOS



13C2-PFOA



d3-N-MeFOSAA



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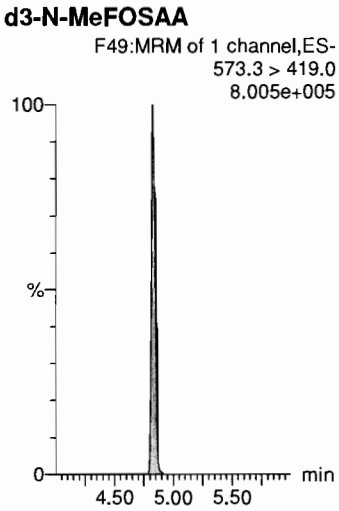
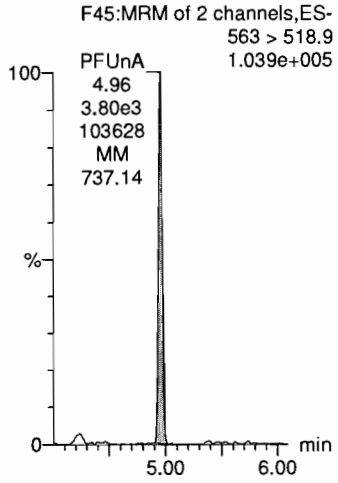


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

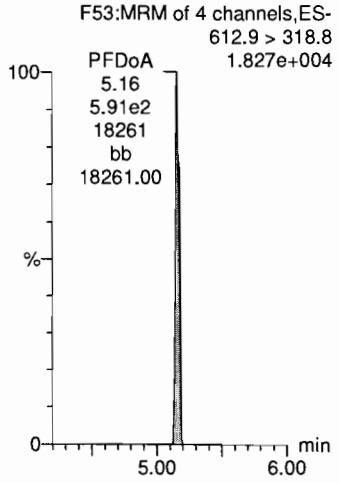
Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_3, Date: 02-May-2018, Time: 18:25:20, ID: ST180502M4-2 PFC CS-2 537 18D1811, Description: PFC CS-2 18D1811

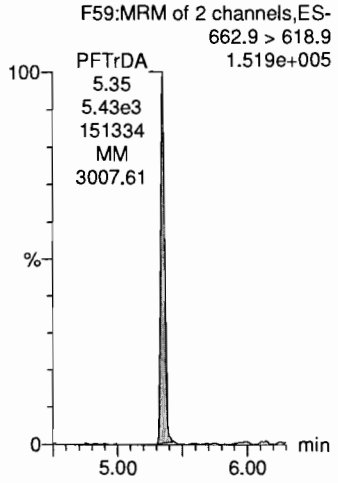
PFUnA



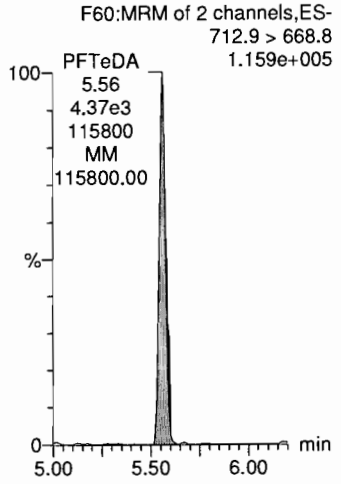
PFDoA



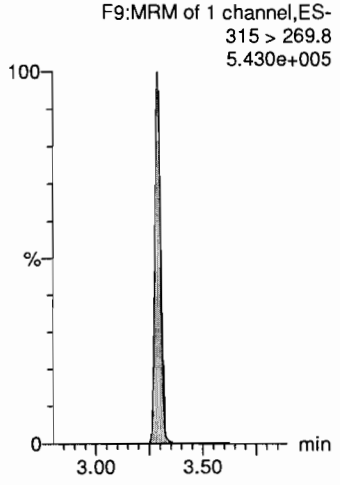
PFTrDA



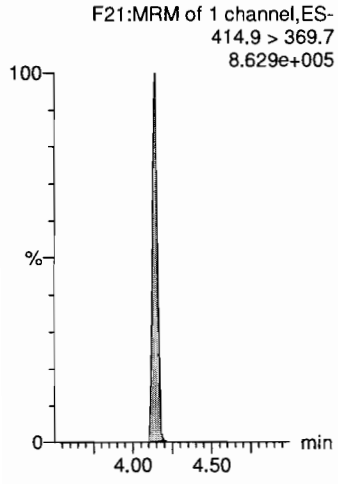
PFTeDA



13C2-PFHxA



13C2-PFOA



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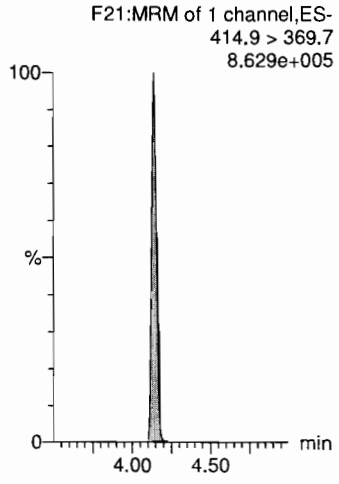

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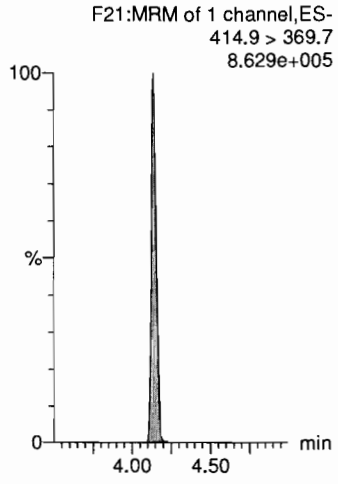

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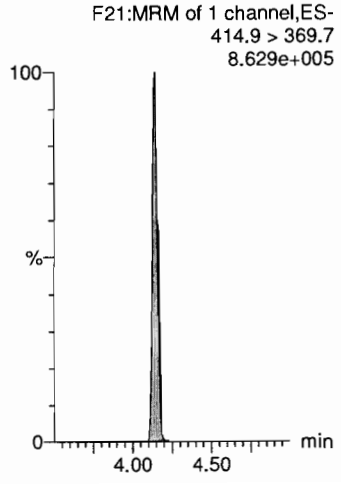
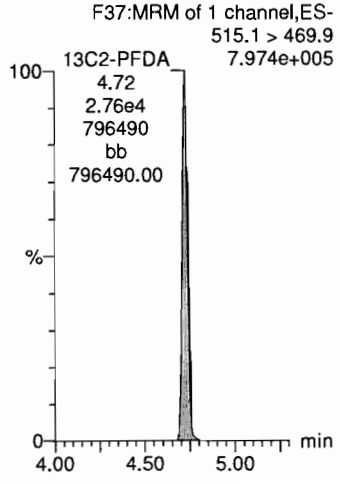


13C2-PFDA

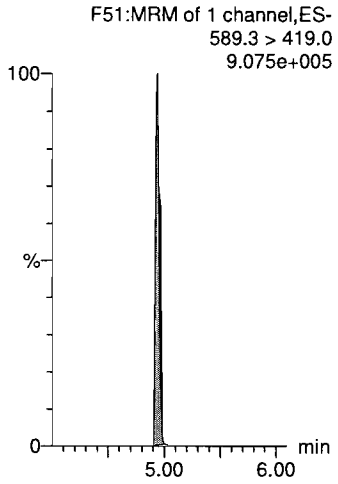


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_3, Date: 02-May-2018, Time: 18:25:20, ID: ST180502M4-2 PFC CS-2 537 18D1811, Description: PFC CS-2 18D1811

d5-N-EtFOSAA



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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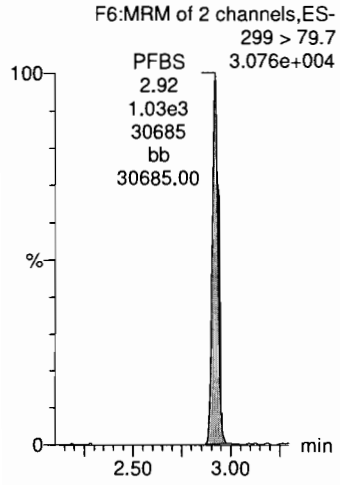
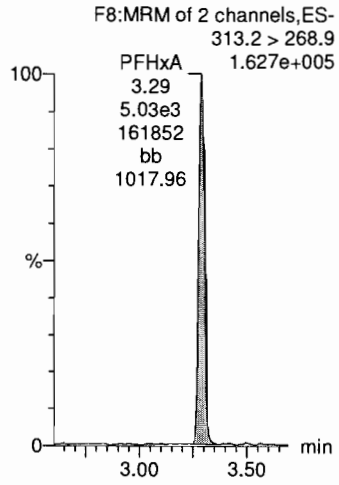
Name: 180502M4_4, Date: 02-May-2018, Time: 18:36:47, ID: ST180502M4-3 PFC CS-1 537 18D1812, Description: PFC CS-1 18D1812

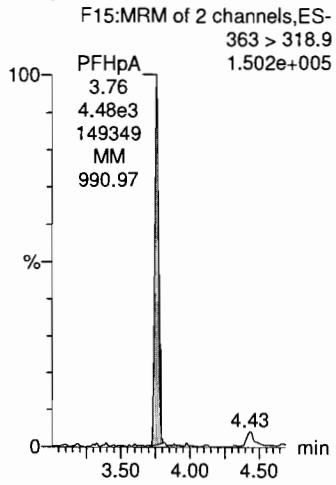
PFBS



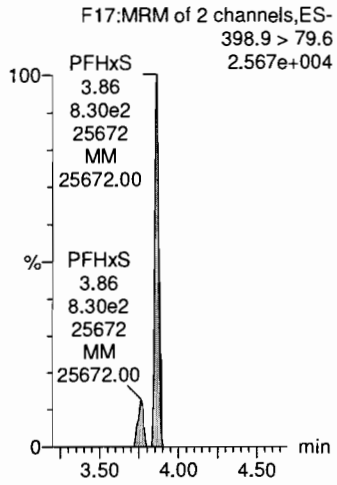
PFHxA



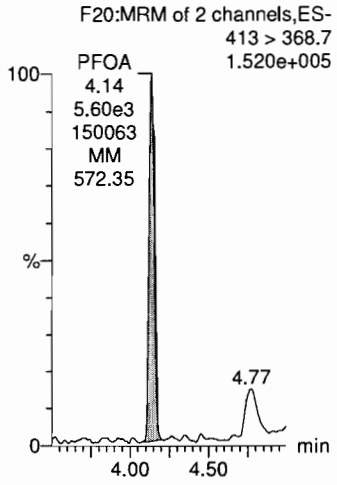
PFHpA



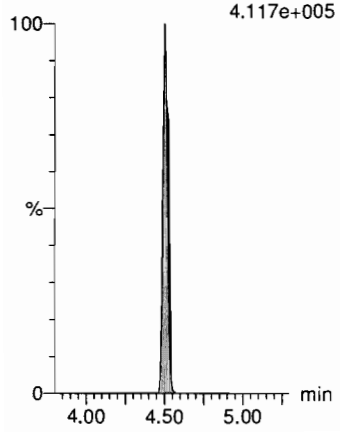
PFHxS



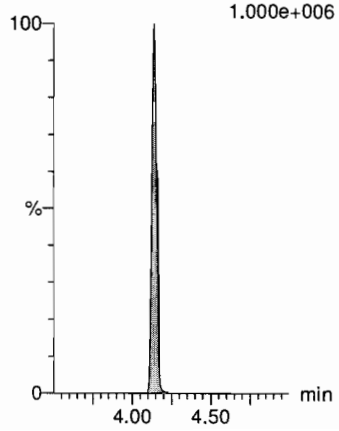
PFOA



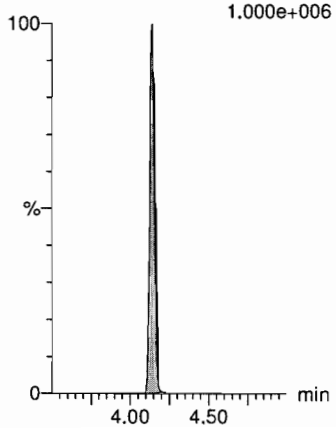
13C4-PFOS



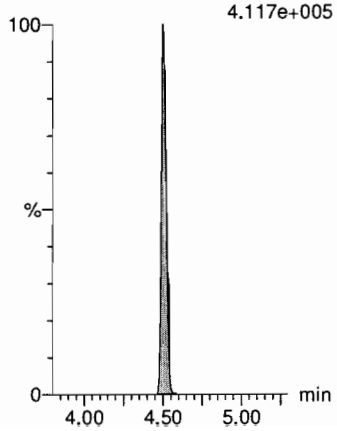
13C2-PFOA



13C2-PFOA



13C4-PFOS



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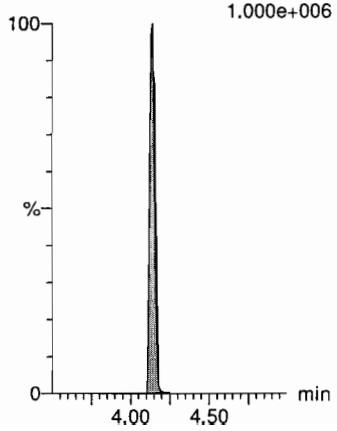

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Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_4, Date: 02-May-2018, Time: 18:36:47, ID: ST180502M4-3 PFC CS-1 537 18D1812, Description: PFC CS-1 18D1812

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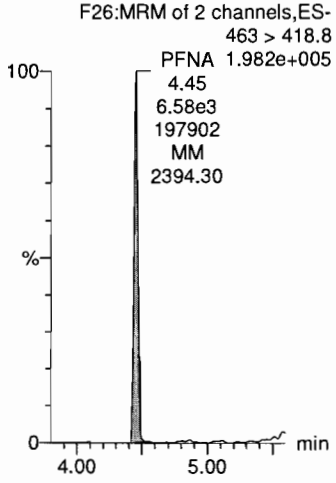

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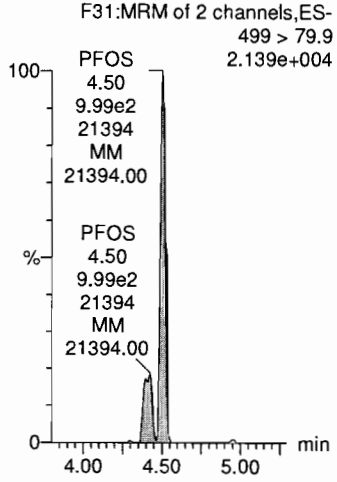

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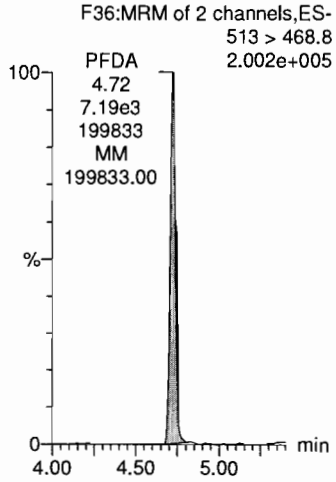
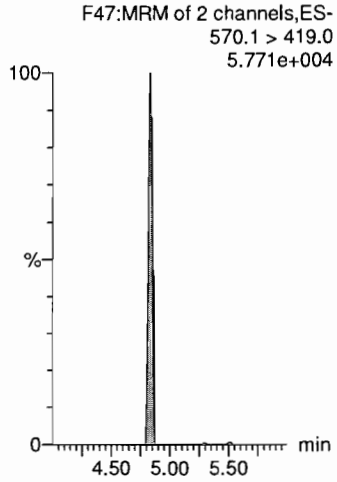


N-MeFOSAA



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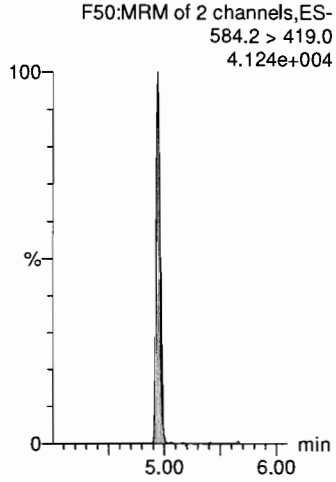

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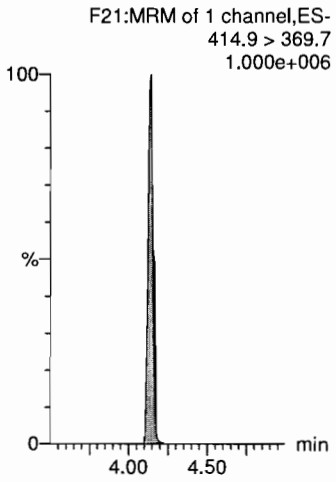
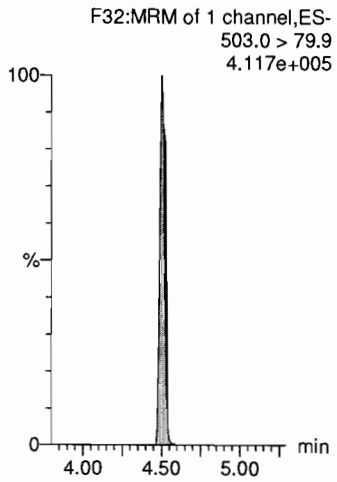


13C4-PFOS



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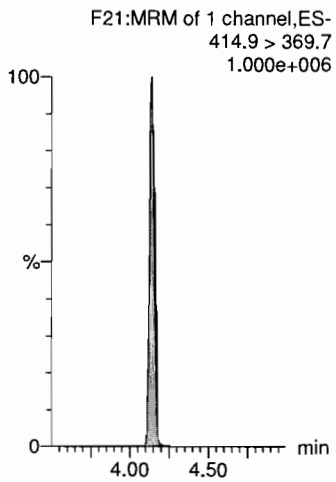

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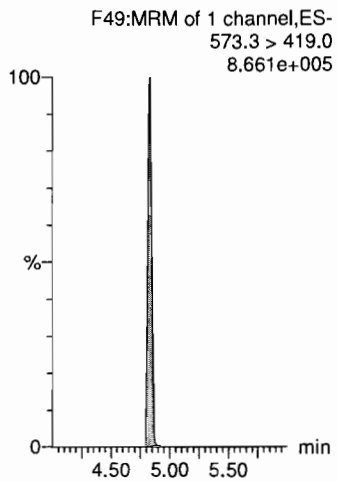

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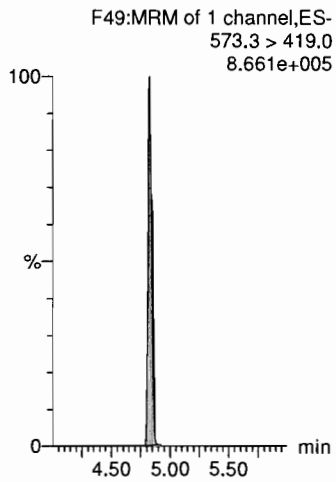

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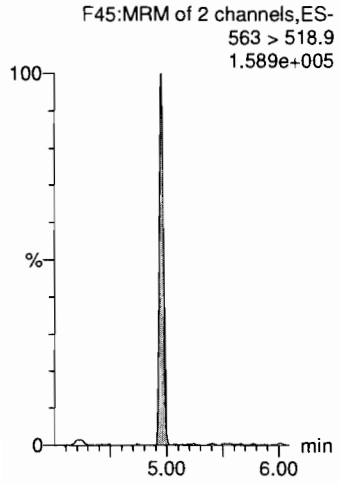
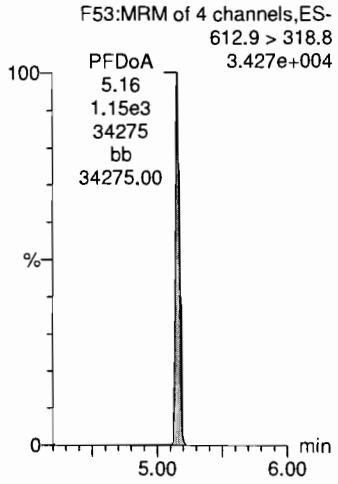
Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_4, Date: 02-May-2018, Time: 18:36:47, ID: ST180502M4-3 PFC CS-1 537 18D1812, Description: PFC CS-1 18D1812

PFUnA



PFDoA



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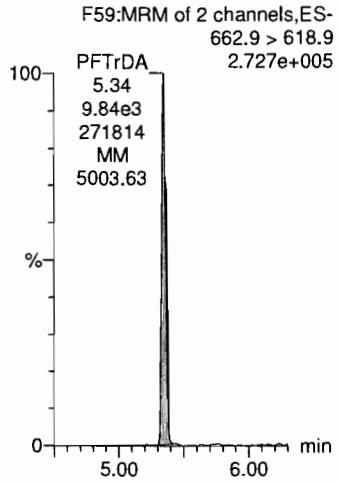
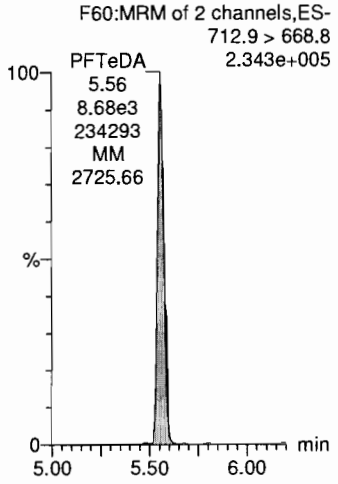
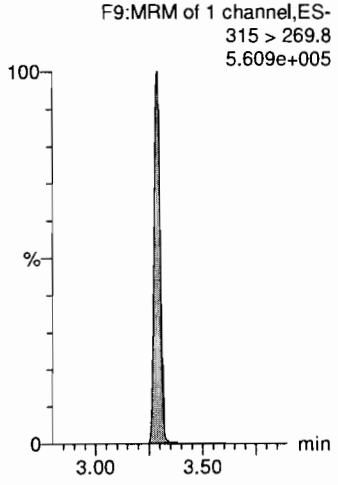


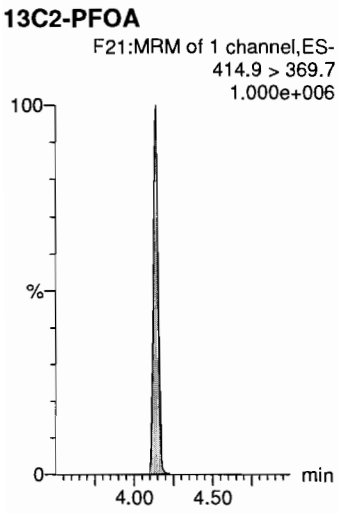
PFTeDA



13C2-PFHxA



13C2-PFOA



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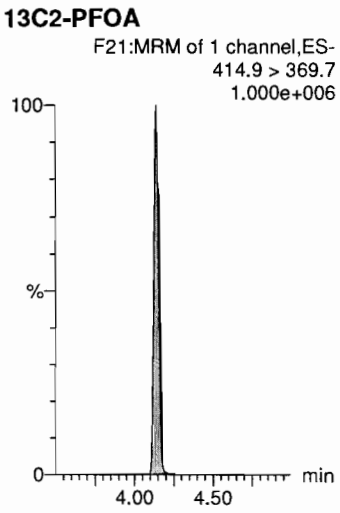

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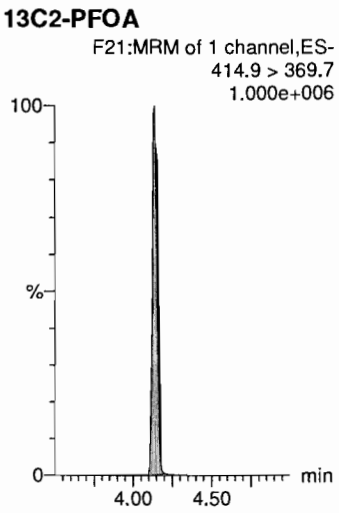

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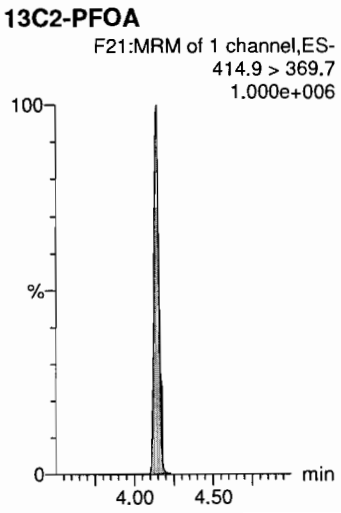

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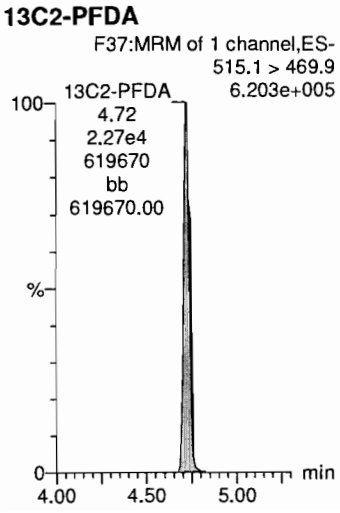

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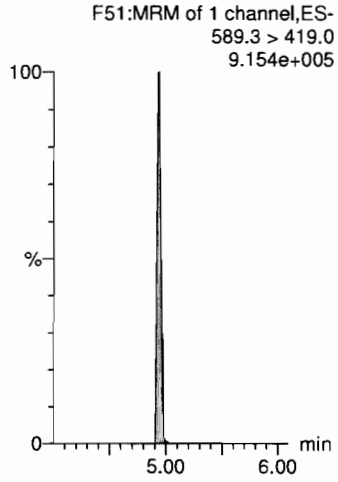
Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_4, Date: 02-May-2018, Time: 18:36:47, ID: ST180502M4-3 PFC CS-1 537 18D1812, Description: PFC CS-1 18D1812

d5-N-EtFOSAA



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Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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Name: 180502M4_5, Date: 02-May-2018, Time: 18:48:14, ID: ST180502M4-4 PFC CS0 537 18D1813, Description: PFC CS0 18D1813

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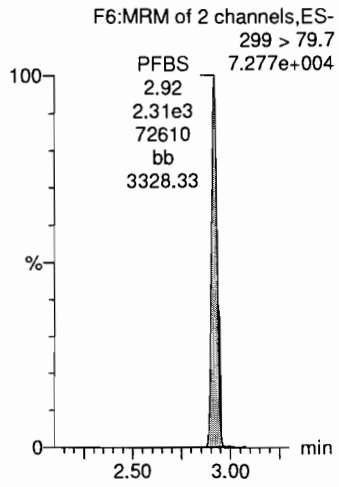

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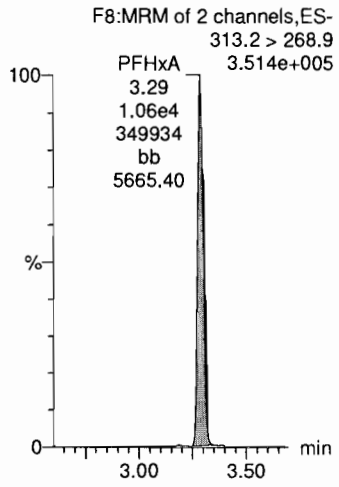
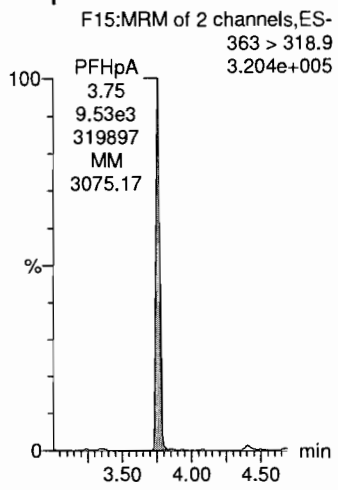


PFHpA



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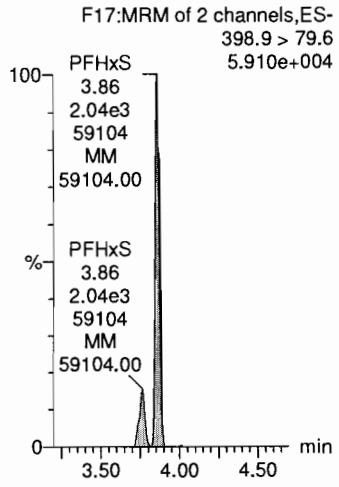
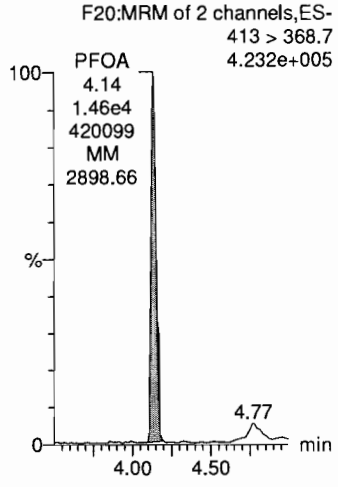
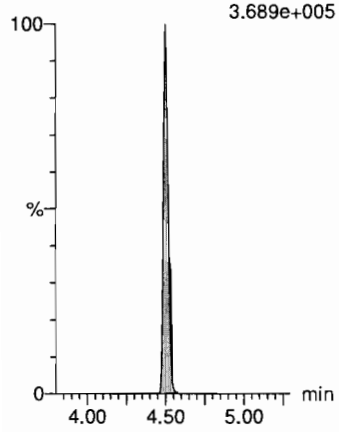


PFOA



13C4-PFOS



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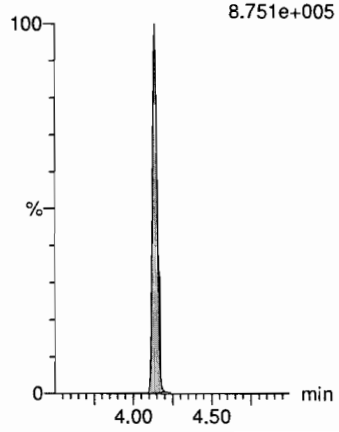

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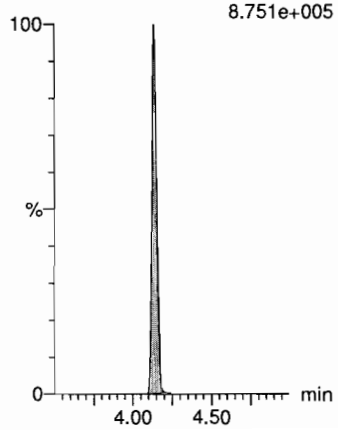

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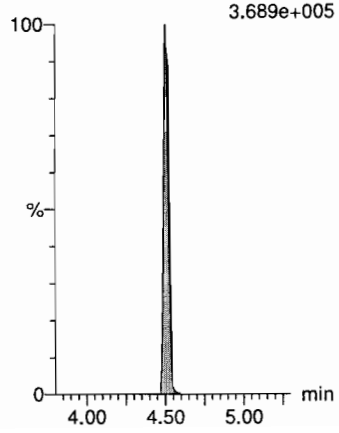

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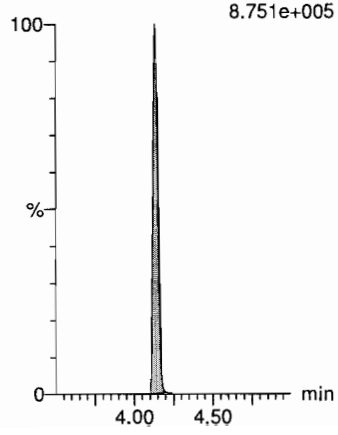

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_5, Date: 02-May-2018, Time: 18:48:14, ID: ST180502M4-4 PFC CS0 537 18D1813, Description: PFC CS0 18D1813

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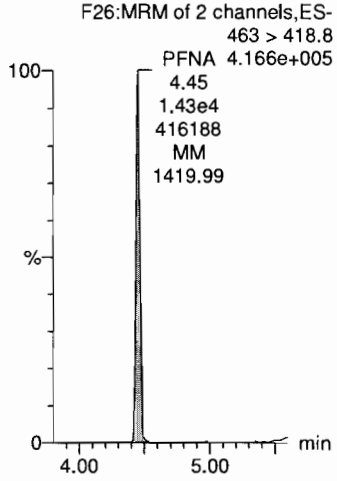
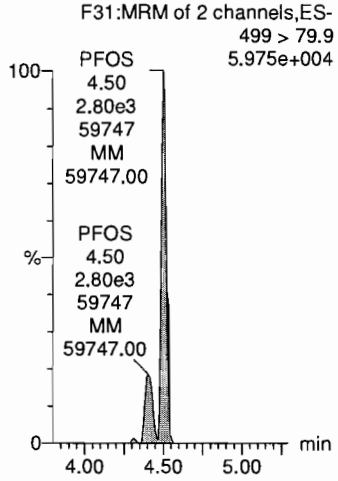


PFOS



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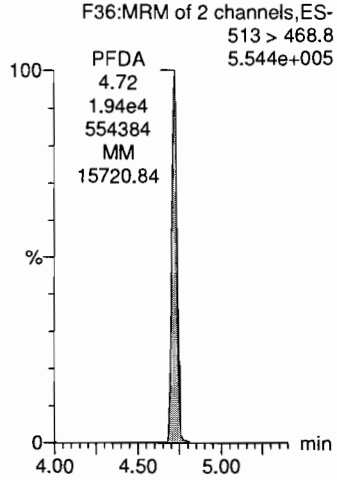
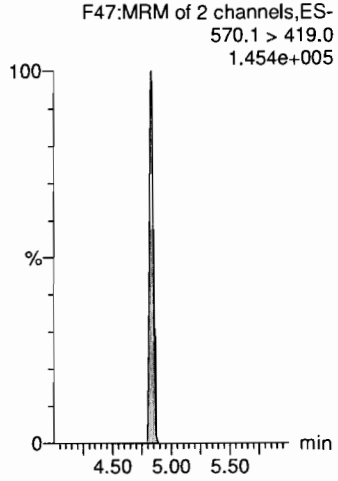


N-MeFOSAA



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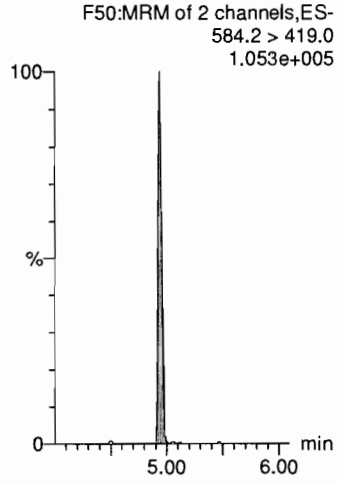
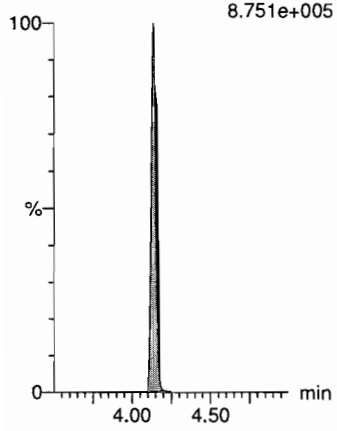


13C2-PFOA



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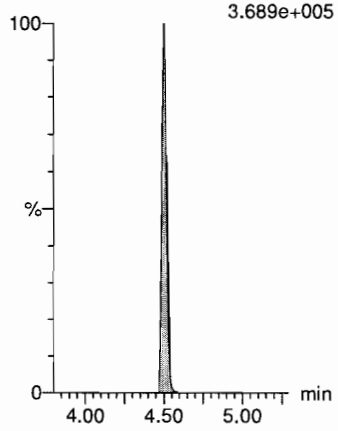

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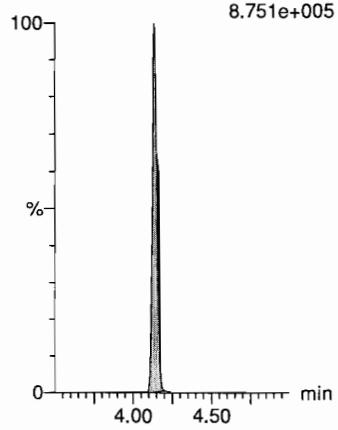
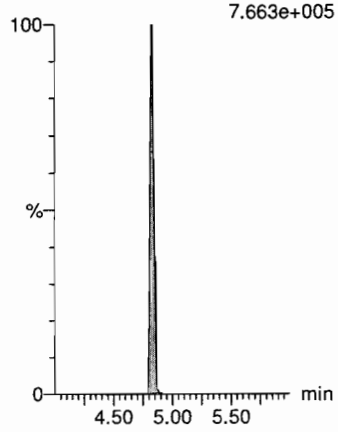


d3-N-MeFOSAA



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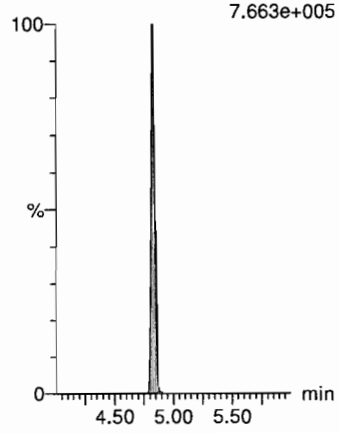

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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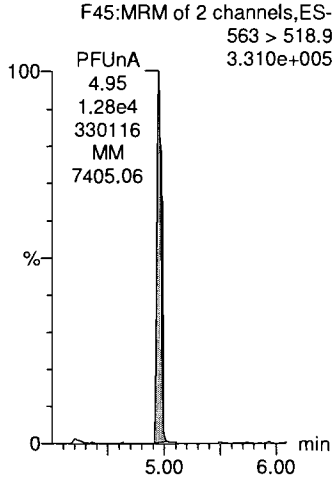
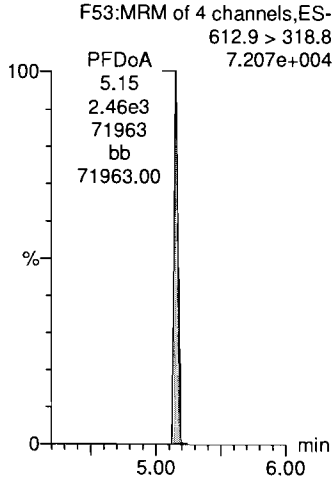
Name: 180502M4_5, Date: 02-May-2018, Time: 18:48:14, ID: ST180502M4-4 PFC CS0 537 18D1813, Description: PFC CS0 18D1813

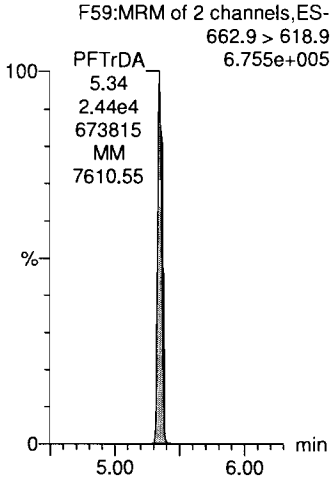
PFUnA



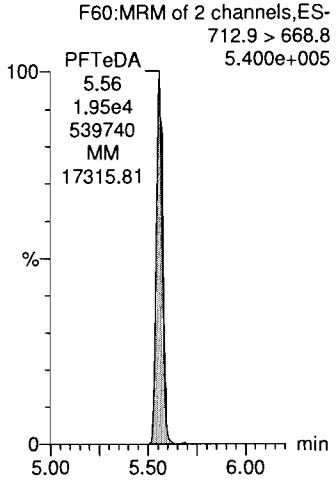
PFDoA



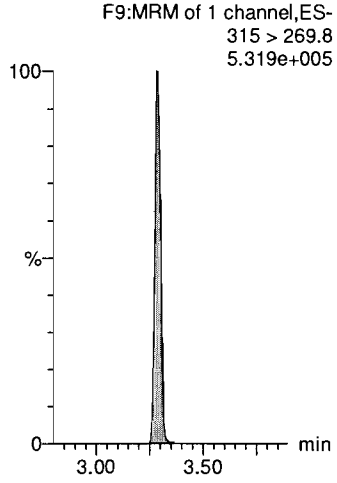
PFTrDA



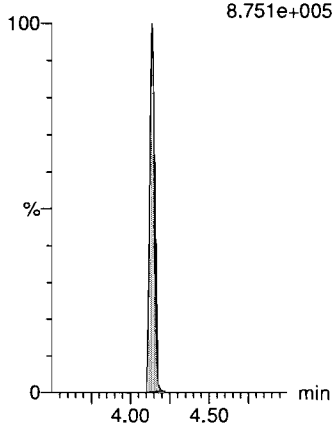
PFTeDA



13C2-PFHxA



13C2-PFOA



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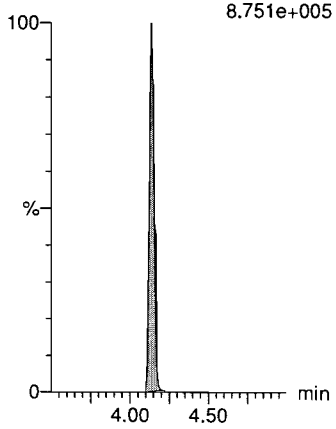

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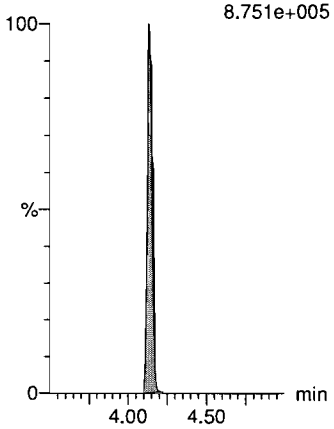
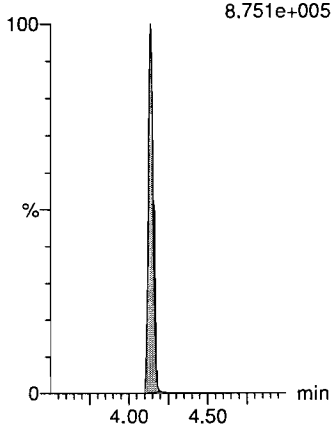


13C2-PFOA



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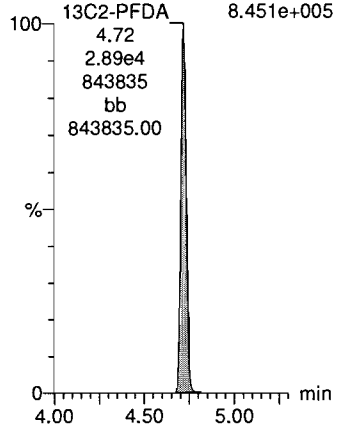
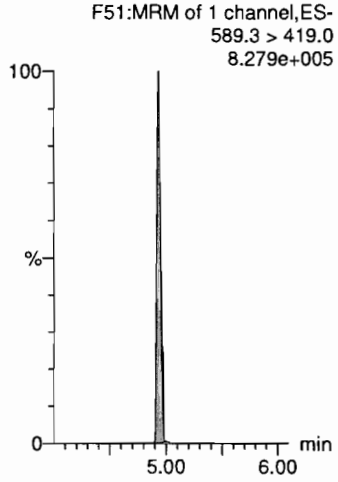


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_5, Date: 02-May-2018, Time: 18:48:14, ID: ST180502M4-4 PFC CS0 537 18D1813, Description: PFC CS0 18D1813

d5-N-EtFOSAA



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_6, Date: 02-May-2018, Time: 18:59:43, ID: ST180502M4-5 PFC CS1 537 18D1814, Description: PFC CS1 18D1814

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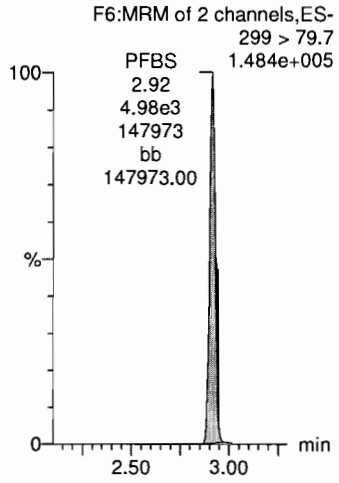

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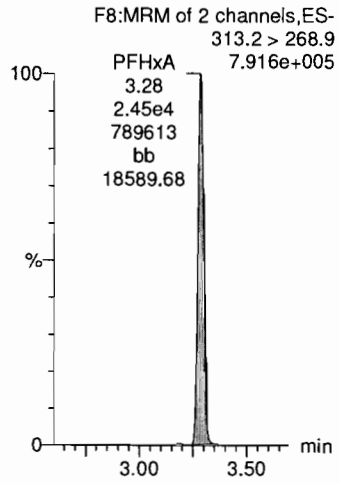

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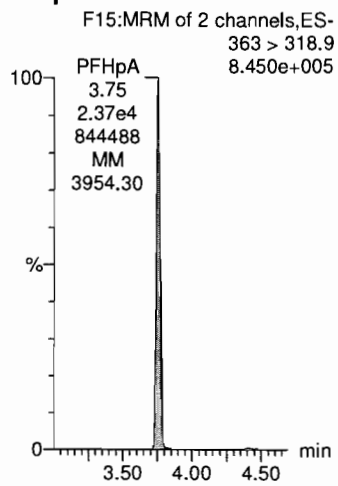

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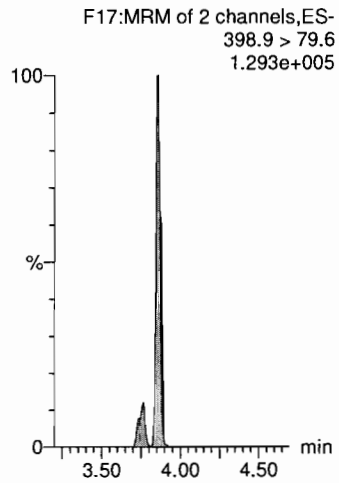
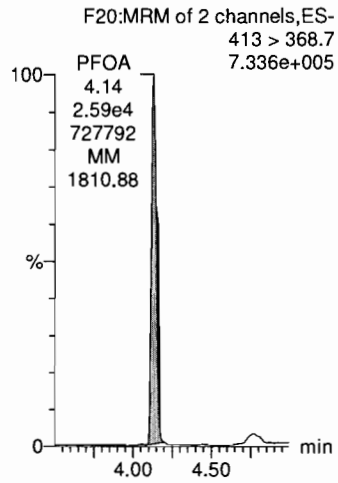
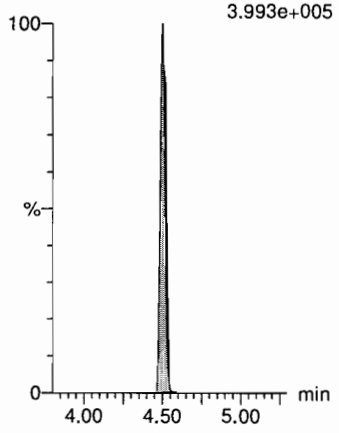


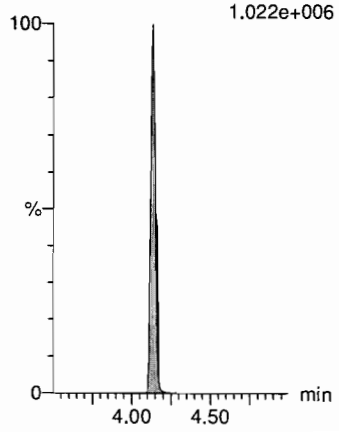
PFOA



13C4-PFOS



13C2-PFOA



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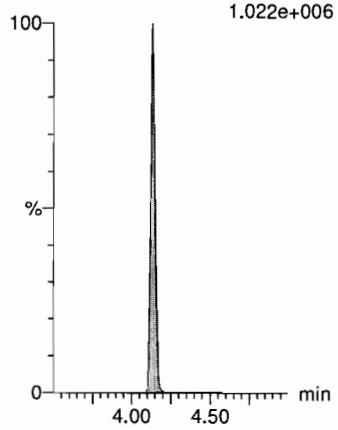

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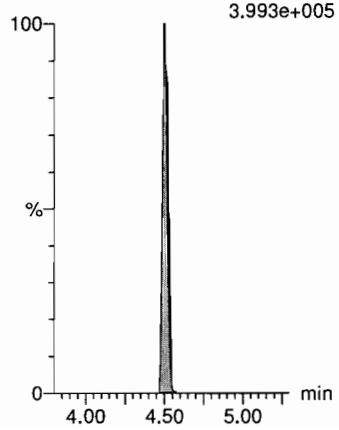

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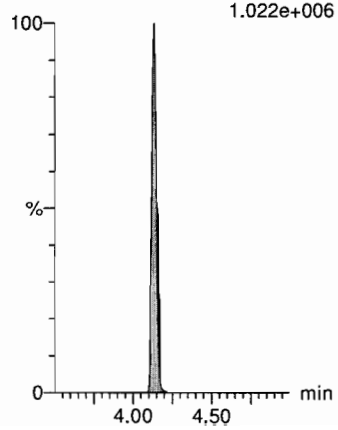

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Name: 180502M4_6, Date: 02-May-2018, Time: 18:59:43, ID: ST180502M4-5 PFC CS1 537 18D1814, Description: PFC CS1 18D1814

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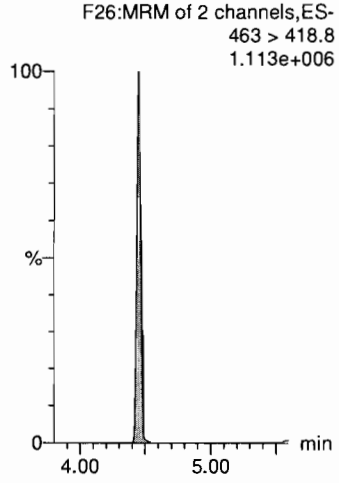
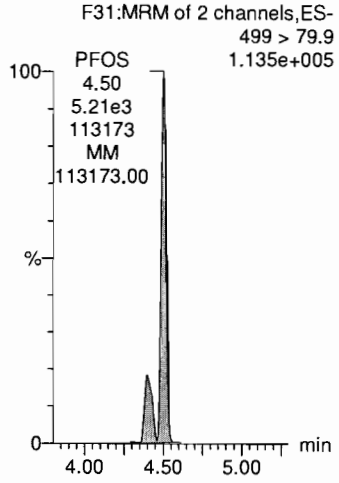


PFOS



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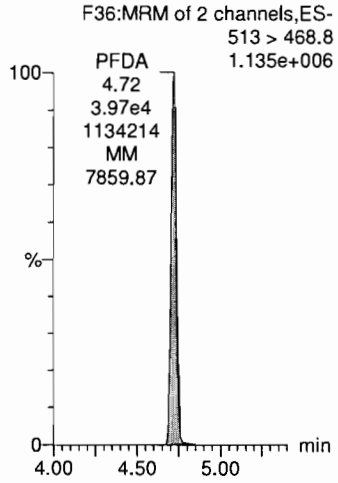

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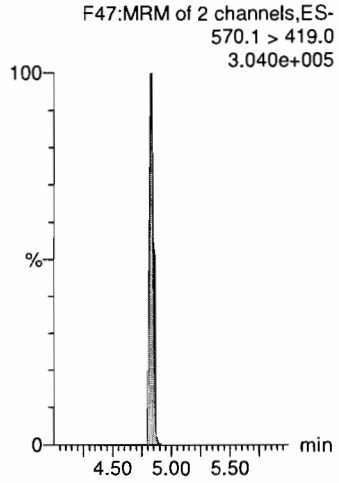

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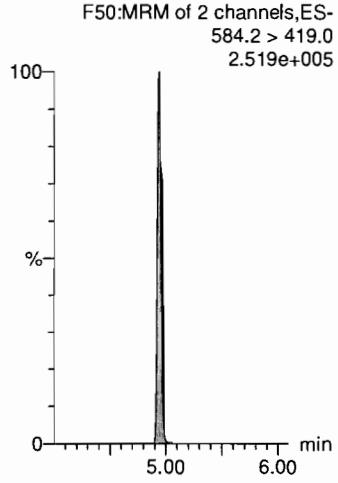

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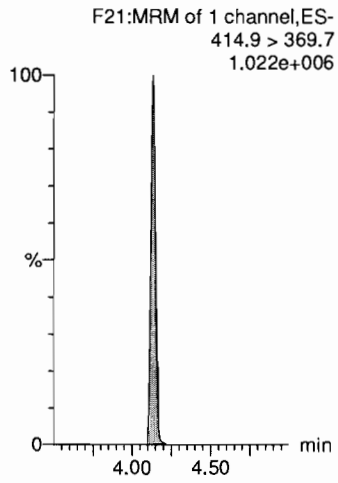

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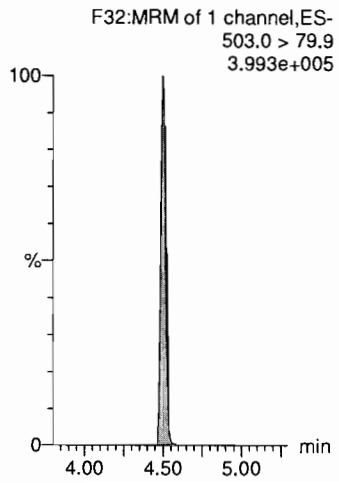

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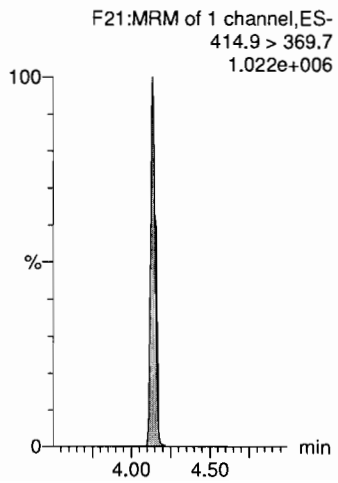

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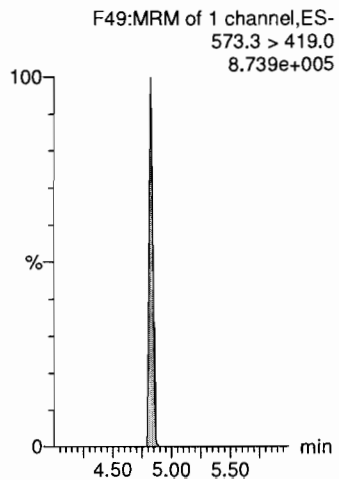

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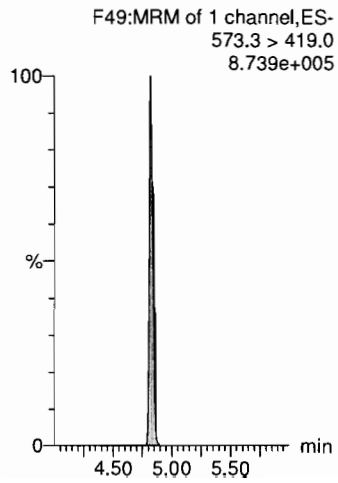

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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Name: 180502M4_6, Date: 02-May-2018, Time: 18:59:43, ID: ST180502M4-5 PFC CS1 537 18D1814, Description: PFC CS1 18D1814

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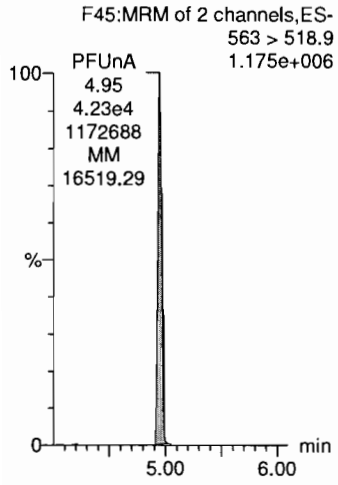

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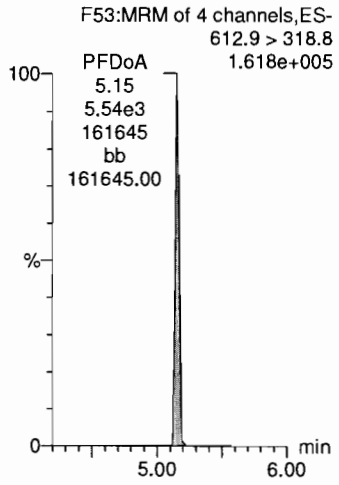

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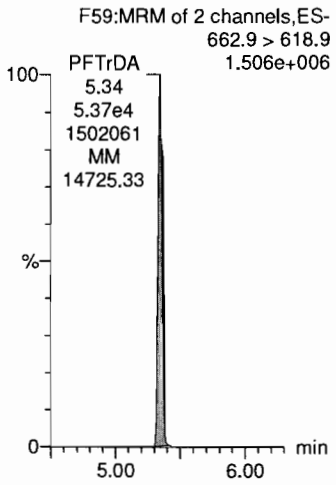

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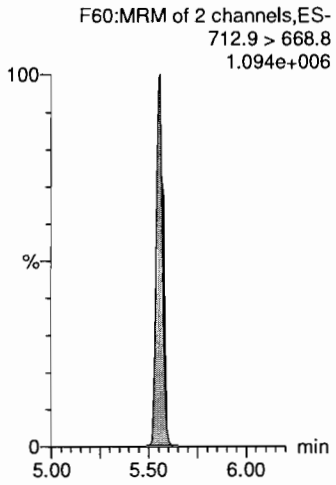
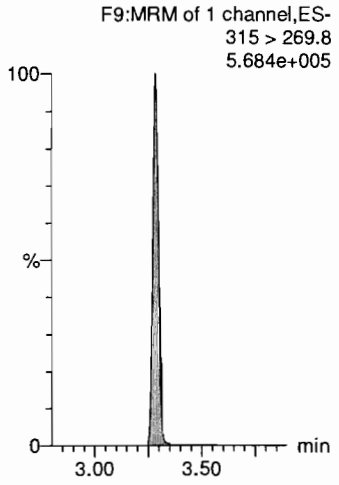


13C2-PFHxA



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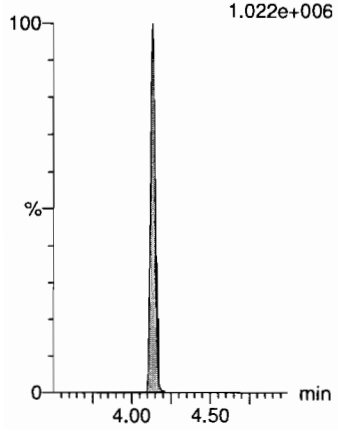

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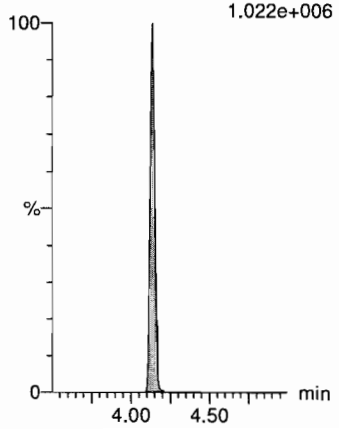

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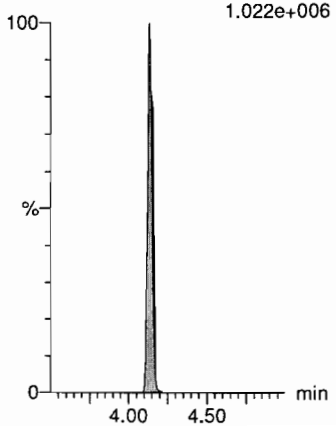

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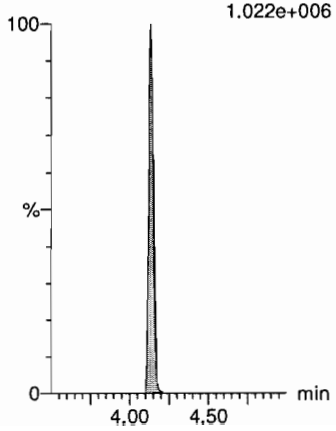

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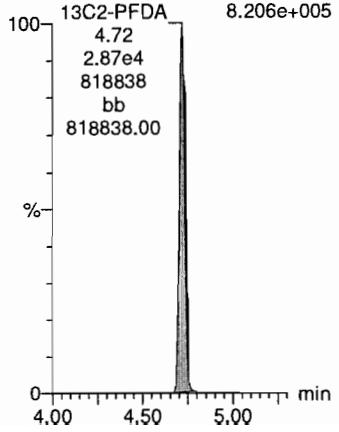

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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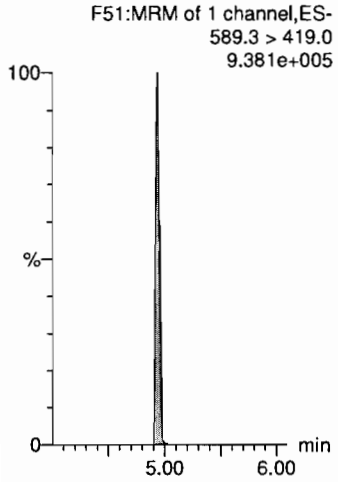
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_6, Date: 02-May-2018, Time: 18:59:43, ID: ST180502M4-5 PFC CS1 537 18D1814, Description: PFC CS1 18D1814

d5-N-EtFOSAA



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Name: 180502M4_7, Date: 02-May-2018, Time: 19:11:13, ID: ST180502M4-6 PFC CS2 537 18D2412, Description: PFC CS2 18D2412

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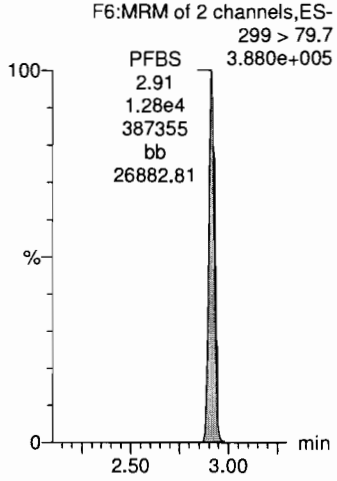
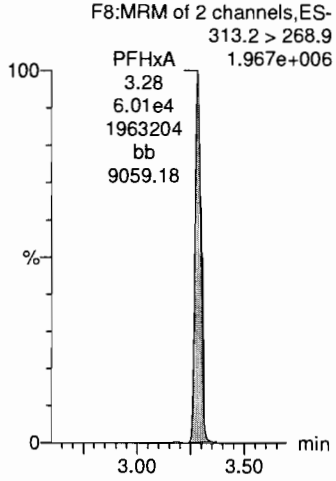
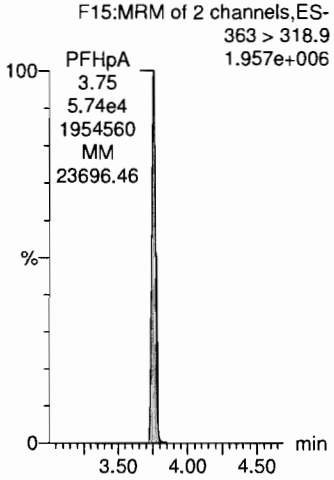


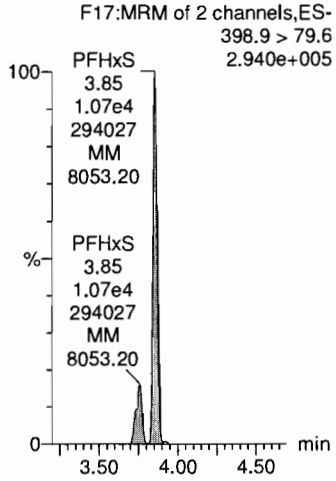
PFHxA



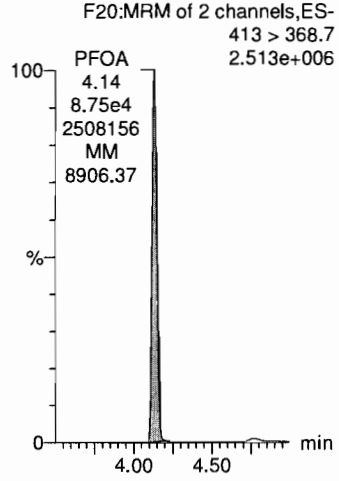
PFHpA



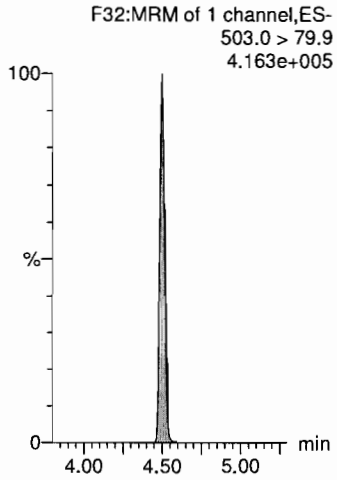
PFHxS



PFOA



13C4-PFOS



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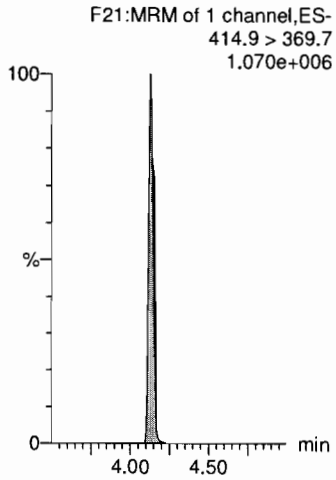

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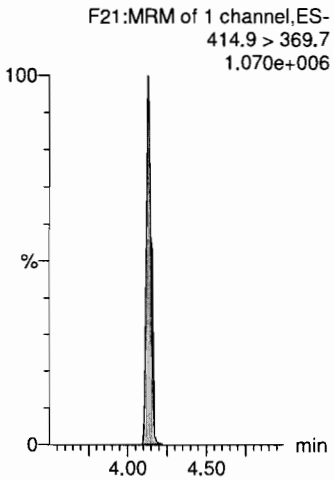

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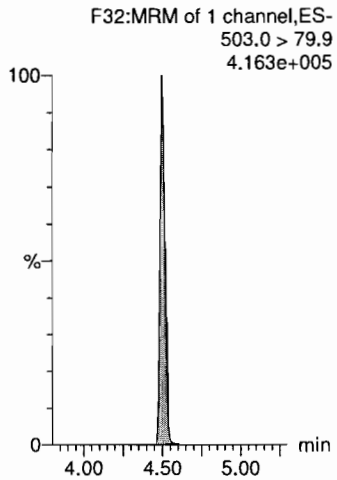

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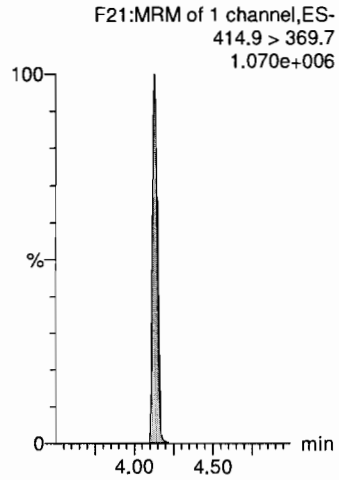

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_7, Date: 02-May-2018, Time: 19:11:13, ID: ST180502M4-6 PFC CS2 537 18D2412, Description: PFC CS2 18D2412

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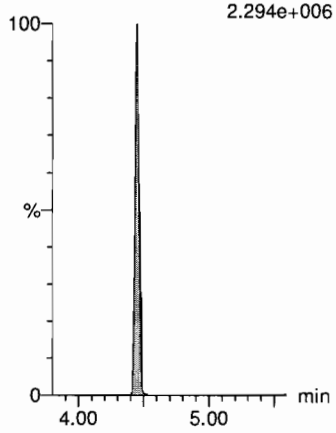

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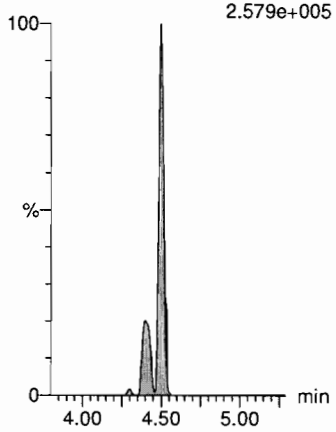

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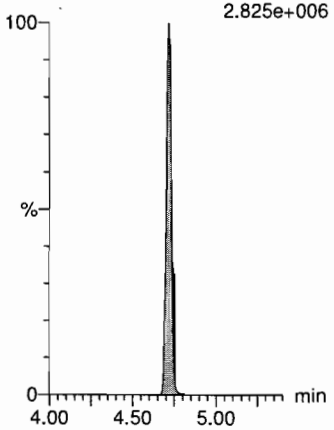

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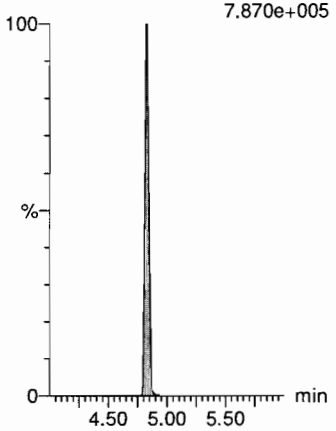

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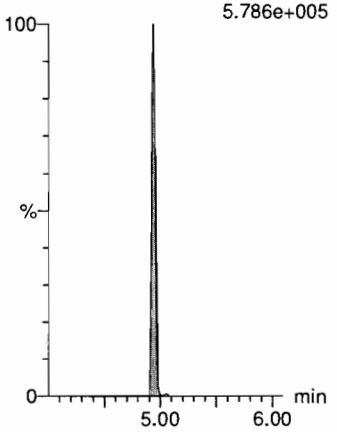

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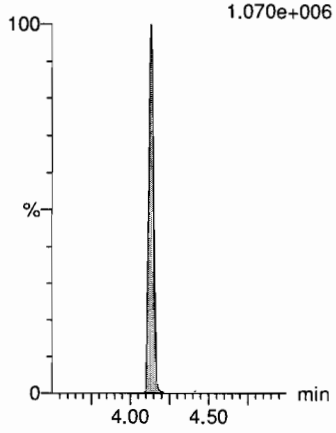

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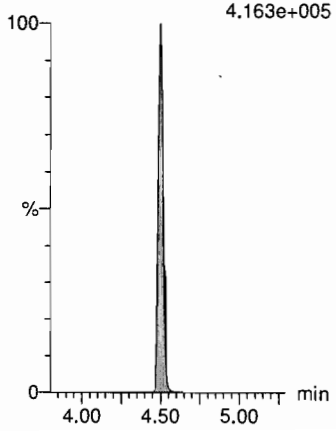

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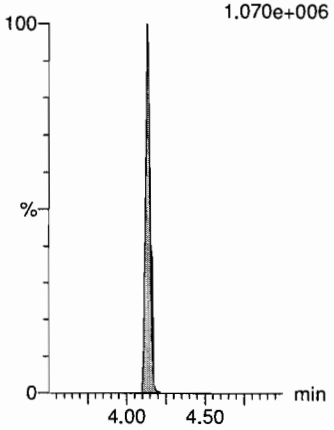

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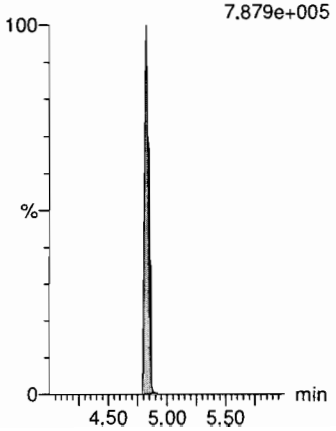

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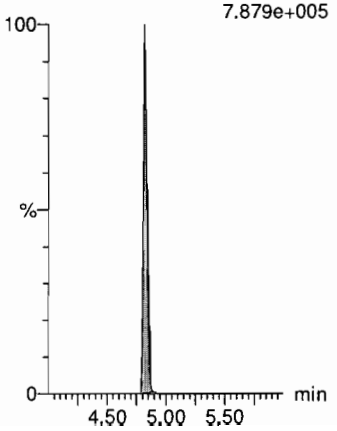

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Name: 180502M4_7, Date: 02-May-2018, Time: 19:11:13, ID: ST180502M4-6 PFC CS2 537 18D2412, Description: PFC CS2 18D2412

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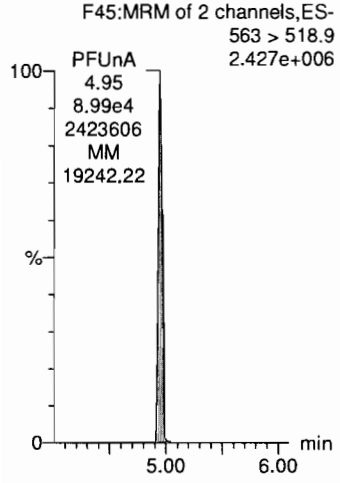

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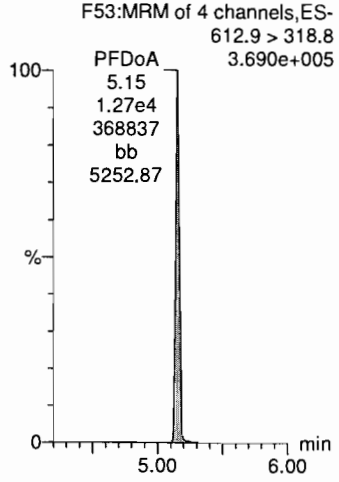

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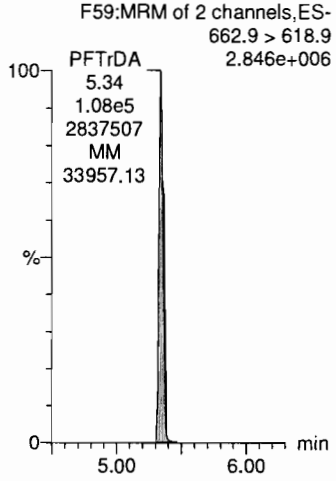

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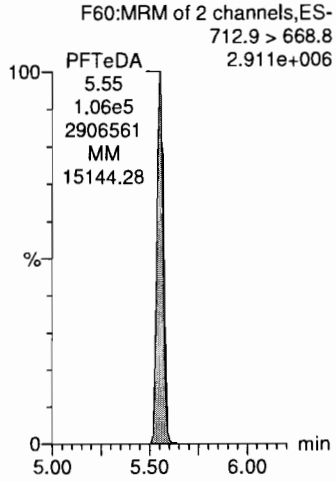

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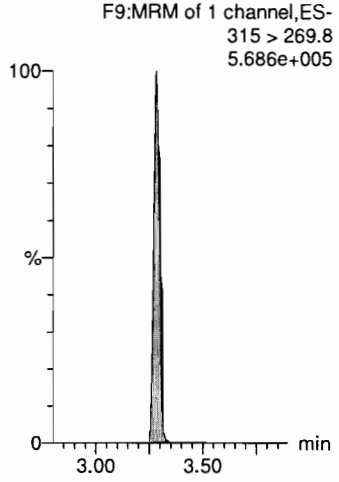

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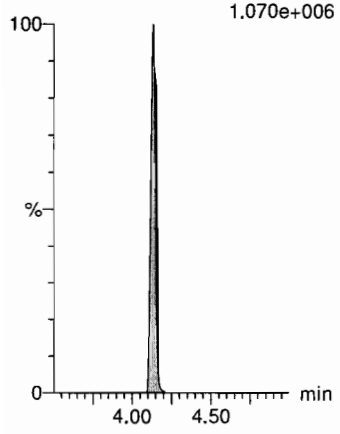

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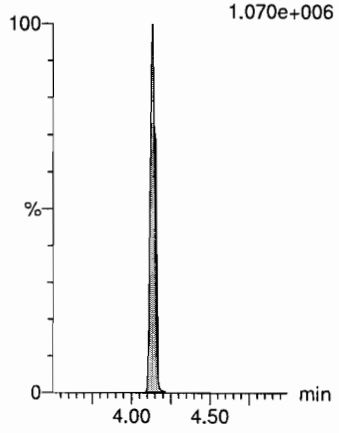

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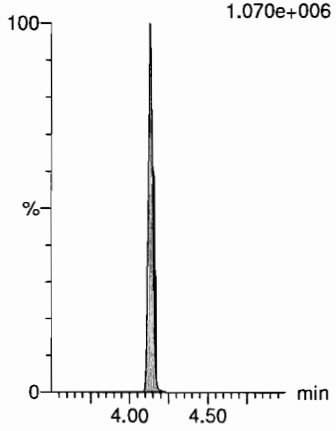

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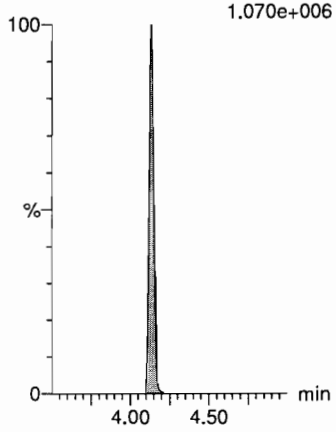

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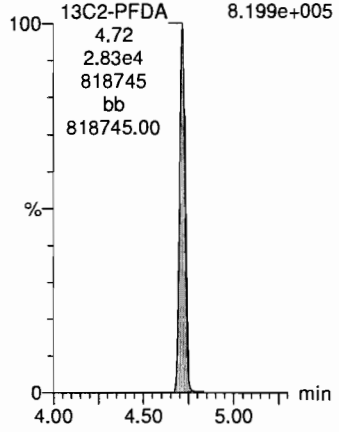

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Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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Name: 180502M4_7, Date: 02-May-2018, Time: 19:11:13, ID: ST180502M4-6 PFC CS2 537 18D2412, Description: PFC CS2 18D2412

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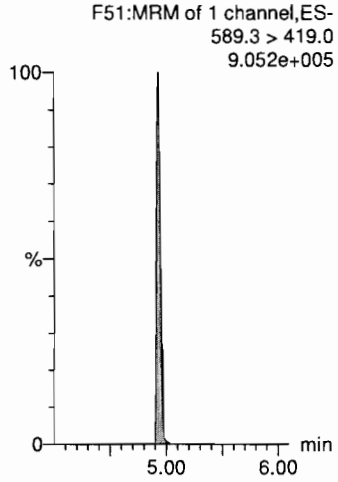

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Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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Name: 180502M4_8, Date: 02-May-2018, Time: 19:22:43, ID: ST180502M4-7 PFC CS3 537 18D1816, Description: PFC CS3 18D1816

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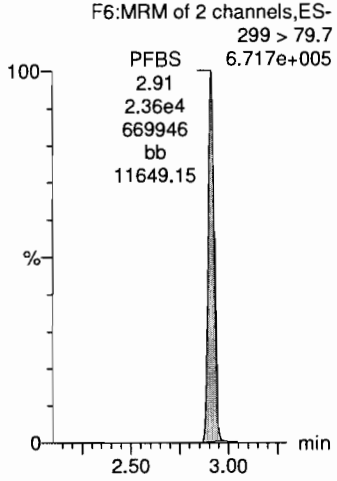

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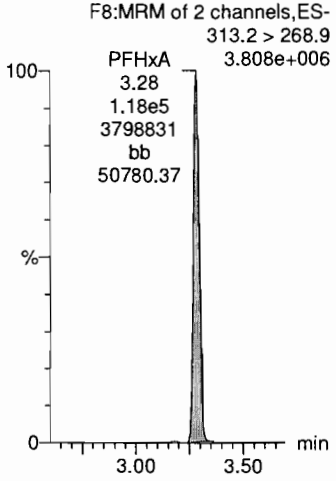

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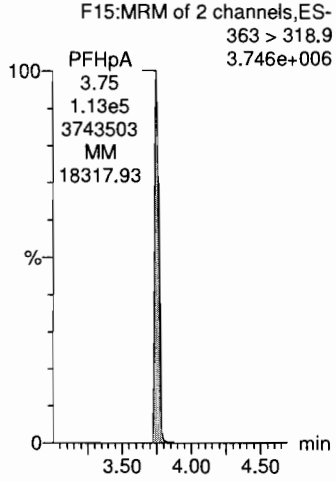

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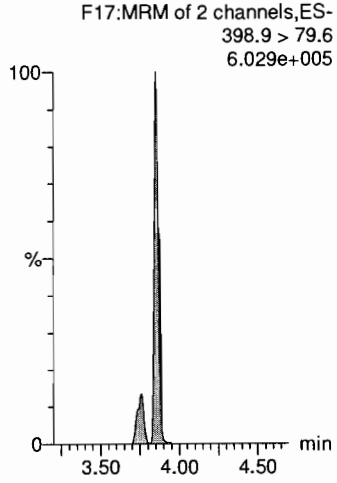

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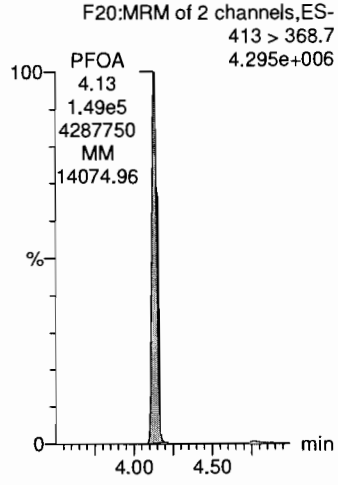

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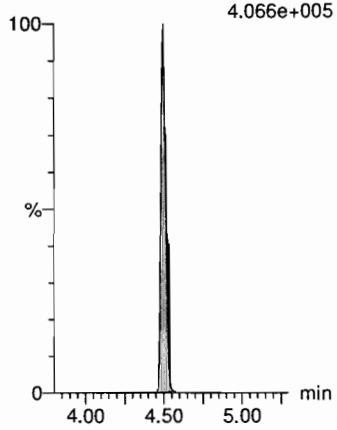

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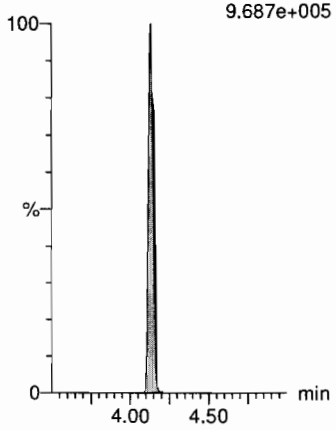

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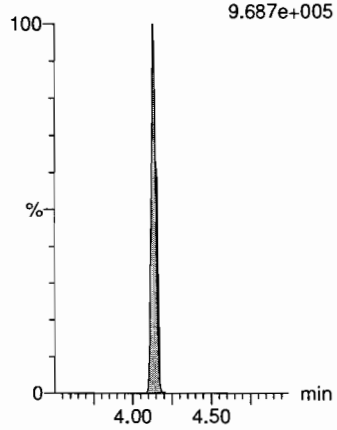

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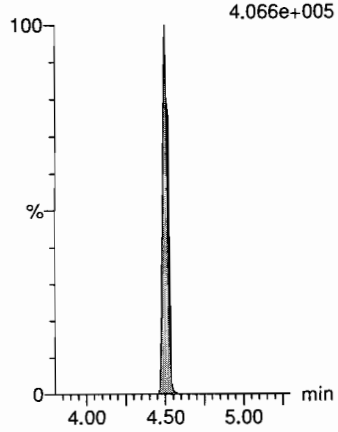

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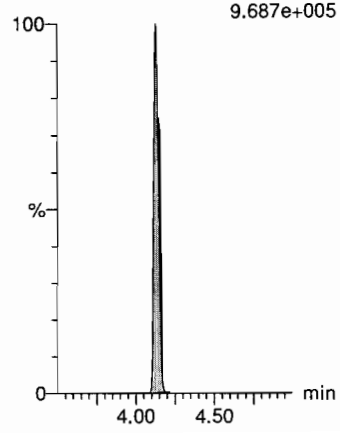

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Name: 180502M4_8, Date: 02-May-2018, Time: 19:22:43, ID: ST180502M4-7 PFC CS3 537 18D1816, Description: PFC CS3 18D1816

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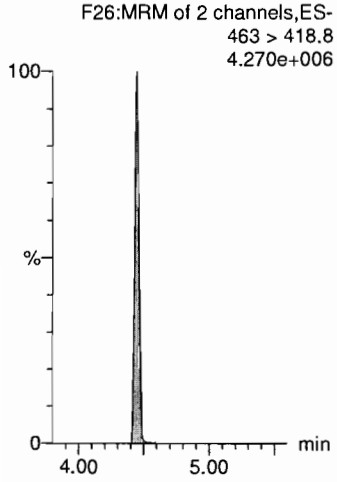

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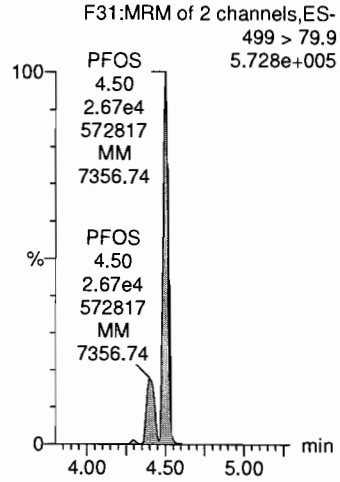

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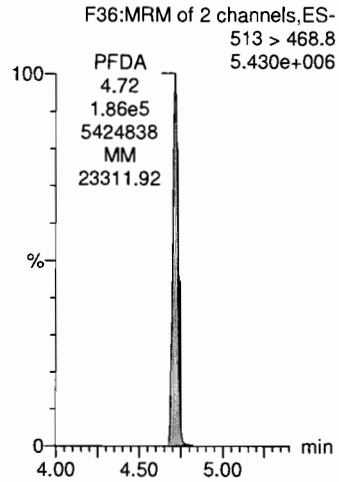

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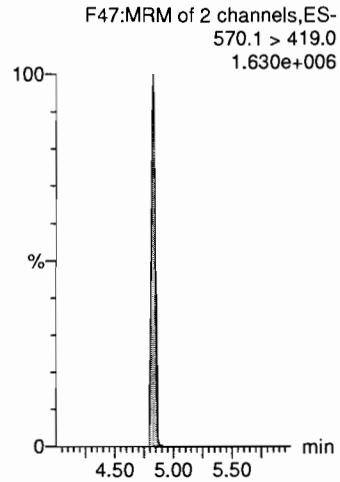

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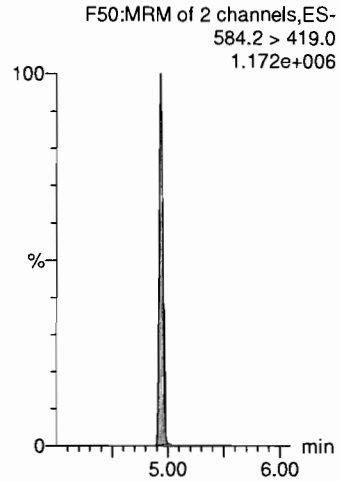

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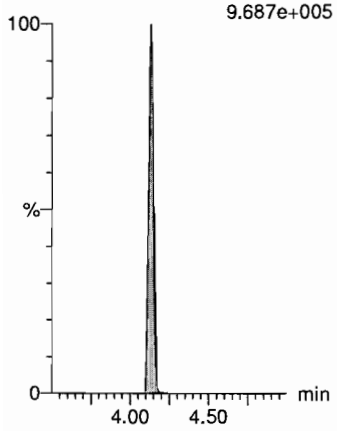

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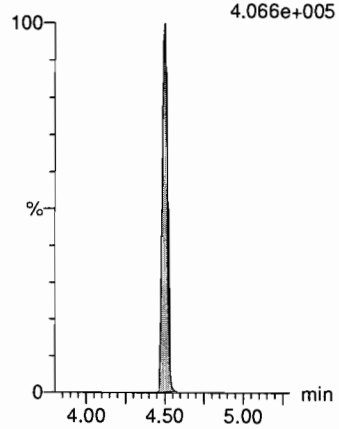

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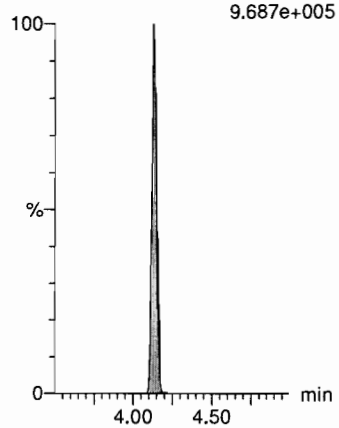

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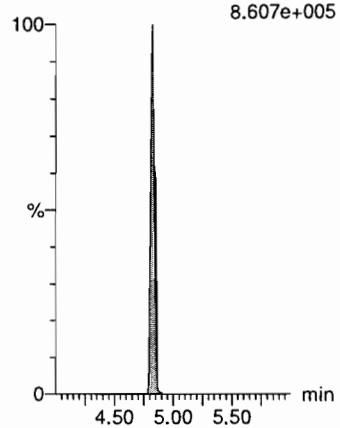

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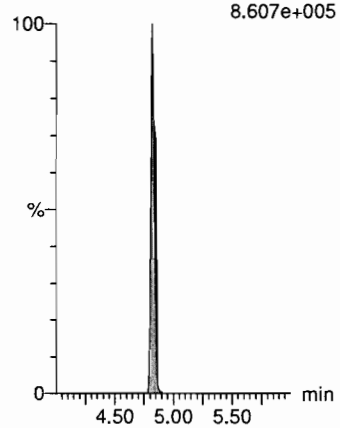

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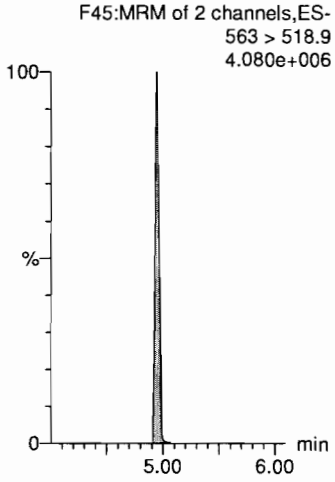

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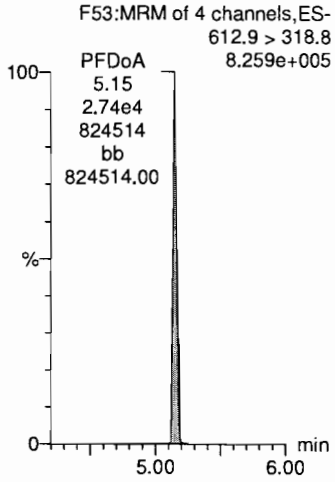

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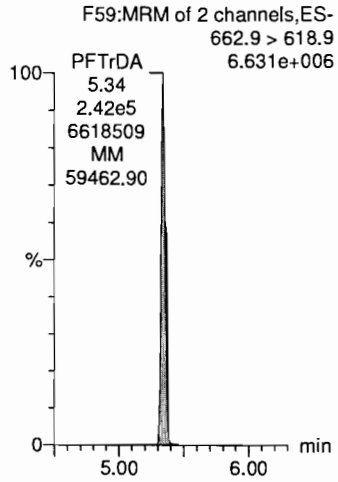

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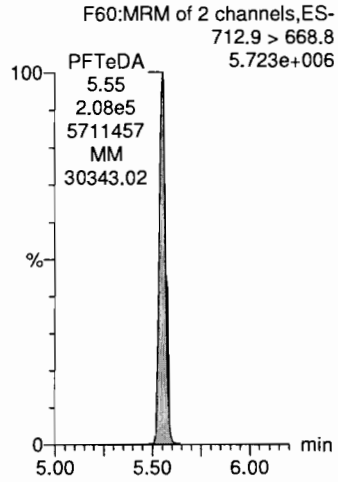

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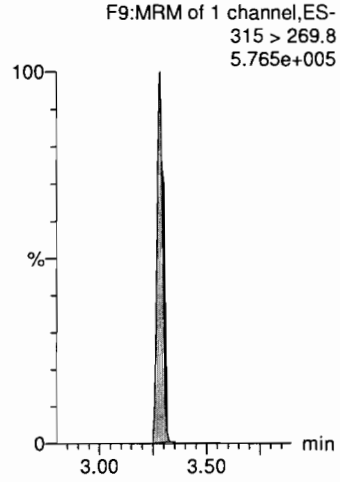

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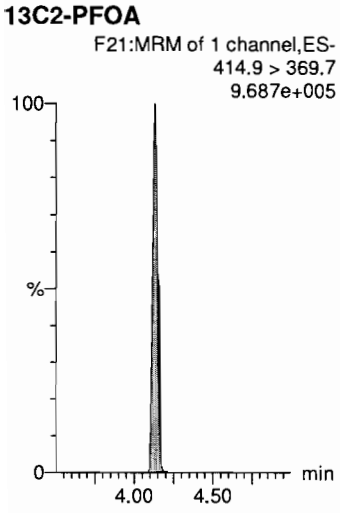

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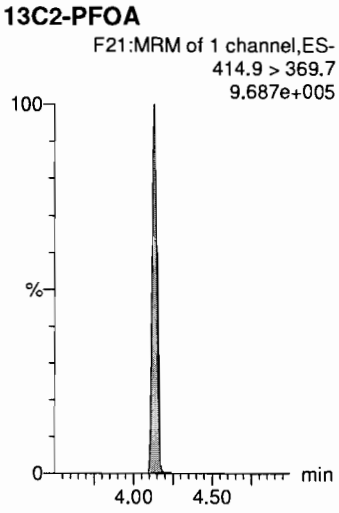

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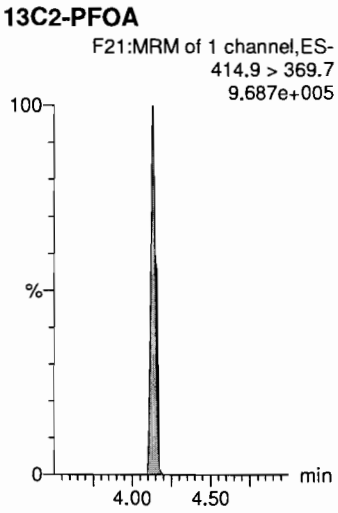

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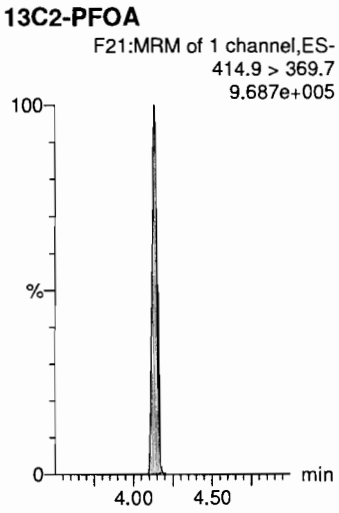
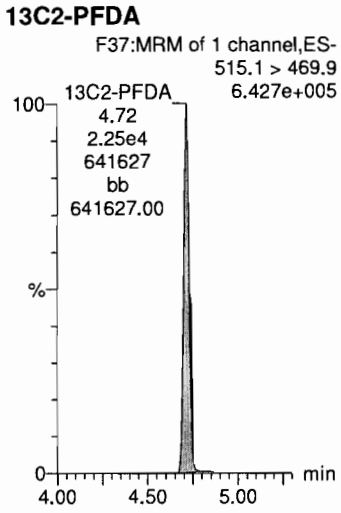


13C2-PFDA

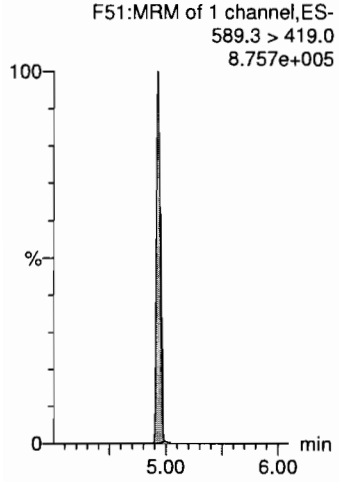


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_8, Date: 02-May-2018, Time: 19:22:43, ID: ST180502M4-7 PFC CS3 537 18D1816, Description: PFC CS3 18D1816

d5-N-EtFOSAA



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_9, Date: 02-May-2018, Time: 19:34:10, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

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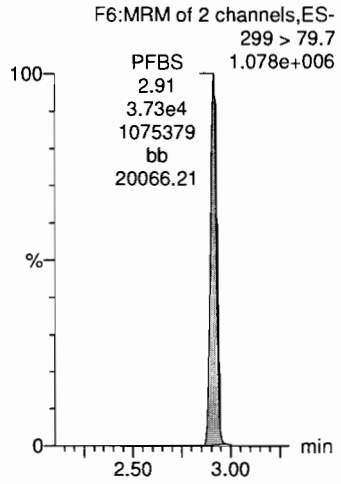
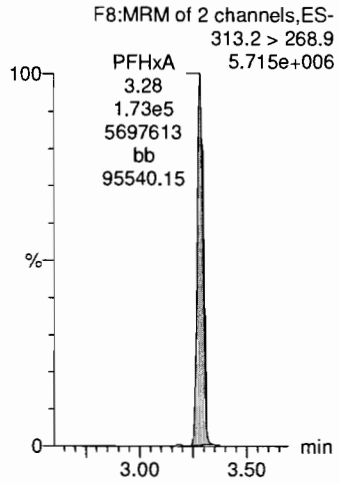
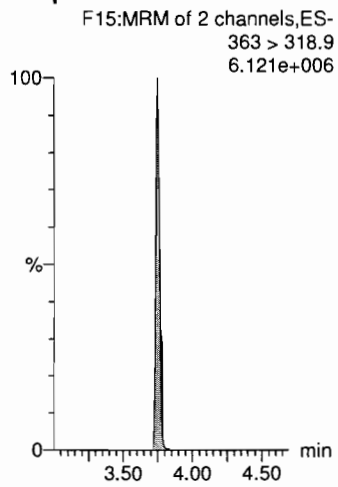


PFHxA



PFHpA



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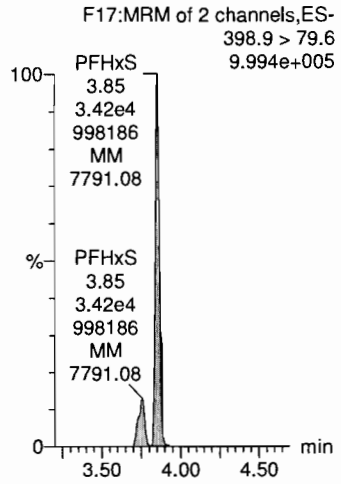
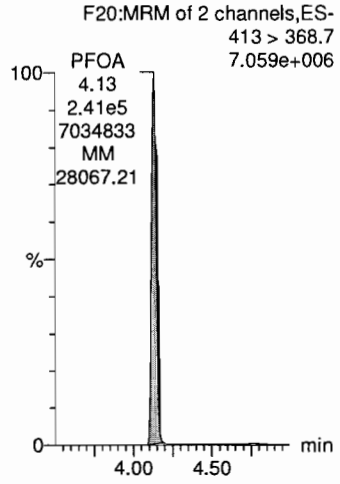
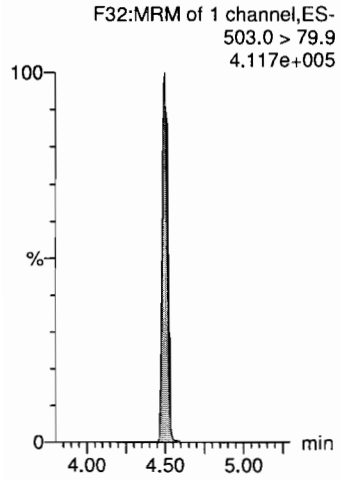


PFOA



13C4-PFOS



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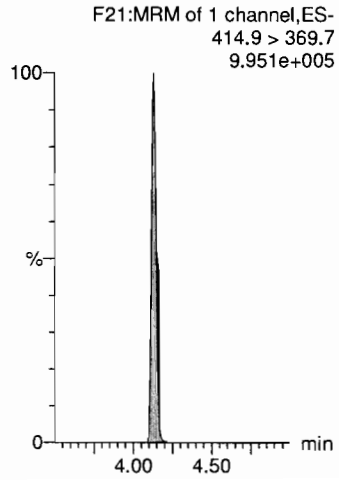

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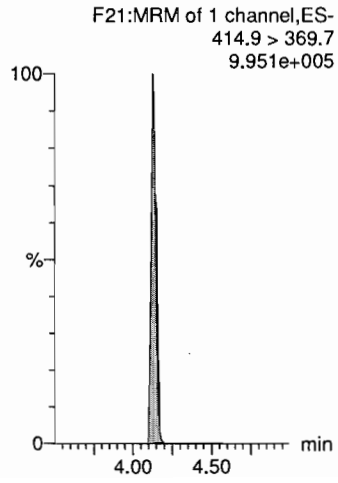

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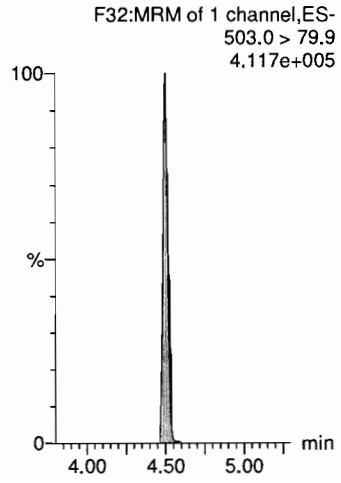

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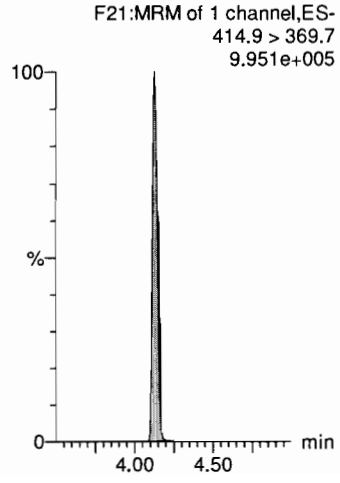
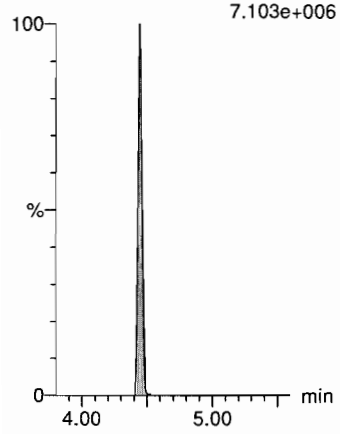


Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_9, Date: 02-May-2018, Time: 19:34:10, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

PFNA



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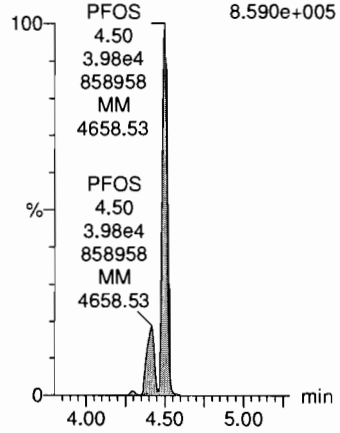

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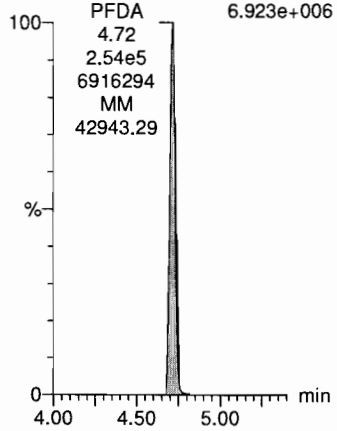

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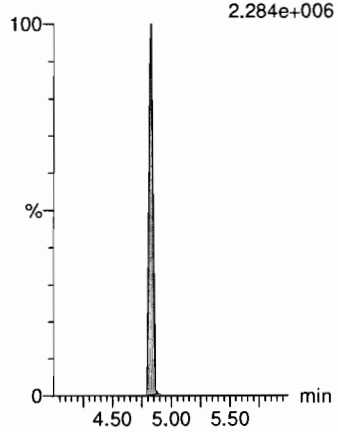

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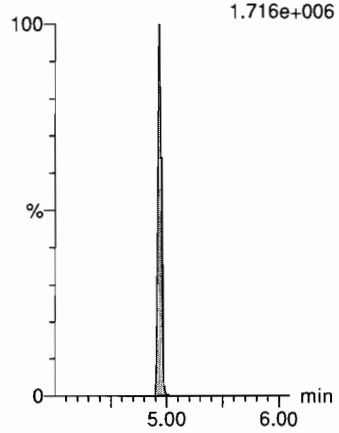

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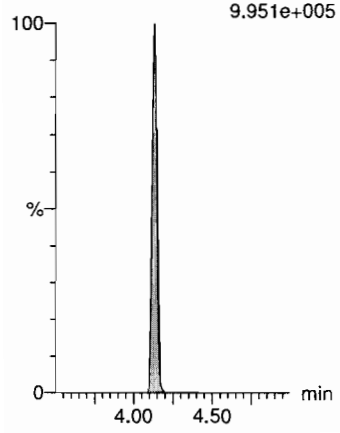

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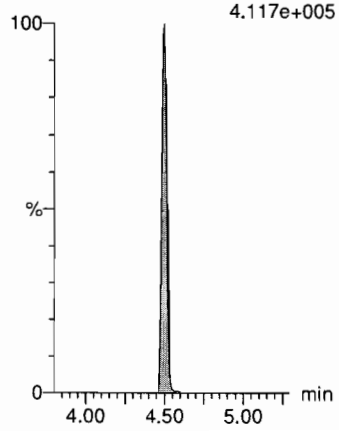

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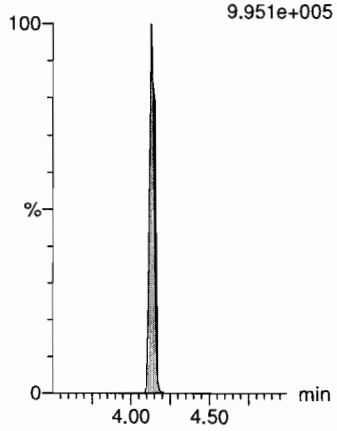

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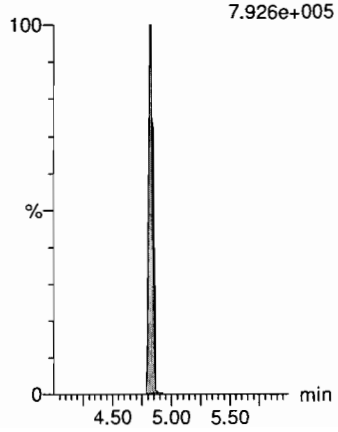

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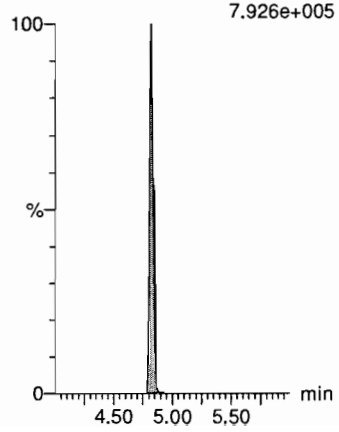

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_9, Date: 02-May-2018, Time: 19:34:10, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

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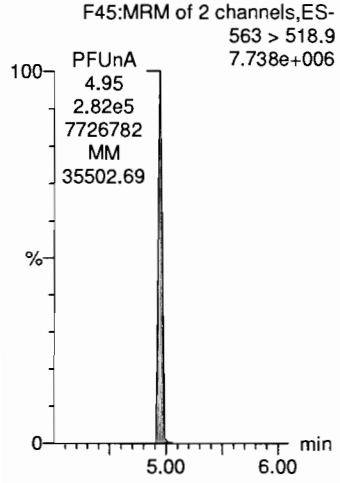

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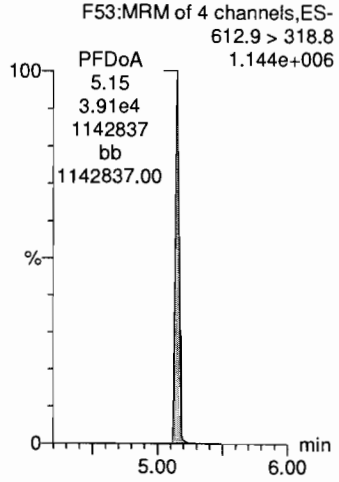

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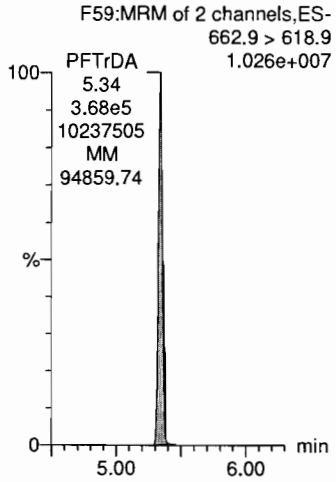
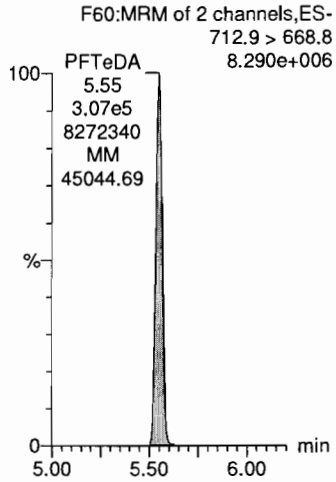


PFTeDA



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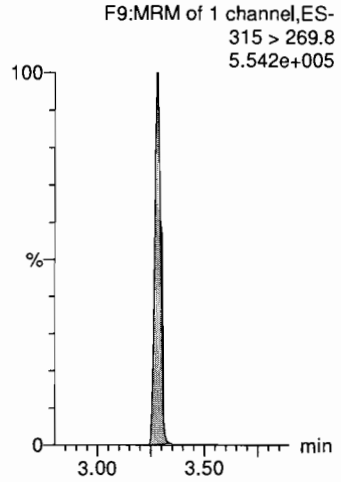

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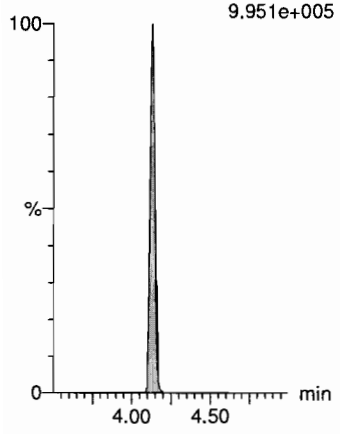

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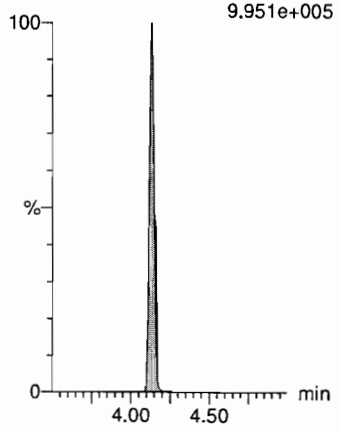

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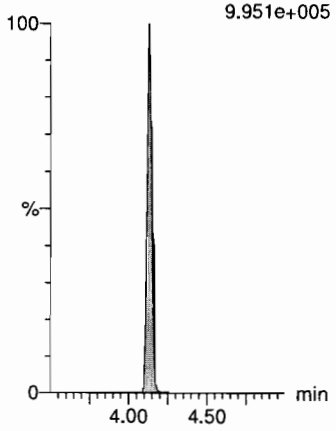

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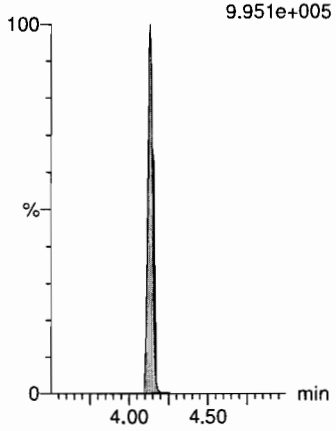
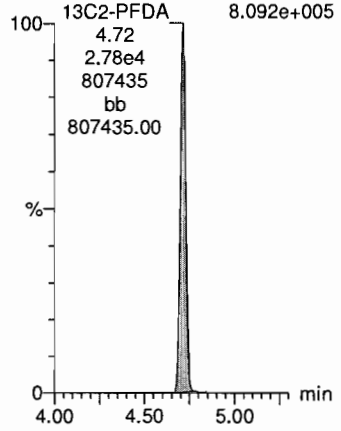


13C2-PFDA



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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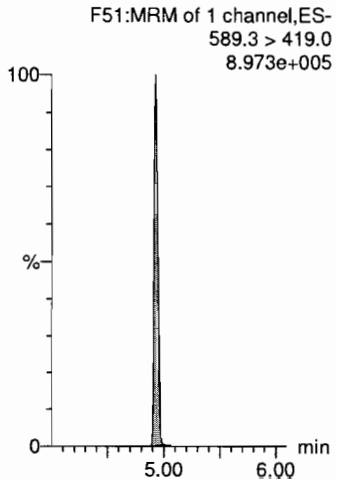
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_9, Date: 02-May-2018, Time: 19:34:10, ID: ST180502M4-8 PFC CS4 537 18D1817, Description: PFC CS4 18D1817

d5-N-EtFOSAA



Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

Last Altered: Thursday, May 03, 2018 11:33:06 Pacific Daylight Time
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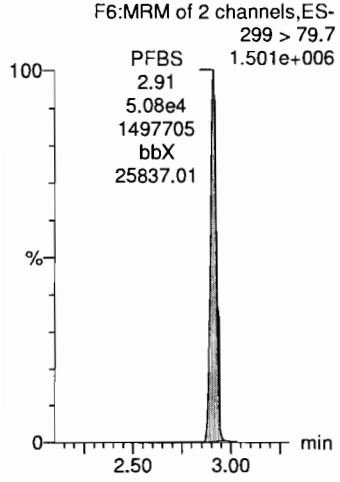
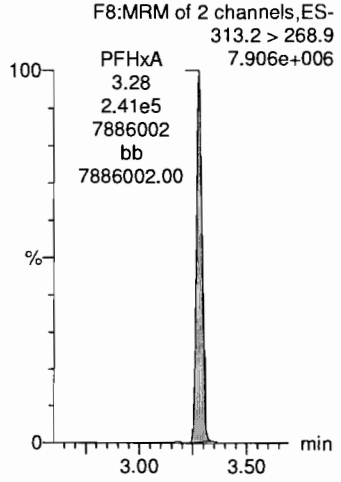
Name: 180502M4_10, Date: 02-May-2018, Time: 19:45:39, ID: ST180502M4-9 PFC CS5 537 18D1818, Description: PFC CS5 18D1818

PFBS



PFHxA



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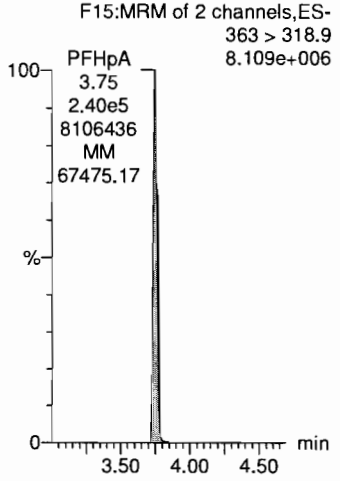

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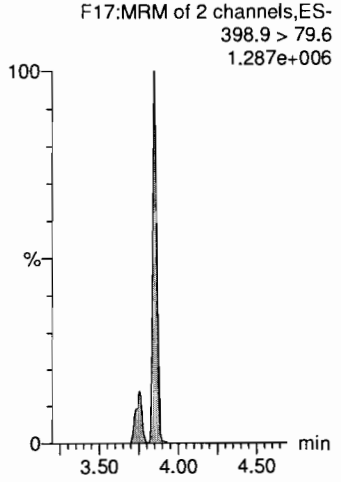

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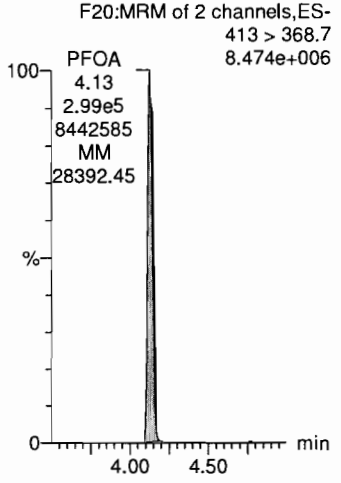

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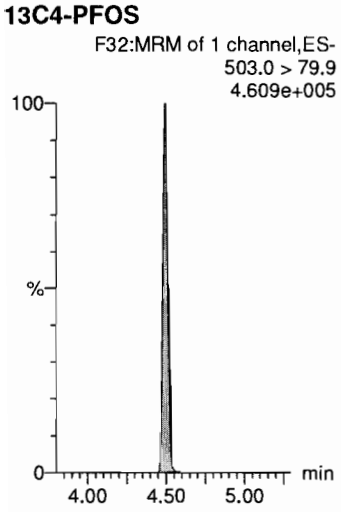
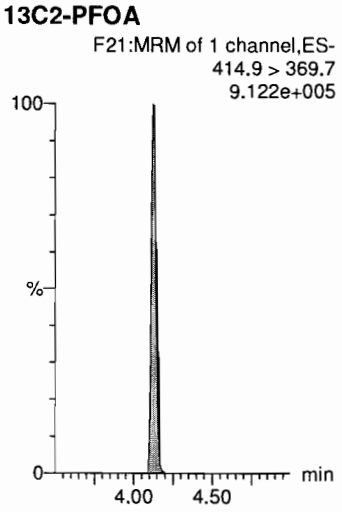


13C2-PFOA



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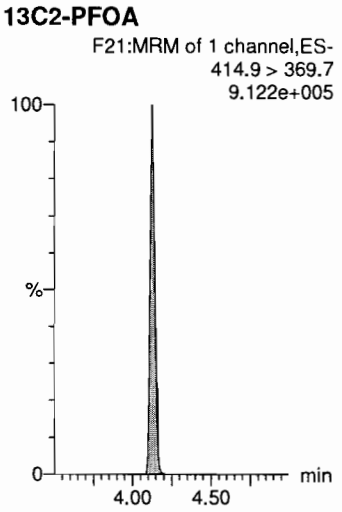

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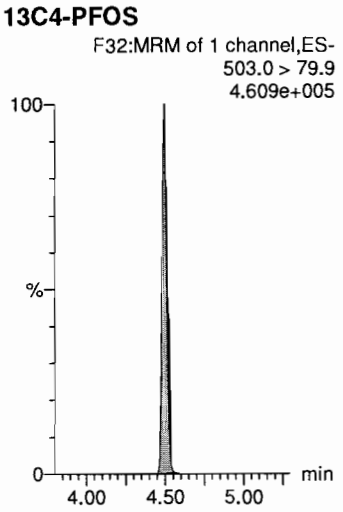

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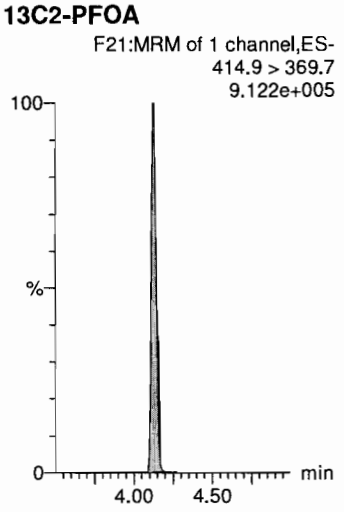

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-CRV.qld

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Name: 180502M4_10, Date: 02-May-2018, Time: 19:45:39, ID: ST180502M4-9 PFC CS5 537 18D1818, Description: PFC CS5 18D1818

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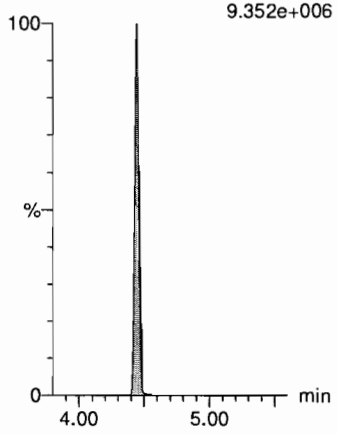
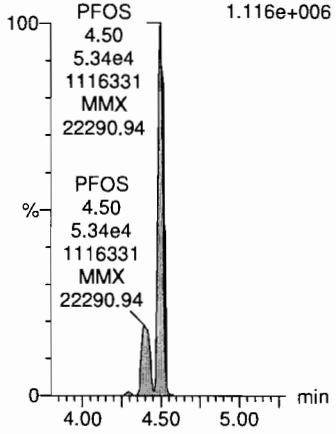


PFOS



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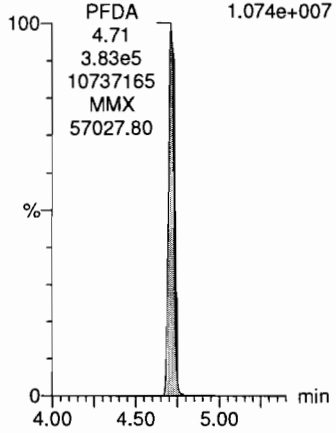
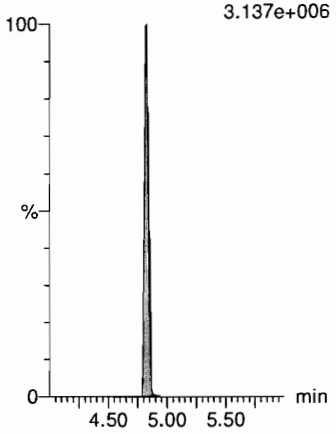
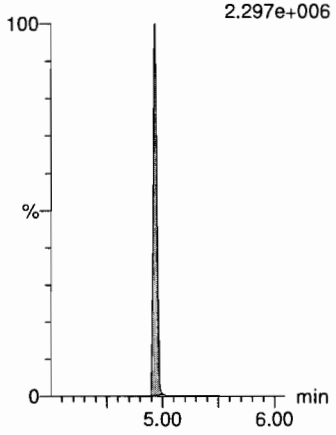


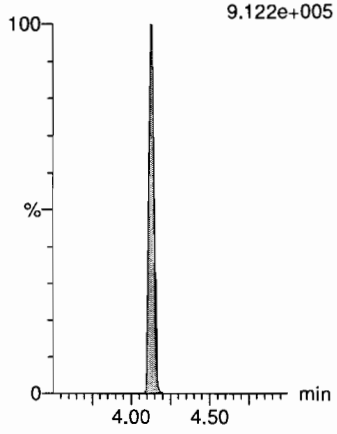
N-MeFOSAA



N-EtFOSAA



13C2-PFOA



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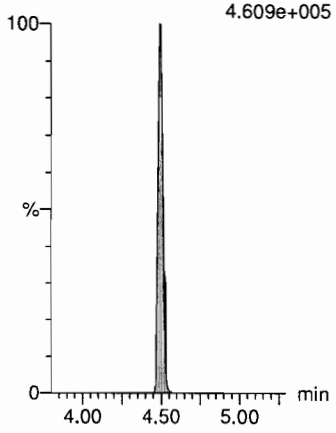

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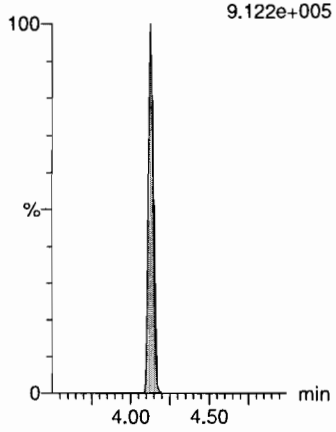

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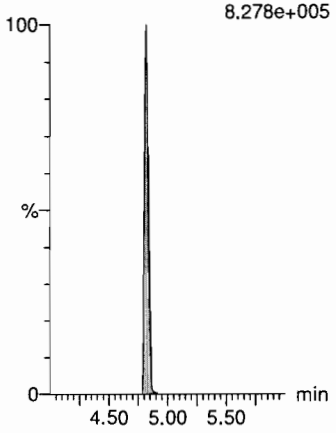

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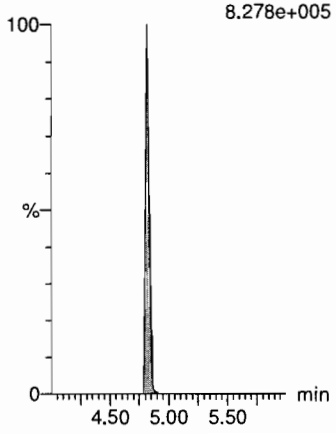

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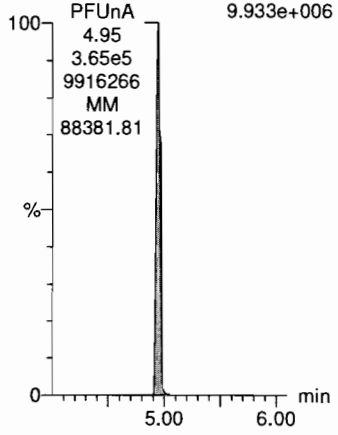
Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_10, Date: 02-May-2018, Time: 19:45:39, ID: ST180502M4-9 PFC CS5 537 18D1818, Description: PFC CS5 18D1818

PFUnA



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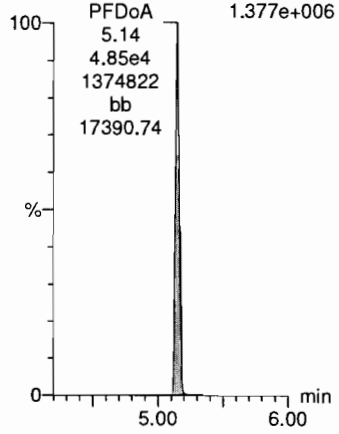

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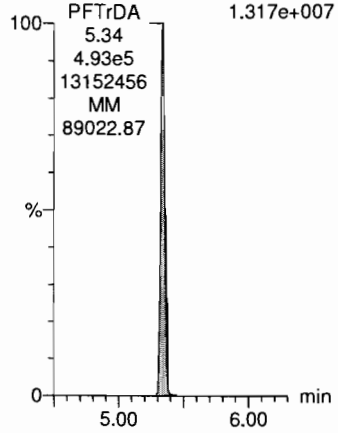

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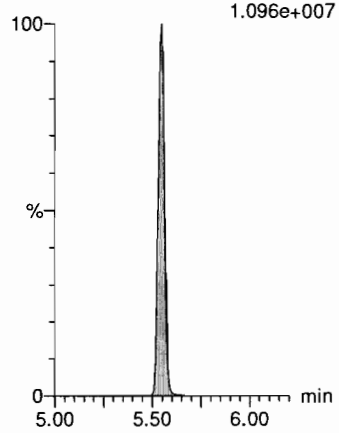

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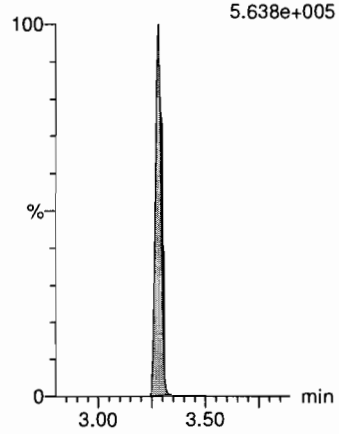

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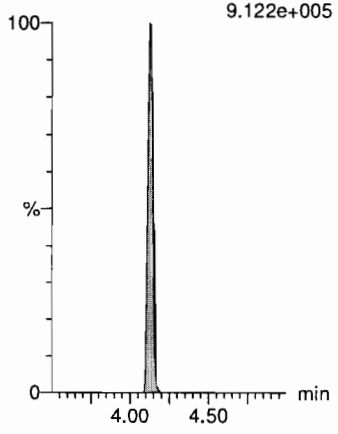

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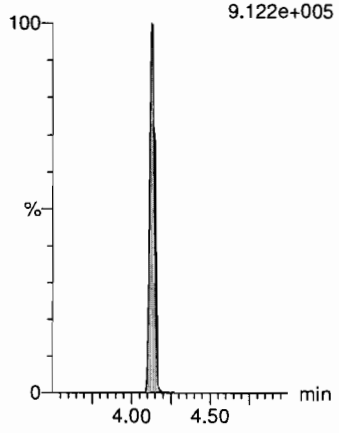

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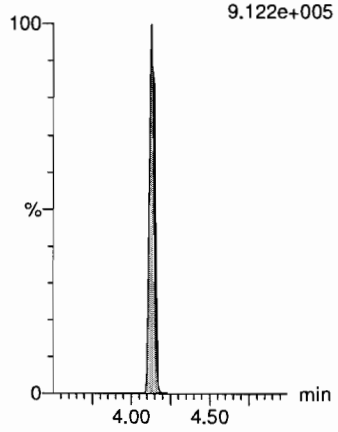

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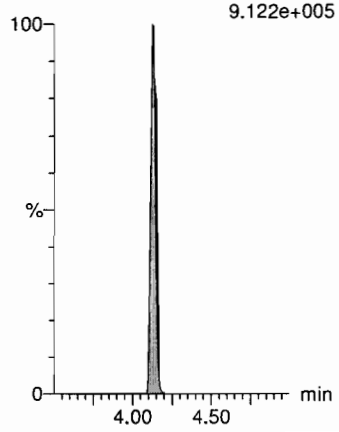

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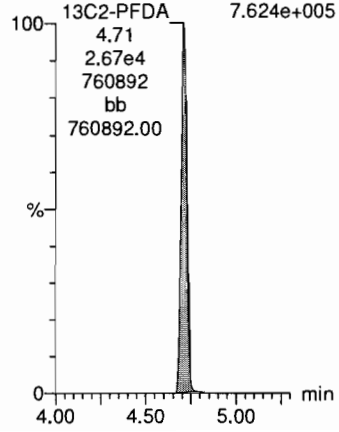

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Printed: Thursday, May 03, 2018 11:40:37 Pacific Daylight Time

Name: 180502M4_10, Date: 02-May-2018, Time: 19:45:39, ID: ST180502M4-9 PFC CS5 537 18D1818, Description: PFC CS5 18D1818

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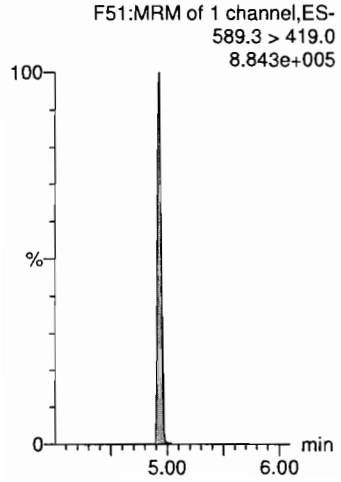

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-12.qld

Last Altered: Thursday, May 03, 2018 11:46:11 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:55:46 Pacific Daylight Time

JAM 5/3/18

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

2 AD 5/3/18

AD 5/3/18

Name: 180502M4_12, Date: 02-May-2018, Time: 20:08:38, ID: ICV180502M4-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	6.73e3	1.71e4	1.0000		2.91	2.91	11.3	10.4	103.9
2	2	PFHxA	313.2 > 268.9	2.75e4	3.40e4	1.0000		3.31	3.28	8.09	11.5	115.3
3	3	PFHpA	363 > 318.9	2.63e4	3.40e4	1.0000		3.96	3.75	7.76	11.2	111.5
4	4	PFHxS	398.9 > 79.6	5.88e3	1.71e4	1.0000		4.05	3.85	9.87	10.4	104.2
5	5	PFOA	413 > 368.7	3.47e4	3.40e4	1.0000		4.34	4.13	10.2	11.2	112.0
6	6	PFNA	463 > 418.8	3.36e4	3.40e4	1.0000		4.65	4.44	9.89	10.2	102.4
7	7	PFOS	499 >79.9	7.21e3	1.71e4	1.0000		4.69	4.49	12.1	10.9	108.8
8	8	PFDA	513 > 468.8	4.84e4	3.40e4	1.0000		4.92	4.71	14.3	12.3	122.5
9	9	N-MeFOSAA	570.1 > 419.0	1.20e4	3.38e4	1.0000		5.02	4.82	14.2	9.08	90.8
10	10	N-EtFOSAA	584.2 >419.0	1.02e4	3.38e4	1.0000		5.14	4.93	12.0	10.5	104.6
11	11	PFUnA	563 > 518.9	4.25e4	3.40e4	1.0000		5.15	4.94	12.5	11.8	118.3
12	12	PFDoA	612.9 > 318.8	6.31e3	3.40e4	1.0000		5.16	5.14	1.86	12.2	122.3
13	13	PFTrDA	662.9 > 618.9	6.05e4	3.40e4	1.0000		5.54	5.33	17.8	12.3	123.4
14	14	PFTeDA	712.9 > 668.8	4.73e4	3.40e4	1.0000		5.75	5.54	13.9	11.5	114.9
15	15	13C2-PFHxA	315 > 269.8	1.85e4	3.40e4	1.0000	0.506	3.31	3.28	5.46	10.8	108.0
16	16	13C2-PFDA	515.1 > 469.9	2.97e4	3.40e4	1.0000	0.810	4.71	4.71	8.76	10.8	108.1
17	17	d5-N-EtFOSAA	589.3 > 419.0	3.84e4	3.38e4	1.0000	1.119	4.82	4.93	45.4	40.6	101.5
18	18	13C2-PFOA	414.9 > 369.7	3.40e4	3.40e4	1.0000	1.000	3.92	4.13	10.0	10.0	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.71e4	1.71e4	1.0000	1.000	4.29	4.49	28.7	28.7	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	3.38e4	3.38e4	1.0000	1.000	4.62	4.82	40.0	40.0	100.0

Dataset: Z:\Projects\PFAS.PRO\Results\180502M4\180502M4-12.qld

Last Altered: Thursday, May 03, 2018 11:46:11 Pacific Daylight Time
Printed: Thursday, May 03, 2018 11:55:46 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_DW_L14_0503.mdb 03 May 2018 11:32:42
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_537_Q4_05-03-18_M4-L14.cdb 03 May 2018 11:33:06

Name: 180502M4_12, Date: 02-May-2018, Time: 20:08:38, ID: ICV180502M4-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

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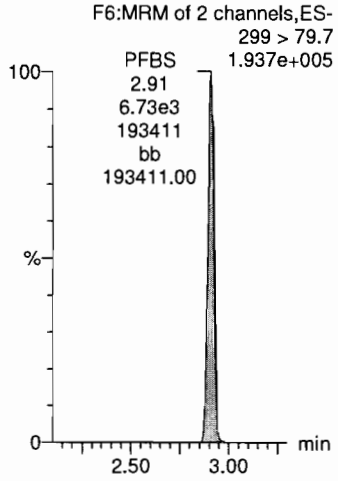

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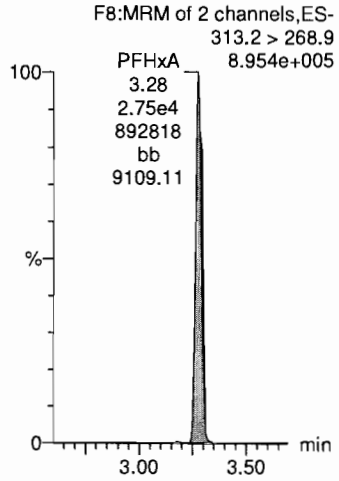

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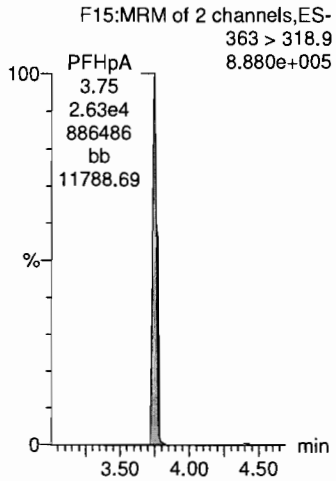

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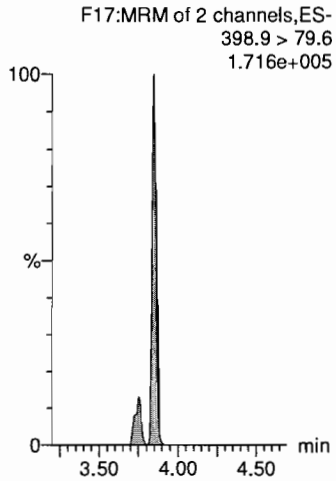
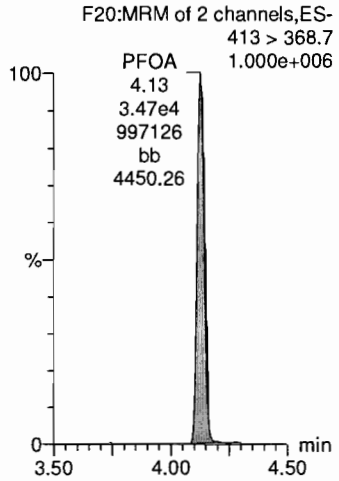


PFOA



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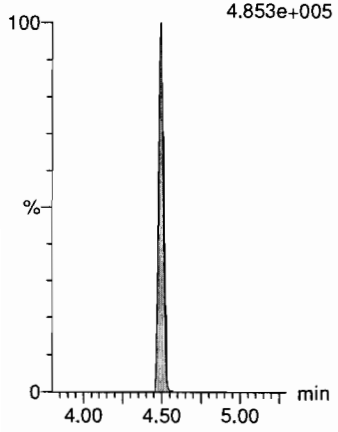

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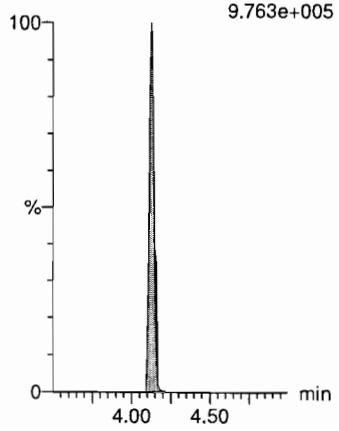

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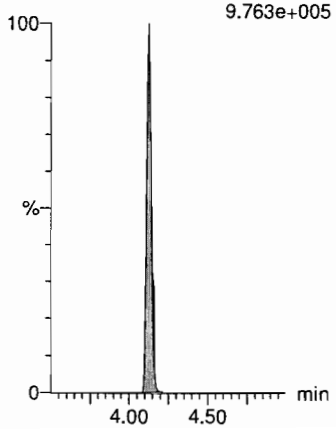

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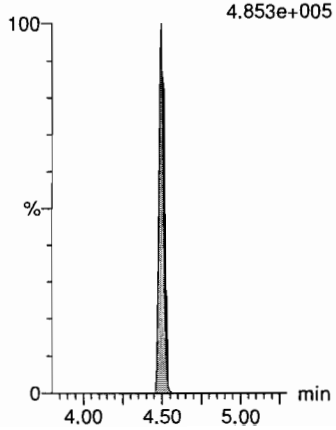

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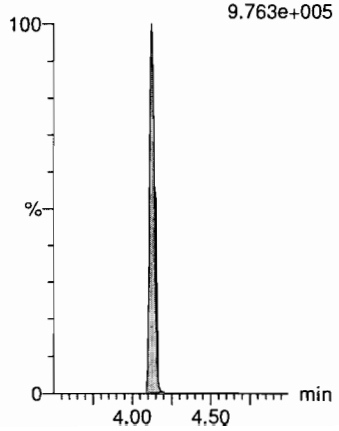

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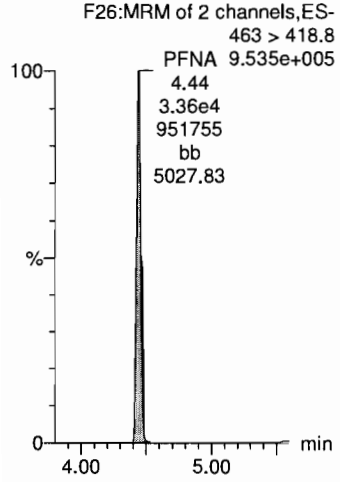
Name: 180502M4_12, Date: 02-May-2018, Time: 20:08:38, ID: ICV180502M4-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

PFNA



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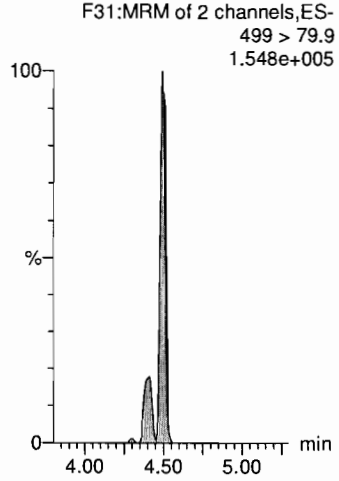

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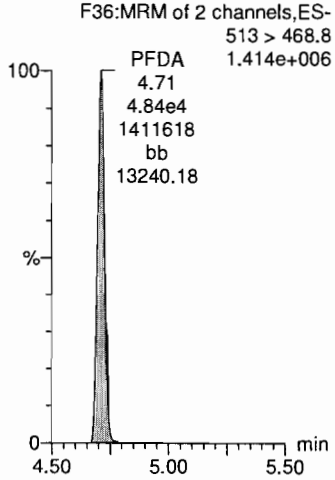

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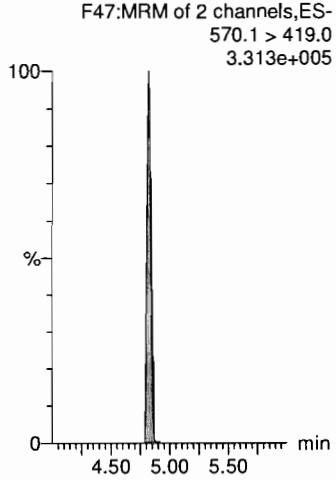

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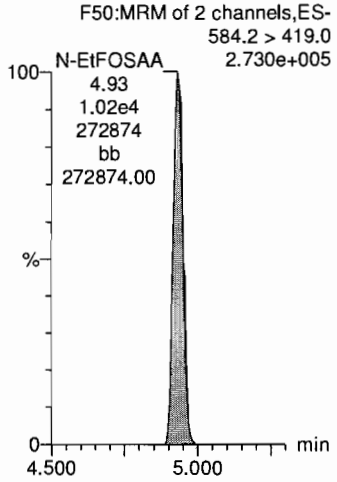

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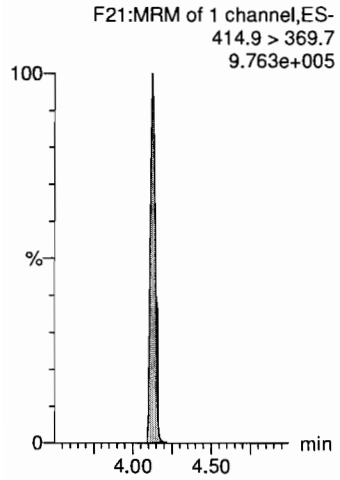

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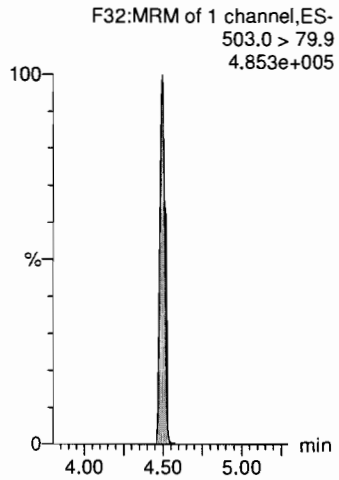

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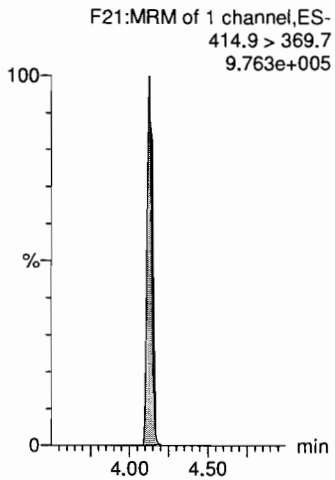
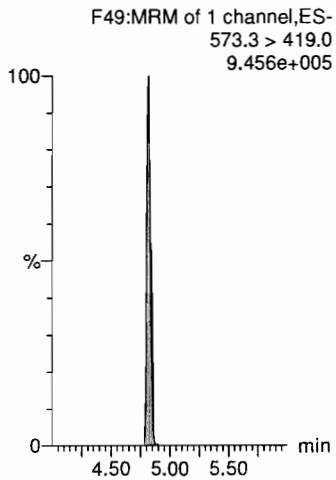


d3-N-MeFOSAA



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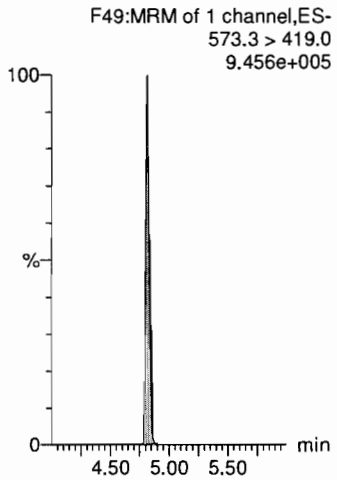

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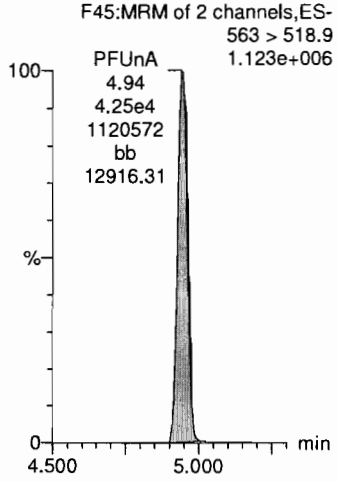
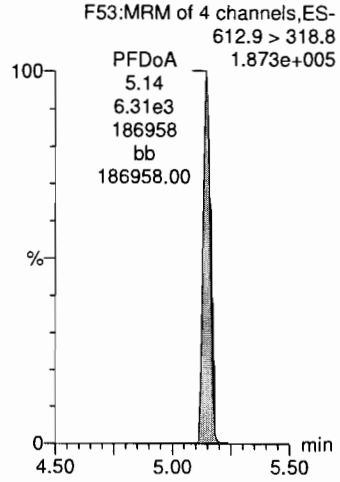
Name: 180502M4_12, Date: 02-May-2018, Time: 20:08:38, ID: ICV180502M4-1 PFC 537 ICV 18D2007, Description: PFC ICV 18D2007

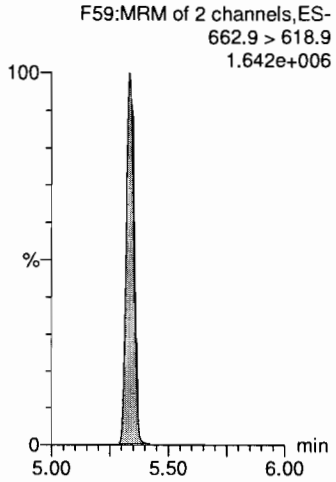
PFUnA



PFDoA



PFTrDA



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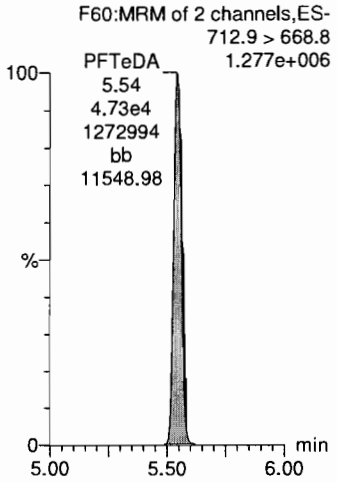

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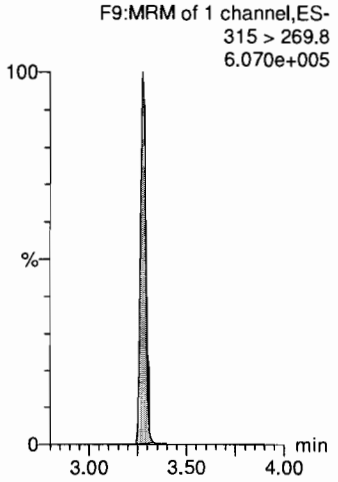

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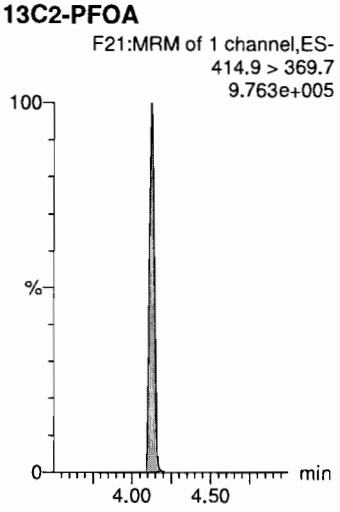

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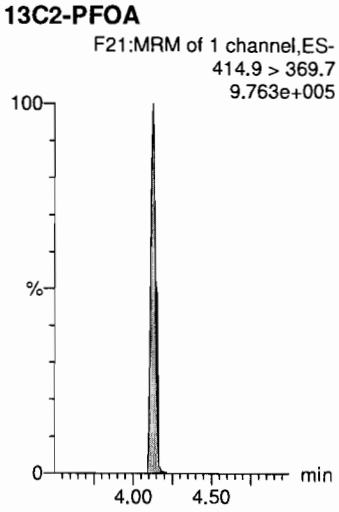

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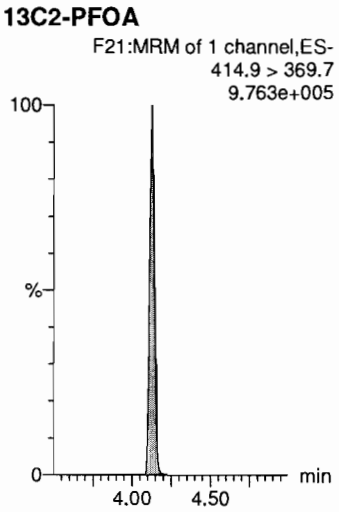

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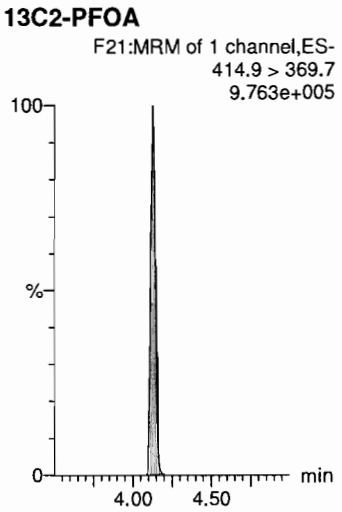

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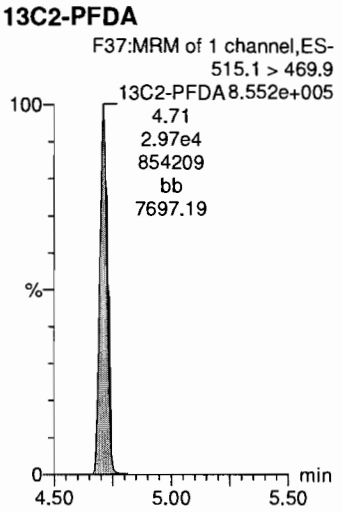

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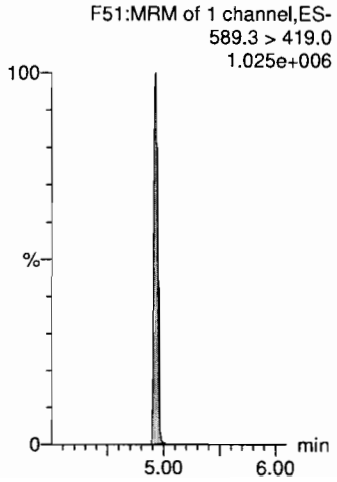

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N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:05:00	580-76760	1	1			Vinyl chlor	75-01-4		0.014	UG_L	J		PR	TRG					00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:05:00	580-76760	1	1			Dibromofl	1868-53-7		97	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	REG	W	NV	04/20/201	04/21/2018			20180424	14:08:00	20180427	00:54:00	580-76760	1	1			2-Fluorop	367-12-4		81	PCT_REC	M		PR	SURR		SLSA	106	53	00000000				5.0	0.022	0.060	3.0	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	REG	W	NV	04/20/201	04/21/2018			20180424	14:08:00	20180427	00:54:00	580-76760	1	1			1,4-Dioxar	123-91-1		0.11	UG_L	M		PR	TRG					00000000				5.0	0.011	0.030	0.10	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:29:00	580-76760	1	1			Trifluorot	98-08-8		101	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:29:00	580-76760	1	1			Vinyl chlor	75-01-4		0.040	UG_L	U M		PR	TRG					00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:29:00	580-76760	1	1			Dibromofl	1868-53-7		99	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	REG	W	NV	04/20/201	04/21/2018			20180424	14:08:00	20180427	01:17:00	580-76760	1	1			2-Fluorop	367-12-4		74	PCT_REC	M		PR	SURR		SLSA	106	53	00000000				5.0	0.021	0.058	2.9	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	REG	W	NV	04/20/201	04/21/2018			20180424	14:08:00	20180427	01:17:00	580-76760	1	1			1,4-Dioxar	123-91-1		0.11	UG_L	M		PR	TRG					00000000				5.0	0.011	0.029	0.097	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:52:00	580-76760	1	1			Trifluorot	98-08-8		101	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:52:00	580-76760	1	1			Vinyl chlor	75-01-4		0.040	UG_L	U M		PR	TRG					00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-R	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	11:52:00	580-76760	1	1			Dibromofl	1868-53-7		97	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-TB	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	12:15:00	580-76760	1	1			Trifluorot	98-08-8		101	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-TB	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	12:15:00	580-76760	1	1			Vinyl chlor	75-01-4		0.040	UG_L	U M		PR	TRG					00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	WI-A06-TB	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	REG	W	NV	04/20/201	04/21/2018					20180425	12:15:00	580-76760	1	1			Dibromofl	1868-53-7		99	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCS 580-2	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	BS	W	NV	04/24/201	04/24/2018			20180424	14:08:00	20180427	00:10:00	LCS 580-27	1	1			2-Fluorop	367-12-4		78	PCT_REC			PR	SURR		SLSA	106	53	00000000				5.0	0.022	0.060	3.0	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	LCS 580-2	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	BS	W	NV	04/24/201	04/24/2018			20180424	14:08:00	20180427	00:10:00	LCS 580-27	1	1			1,4-Dioxar	123-91-1		64	PCT_REC			PR	TRG		LSA	140	40	00000000				5.0	0.011	0.030	0.10	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	LCS 580-2	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	BS	W	NV	04/25/201	04/25/2018					20180425	10:18:00	LCS 580-27	1	1			Trifluorot	98-08-8		100	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCS 580-2	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	BS	W	NV	04/25/201	04/25/2018					20180425	10:18:00	LCS 580-27	1	1			Vinyl chlor	75-01-4		107	PCT_REC			PR	TRG		LSA	130	56	00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCS 580-2	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	BS	W	NV	04/25/201	04/25/2018					20180425	10:18:00	LCS 580-27	1	1			Dibromofl	1868-53-7		97	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCSD 580	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	BSD	W	NV	04/25/201	04/25/2018			20180425	10:42:00	LCSD 580-2	1	1			Trifluorot	98-08-8		100	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCSD 580	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	BSD	W	NV	04/25/201	04/25/2018					20180425	10:42:00	LCSD 580-2	1	1			Vinyl chlor	75-01-4		106	PCT_REC			PR	TRG		LSP	130	56	00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	LCSD 580	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	BSD	W	NV	04/25/201	04/25/2018					20180425	10:42:00	LCSD 580-2	1	1			Dibromofl	1868-53-7		98	PCT_REC	M		PR	SURR		SLSA	118	77	00000000				5.0	0.19	0.40	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	MB 580-2	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	LB1	W	NV	04/24/201	04/24/2018			20180424	14:08:00	20180426	23:48:00	MB 580-27	1	1			2-Fluorop	367-12-4		84	PCT_REC			PR	SURR		SLSA	106	53	00000000				5.0	0.022	0.060	3.0	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	MB 580-2	NONE	SVOA	8270D_SIM	SVOA	TAMER	Test Ameri	NONE	NA	SW3520C	000	LB1	W	NV	04/24/201	04/24/2018			20180424	14:08:00	20180426	23:48:00	MB 580-27	1	1			1,4-Dioxar	123-91-1		0.030	UG_L	U		PR	TRG					00000000				5.0	0.011	0.030	0.10	580-76760	S80-27237		
N6247016	4041		WHIDBEY_	MB 580-2	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	LB1	W	NV	04/25/201	04/25/2018					20180425	09:55:00	MB 580-27	1	1			Trifluorot	98-08-8		102	PCT_REC			PR	SURR		SLSA	141	80	00000000				5.0	1.2	2.0	5.0	580-76760	S80-27218		
N6247016	4041		WHIDBEY_	MB 580-2	NONE	VOA	8260C_SIM	VOA	TAMER	Test Ameri	NONE	NA	NONE	000	LB1	W	NV	04/25/201	04/25/2018					20180425	09:55:00	MB 580-27	1	1			Vinyl chlor	75-01-4		0.040	UG_L	U		PR	TRG					00000000				5.0	0.013	0.040	0.50	580-76760	S80-27218		
N6247016

Contract_I	DO_CTO_N	Phase	Installation	Sample_N	CH2M_Cod	Analysis_G	Analytical	PRC_Code	Lab_Code	Lab_Name	Leachate_A	Sample_Ba	Extraction	Result_Typ	Lab_QC_Ty	Sample_M	QC_Level	DateTime_	Date_Rece	Leachate_L	Extraction	Extraction	Analysis_D	Analysis_T	Lab_Sampl	Dilution	Run_Numb	Percent_M	Percent_Li	Chem_Nar	Analyte_ID	Analyte_V	Original_A	Result_Uni	Lab_Qualif	Validator_	GC_Colum	Analysis_R	Result_Na	QC_Contro	QC_Accura	QC_Accura	Control_Li	QC_Narrat	MDL	Detection	QSM_Vers	DL	LOD	LOQ	SDG	Analysis_B	Validator_	Val_Date
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			PerfluoroH	375-85-9		82.1	NG_L			PR	TRG		LSA	130	70					5.1	0.533	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			PerfluoroH	355-46-4		81.1	NG_L			PR	TRG		LSA	130	70					5.1	0.415	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorod	335-67-1		83.8	NG_L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			PerfluoroH	375-95-1		86.7	NG_L			PR	TRG		LSA	130	70					5.1	1.44	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorod	1763-23-1		77.2	NG_L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorod	335-76-2		92.3	NG_L			PR	TRG		LSA	130	70					5.1	1.28	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:25:00	B8D033-B	1	-999			N-Methyl	2355-31-9		84.9	NG_L			PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:25:00	B8D033-B	1	-999			N-Ethyl Pe	2991-50-6		85.5	NG_L			PR	TRG		LSA	130	70					5.1	1.93	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorou	2058-94-8		82.2	NG_L			PR	TRG		LSA	130	70					5.1	0.255	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorod	307-55-1		88.6	NG_L			PR	TRG		LSA	130	70					5.1	0.952	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorot	72629-94-8		93.5	NG_L			PR	TRG		LSA	130	70					5.1	0.943	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			Perfluorot	376-06-7		71.1	NG_L			PR	TRG		LSA	130	70					5.1	0.777	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180407	21:03:00	B8D033-B	1	-999			13C2-PFH	13C2-PFHxA		102	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:25:00	B8D033-B	1	-999			13C2-PFD	13C2-PFDA		107	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:25:00	B8D033-B	1	-999			d5-EtFOSA	d5-EtFOSAA		97.2	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	375-73-5		128	NG_L			PR	TRG		LSA	130	70					5.1	0.439	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	307-24-4		137	NG_L			PR	TRG		LSA	130	70					5.1	0.864	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	375-85-9		113	NG_L			PR	TRG		LSA	130	70					5.1	0.528	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	355-46-4		296	NG_L			PR	TRG		LSA	130	70					5.1	0.411	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	335-67-1		124	NG_L			PR	TRG		LSA	130	70					5.1	1.07	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			PerfluoroH	375-95-1		79.8	NG_L			PR	TRG		LSA	130	70					5.1	1.43	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorod	1763-23-1		148	NG_L			PR	TRG		LSA	130	70					5.1	1.03	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorod	335-76-2		83.2	NG_L			PR	TRG		LSA	130	70					5.1	1.27	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			N-Methyl	2355-31-9		89.2	NG_L			PR	TRG		LSA	130	70					5.1	3.01	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			N-Ethyl Pe	2991-50-6		84.9	NG_L			PR	TRG		LSA	130	70					5.1	1.91	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorou	2058-94-8		76.4	NG_L			PR	TRG		LSA	130	70					5.1	0.253	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorod	307-55-1		82.8	NG_L			PR	TRG		LSA	130	70					5.1	0.944	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorot	72629-94-8		71.1	NG_L			PR	TRG		LSA	130	70					5.1	0.935	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			Perfluorot	376-06-7		73.2	NG_L			PR	TRG		LSA	130	70					5.1	0.770	4.96	9.92	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			13C2-PFH	13C2-PFHxA		93.6	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			13C2-PFD	13C2-PFDA		96.2	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MS	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:48:00	B8D033-M	1	-999			d5-EtFOSA	d5-EtFOSAA		113	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			PerfluoroH	375-73-5		151	NG_L			PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			PerfluoroH	307-24-4		148	NG_L			PR	TRG		LSA	130	70					5.1	0.872	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			PerfluoroH	375-85-9		116	NG_L			PR	TRG		LSA	130	70					5.1	0.534	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			PerfluoroH	355-46-4		343	NG_L			PR	TRG		LSA	130	70					5.1	0.415	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorod	335-67-1		133	NG_L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			PerfluoroH	375-95-1		81.3	NG_L			PR	TRG		LSA	130	70					5.1	1.44	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorod	1763-23-1		154	NG_L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorod	335-76-2		88.5	NG_L			PR	TRG		LSA	130	70					5.1	1.28	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			N-Methyl	2355-31-9		72.9	NG_L			PR	TRG		LSA	130	70					5.1	3.04	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			N-Ethyl Pe	2991-50-6		71.7	NG_L			PR	TRG		LSA	130	70					5.1	1.93	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorou	2058-94-8		81.3	NG_L			PR	TRG		LSA	130	70					5.1	0.255	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorod	307-55-1		90.9	NG_L			PR	TRG		LSA	130	70					5.1	0.953	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorot	72629-94-8		82.3	NG_L			PR	TRG		LSA	130	70					5.1	0.944	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			Perfluorot	376-06-7		97.5	NG_L			PR	TRG		LSA	130	70					5.1	0.778	5.00	10.0	1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			13C2-PFH	13C2-PFHxA		102	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			13C2-PFD	13C2-PFDA		98.2	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	Matrix Spi	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	MSD	W	4	04/05/201	04/05/2018		20180405	08:30:00	20180408	18:59:00	B8D033-M	1	-999			d5-EtFOSA	d5-EtFOSAA		86.3	PCT_REC			PR	SURR		LSA	130	70					5.1				1800600	SBD0016		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			PerfluoroH	375-73-5		22.6	NG_L			PR	TRG									5.1	0.428	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			PerfluoroH	307-24-4		26.1	NG_L			PR	TRG									5.1	0.842	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			PerfluoroH	375-85-9		9.21	NG_L	J		PR	TRG									5.1	0.515	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			PerfluoroH	355-46-4		135	NG_L			PR	TRG									5.1	0.401	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorod	335-67-1		29.1	NG_L			PR	TRG									5.1	1.04	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			PerfluoroH	375-95-1		4.83	NG_L	U		PR	TRG									5.1	1.39	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorod	1763-23-1		44.7	NG_L			PR	TRG									5.1	1.01	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorod	335-76-2		4.83	NG_L	U		PR	TRG									5.1	1.24	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			N-Methyl	2355-31-9		4.83	NG_L	U		PR	TRG									5.1	2.94	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			N-Ethyl Pe	2991-50-6		4.83	NG_L	U		PR	TRG									5.1	1.87	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorou	2058-94-8		4.83	NG_L	U		PR	TRG									5.1	0.247	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorod	307-55-1		4.83	NG_L	U		PR	TRG									5.1	0.921	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorot	72629-94-8		4.83	NG_L	U		PR	TRG									5.1	0.912	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			Perfluorot	376-06-7		4.83	NG_L	U		PR	TRG									5.1	0.751	4.83	9.67	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			13C2-PFH	13C2-PFHxA		87.9	PCT_REC			PR	SURR		SLSA	130	70					5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-RV	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018		20180427	11:30:00	20180503	00:55:00	1800728-0	1	-999			13C2-PFD	13C2-PFDA		86.8	PCT_REC			PR	SURR		SLSA	130	70					5.1				1800728	SBD0058

Contract_ID	DO_CTO_N	Phase	Installation	Sample_N	CH2M_Cod	Analysis_G	Analytical	PRC_Code	Lab_Code	Lab_Name	Leachate_F	Sample_Ba	Extraction	Result_Typ	Lab_QC_Ty	Sample_M	QC_Level	DateTime_	Date_Rece	Leachate_T	Leachate_	Extraction	Extraction	Analysis_D	Analysis_T	Lab_Sampl	Dilution	Run_Numb	Percent_M	Percent_Li	Chem_Nar	Analyte_ID	Analyte_V	Original_A	Result_Un	Lab_Qualif	Validator_	GC_Colum	Analysis_R	Result_Na	QC_Contro	QC_Accur	QC_Accura	Control_Li	QC_Narrat	MDL	Detection	QSM_Vers	DL	LOD	LOQ	SDG	Analysis_B	Validator_	Val_Date
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoroh	375-73-5		4.66	NG_L	U		PR	TRG								5.1	0.412	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoroh	307-24-4		4.66	NG_L	U		PR	TRG								5.1	0.811	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoroh	375-85-9		4.66	NG_L	U		PR	TRG								5.1	0.496	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoroh	355-46-4		4.66	NG_L	U		PR	TRG								5.1	0.386	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoro	335-67-1		4.66	NG_L	U		PR	TRG								5.1	1.01	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoro	375-95-1		4.66	NG_L	U		PR	TRG								5.1	1.34	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoro	1763-23-1		4.66	NG_L	U		PR	TRG								5.1	0.968	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoro	335-76-2		4.66	NG_L	U		PR	TRG								5.1	1.19	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			N-Methyl	2355-31-9		4.66	NG_L	U		PR	TRG								5.1	2.83	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			N-Ethyl Pe	2991-50-6		4.66	NG_L	U		PR	TRG								5.1	1.80	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluorou	2058-94-8		4.66	NG_L	U		PR	TRG								5.1	0.237	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluoro	307-55-1		4.66	NG_L	U		PR	TRG								5.1	0.886	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluorot	72629-94-8		4.66	NG_L	U		PR	TRG								5.1	0.878	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			Perfluorot	376-06-7		4.66	NG_L	U		PR	TRG								5.1	0.723	4.66	9.31	1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			13C2-PFH	13C2-PFHxA		96.0	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			13C2-PFDA	13C2-PFDA		83.4	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	WI-A06-FB	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	REG	W	4	04/20/201	04/21/2018			20180427	11:30:00	20180503	01:41:00	1800728-0	1	-999			d5-EtFOSA	d5-EtFOSAA		87.9	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoroh	375-73-5		5.00	NG_L	U		PR	TRG								5.1	0.443	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoroh	307-24-4		5.00	NG_L	U		PR	TRG								5.1	0.871	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoroh	375-85-9		5.00	NG_L	U		PR	TRG								5.1	0.533	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoroh	355-46-4		5.00	NG_L	U		PR	TRG								5.1	0.415	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoro	335-67-1		5.00	NG_L	U		PR	TRG								5.1	1.08	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoro	375-95-1		5.00	NG_L	U		PR	TRG								5.1	1.44	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoro	1763-23-1		5.00	NG_L	U		PR	TRG								5.1	1.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoro	335-76-2		5.00	NG_L	U		PR	TRG								5.1	1.28	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			N-Methyl	2355-31-9		5.00	NG_L	U		PR	TRG								5.1	3.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			N-Ethyl Pe	2991-50-6		5.00	NG_L	U		PR	TRG								5.1	1.93	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluorou	2058-94-8		5.00	NG_L	U		PR	TRG								5.1	0.255	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluoro	307-55-1		5.00	NG_L	U		PR	TRG								5.1	0.952	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluorot	72629-94-8		5.00	NG_L	U		PR	TRG								5.1	0.943	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			Perfluorot	376-06-7		5.00	NG_L	U		PR	TRG								5.1	0.777	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			13C2-PFH	13C2-PFHxA		95.8	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			13C2-PFDA	13C2-PFDA		104	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BLK	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:40:00	B8D0148-B	1	-999			d5-EtFOSA	d5-EtFOSAA		91.9	PCT_REC			PR	SURR	SLSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoroh	375-73-5		33.7	NG_L			PR	TRG		LSA	130	70						5.1	0.443	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoroh	307-24-4		32.0	NG_L			PR	TRG		LSA	130	70						5.1	0.871	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoroh	375-85-9		34.0	NG_L			PR	TRG		LSA	130	70						5.1	0.533	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoroh	355-46-4		33.4	NG_L			PR	TRG		LSA	130	70						5.1	0.415	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoro	335-67-1		38.6	NG_L			PR	TRG		LSA	130	70						5.1	1.08	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoro	375-95-1		35.2	NG_L			PR	TRG		LSA	130	70						5.1	1.44	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoro	1763-23-1		33.4	NG_L			PR	TRG		LSA	130	70						5.1	1.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoro	335-76-2		30.6	NG_L			PR	TRG		LSA	130	70						5.1	1.28	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			N-Methyl	2355-31-9		33.4	NG_L			PR	TRG		LSA	130	70						5.1	3.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			N-Ethyl Pe	2991-50-6		34.9	NG_L			PR	TRG		LSA	130	70						5.1	1.93	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluorou	2058-94-8		34.5	NG_L			PR	TRG		LSA	130	70						5.1	0.255	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluoro	307-55-1		33.3	NG_L			PR	TRG		LSA	130	70						5.1	0.952	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluorot	72629-94-8		31.4	NG_L			PR	TRG		LSA	130	70						5.1	0.943	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			Perfluorot	376-06-7		31.9	NG_L			PR	TRG		LSA	130	70						5.1	0.777	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			13C2-PFH	13C2-PFHxA		82.5	PCT_REC			PR	SURR	LSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			13C2-PFDA	13C2-PFDA		94.9	PCT_REC			PR	SURR	LSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:17:00	B8D0148-B	1	-999			d5-EtFOSA	d5-EtFOSAA		87.7	PCT_REC			PR	SURR	LSA	130	70						5.1				1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoroh	375-73-5		32.8	NG_L			PR	TRG		LSA	130	70						5.1	0.443	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoroh	307-24-4		45.1	NG_L			PR	TRG		LSA	130	70						5.1	0.871	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoroh	375-85-9		46.2	NG_L			PR	TRG		LSA	130	70						5.1	0.533	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoroh	355-46-4		30.8	NG_L			PR	TRG		LSA	130	70						5.1	0.415	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoro	335-67-1		37.7	NG_L			PR	TRG		LSA	130	70						5.1	1.08	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoro	375-95-1		38.1	NG_L			PR	TRG		LSA	130	70						5.1	1.44	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoro	1763-23-1		30.8	NG_L			PR	TRG		LSA	130	70						5.1	1.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoro	335-76-2		41.3	NG_L			PR	TRG		LSA	130	70						5.1	1.28	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			N-Methyl	2355-31-9		31.9	NG_L			PR	TRG		LSA	130	70						5.1	3.04	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			N-Ethyl Pe	2991-50-6		34.2	NG_L			PR	TRG		LSA	130	70						5.1	1.93	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluorou	2058-94-8		44.9	NG_L			PR	TRG		LSA	130	70						5.1	0.255	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluoro	307-55-1		43.5	NG_L			PR	TRG		LSA	130	70						5.1	0.952	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluorot	72629-94-8		42.7	NG_L			PR	TRG		LSA	130	70						5.1	0.943	5.00	10.0	1800728	SBD0058		
N6247016	4041		WHIDBEY_	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANA	NONE	WET	METHOD	000	BS	W	4	04/27/201	04/27/2018			20180427	11:30:00	20180502	21:28:00	B8D0148-B	1	-999			Perfluorot	376-06-7		41.2	NG_L			PR	TRG		LSA	130	70						5.1	0.777	5.00	10.0	1800728	SBD0058		
N6247016	4041

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1800728
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: NAS Whidbey Island, Area 6, CTO-4041, Washington
Date: June 4, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-A06-RW18-0418	1800728-01	Water
2	WI-A06-RW18P-0418	1800728-02	Water
3	WI-A06-FB18-0418	1800728-03	Water
4	WI-A06-RW20-0418	1800728-04	Water
5	WI-A06-FB20-0418	1800728-05	Water

A full data validation was performed on the analytical data for three water samples and two aqueous field blank samples collected on April 20, 2018 by CH2M HILL at the NAS Whidbey Island Area 6 site in Washington. 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 USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Superfund Organic 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
- Gas Chromatography/Mass Spectrometry (GC/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 are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

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.

GC/MS Tuning

- All criteria were met.

Initial Calibration

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

Continuing Calibration

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

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample result are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-A06-FB18-0418	None - ND	-	-	-
WI-A06-FB20-0418	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- MS/MSD samples were not analyzed.

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria except for the following.

EDS Sample ID	Compound	%R	Qualifier	Affected Samples
1	d5-EtFOSAA	68.7%	UJ	Associated Compounds

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

PFCs				
Compound	WI-A06-RW18-0418 ng/L	WI-A06-RW18P-0418 ng/L	RPD	Qualifier
PFBS	22.6	20.5	10%	None
PFHxA	26.1	29.3	12%	
PFHpA	9.21	11.3	20%	
PFHxS	135	125	8%	
PFOA	29.1	30.6	5%	
PFNA	ND	1.59	NC	
PFOS	44.7	43.0	4%	

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

Signed: Nancy Weaver Dated: 6/5/18

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: WI-A06-RW18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-01
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	22.6	0.428	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxA	26.1	0.842	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHpA	9.21	0.515	4.83	9.67	J	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFHxS	135	0.401	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOA	29.1	1.04	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFNA	ND	1.39	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFOS	44.7	1.01	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDA	ND	1.24	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
MeFOSAA	ND	2.94	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
EtFOSAA	~~ND~~ UJ	1.87	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFUnA	ND	0.247	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFDoA	ND	0.921	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTrDA	ND	0.912	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
PFTeDA	ND	0.751	4.83	9.67		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

ISL

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
13C2-PFDA	SURR	86.8	70 - 130		B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1
d5-EtFOSAA	SURR	68.7	70 - 130	H	B8D0148	27-Apr-18	0.259 L	03-May-18 00:55	1

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

5/4/18

Vista 2 Analytical Laboratory

Sample ID: WI-A06-RW18P-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:30

Laboratory Data

Lab Sample: 1800728-02
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.5	0.431	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxA	29.3	0.847	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHpA	11.3	0.518	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFHxS	125	0.404	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOA	30.6	1.05	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFNA	1.59	1.40	4.86	9.73	J	B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFOS	43.0	1.01	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDA	ND	1.24	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
MeFOSAA	ND	2.96	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
EtFOSAA	ND	1.88	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFUnA	ND	0.248	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFDoA	ND	0.926	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTrDA	ND	0.917	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
PFTeDA	ND	0.756	4.86	9.73		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
13C2-PFDA	SURR	98.6	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1
d5-EtFOSAA	SURR	76.2	70 - 130		B8D0148	27-Apr-18	0.257 L	03-May-18 01:07	1

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

nw 4.18

Vista 3 Analytical Laboratory

Sample ID: WI-A06-FB18-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:27

Laboratory Data

Lab Sample: 1800728-03
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.415	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxA	ND	0.815	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHpA	ND	0.499	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFHxS	ND	0.388	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOA	ND	1.01	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFNA	ND	1.35	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFOS	ND	0.974	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDA	ND	1.20	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
MeFOSAA	ND	2.85	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
EtFOSAA	ND	1.81	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFUnA	ND	0.239	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFDoA	ND	0.891	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTrDA	ND	0.883	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
PFTeDA	ND	0.727	4.68	9.36		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.0	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1
d5-EtFOSAA	SURR	82.9	70 - 130		B8D0148	27-Apr-18	0.267 L	03-May-18 01:18	1

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

new 6141.8

Vista Analytical Laboratory 4

Sample ID: WI-A06-RW20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-04
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	20.0	0.429	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxA	19.1	0.843	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHpA	3.33	0.516	4.84	9.68	J	B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFHxS	118	0.402	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOA	43.7	1.05	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFNA	ND	1.39	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFOS	30.5	1.01	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDA	ND	1.24	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
MeFOSAA	ND	2.94	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
EtFOSAA	ND	1.87	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFUnA	ND	0.247	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFDoA	ND	0.922	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTrDA	ND	0.913	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
PFTeDA	ND	0.752	4.84	9.68		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.9	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
13C2-PFDA	SURR	101	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1
d5-EtFOSAA	SURR	82.3	70 - 130		B8D0148	27-Apr-18	0.258 L	03-May-18 01:30	1

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

nw 6/4/18

Vista Analytical Laboratory 5

Sample ID: WI-A06-FB20-0418

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-4041 695610.06.FI.FS
Location: DW
Matrix: Drinking Water
Date Collected: 20-Apr-18 10:10

Laboratory Data

Lab Sample: 1800728-05
Date Received: 21-Apr-18 09:38
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.412	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxA	ND	0.811	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHpA	ND	0.496	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFHxS	ND	0.386	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOA	ND	1.01	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFNA	ND	1.34	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFOS	ND	0.968	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDA	ND	1.19	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
MeFOSAA	ND	2.83	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
EtFOSAA	ND	1.80	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFUnA	ND	0.237	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFDoA	ND	0.886	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTrDA	ND	0.878	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
PFTeDA	ND	0.723	4.66	9.31		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.0	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
13C2-PFDA	SURR	83.4	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1
d5-EtFOSAA	SURR	87.9	70 - 130		B8D0148	27-Apr-18	0.268 L	03-May-18 01:41	1

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

ms 6/4/18

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	SAMPLE_MATRIX_DESC	SAMPLE_NAME	SAMPLE_MATRIX	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB18-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	SAMPLE_MATRIX_DESC	SAMPLE_NAME	SAMPLE_MATRIX	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds
		WHIDBEY_ISLAND_NAS			1800728			Water for QC samples	WI-A06-FB20-0418	WQ	20-Apr-18	Perfluoroalkyl Compounds