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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Combined Level 2 and Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1800140

Naval Weapons Industrial Reserve Plant Calverton
Riverhead, New York

August 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

February 14, 2018

Vista Work Order No. 1800140

Ms. Kristi Francisco
Tetra Tech
5700 Lake Wright Drive, Suite 309
Norfolk, VA 23502

Dear Ms. Francisco,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on January 19, 2018. This sample set was analyzed on a standard turn-around time, under your Project Name '112G08005-WE05'. The SDG Number is WE05.

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.

SDG Number WE05
Vista Work Order No. 1800140
Case Narrative

Sample Condition on Receipt:

Nineteen soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

VAL-PFAS

The samples were extracted and analyzed for a selected list of PFAS using VAL Method PFAS.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The extracts of the following samples, as well as the OPR, Matrix Spike and Matrix Spike Duplicate, were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria:

Laboratory ID	Sample Name
1800140-05	FT-SB505-1618
1800140-06	FT-SB506-2022
1800140-07	FT-SB507-1819
1800140-09	FT-SB509-1718
1800140-13	FT-SS512-0001
1800140-14	FT-SB512-0708
1800140-15	FT-SB512-2223
1800140-17	FT-SB513-1819
1800140-18	FT-Dup01-20180116

The results were similar in the second injections. The results from the original injections have been reported.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "FT-SB505-1618". The MS/MSD recoveries and RPDs were within the acceptance criteria.

In addition, the laboratory QC officer must read and sign a copy of the Quality Assurance Review Form displayed on the next page of this Attachment. Electronic deliverables are not considered to be complete without the accompanying Quality Assurance Review Form.

I Anna Helalc, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (916) 673 1520 If there are any questions or problems with the enclosed electronic deliverables.

Signature: Anna Title: QA Manager Date: 02/14/2017

Revision 9
ISG
08/18/16

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1800140-01	FT-SS501-0001		16-Jan-18 15:05	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-02	FT-SS502-0001		16-Jan-18 15:55	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-03	FT-SS503-0001		17-Jan-18 10:45	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-04	FT-SB504-2022		16-Jan-18 14:43	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-05	FT-SB505-1618	MS/MSD	16-Jan-18 15:36	19-Jan-18 09:28	HDPE Jar, 6 oz
					HDPE Jar, 6 oz
					HDPE Jar, 6 oz
1800140-06	FT-SB506-2022		16-Jan-18 12:08	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-07	FT-SB507-1819		16-Jan-18 13:08	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-08	FT-SB508-1617		18-Jan-18 08:45	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-09	FT-SB509-1718		16-Jan-18 13:53	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-10	FT-SB510-0910		17-Jan-18 12:05	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-11	FT-SB510-1415		17-Jan-18 12:10	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-12	FT-SB511-1617		17-Jan-18 12:47	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-13	FT-SS512-0001		17-Jan-18 08:58	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-14	FT-SB512-0708		17-Jan-18 09:25	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-15	FT-SB512-2223		17-Jan-18 09:30	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-16	FT-SS513-0001		17-Jan-18 09:35	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-17	FT-SB513-1819		17-Jan-18 09:55	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-18	FT-Dup01-20180116		16-Jan-18 12:00	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-19	FT-Dup02-20180117		17-Jan-18 12:00	19-Jan-18 09:28	HDPE Jar, 6 oz

ANALYTICAL RESULTS

Sample ID: Method Blank

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
Matrix: Solid

Laboratory Data

Lab Sample: B8A0197-BLK1
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.363	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
PFOA	ND	0.236	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
PFOS	ND	0.845	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	87.9	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
13C2-PFOA	IS	85.8	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
13C8-PFOS	IS	89.3	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: OPR **VAL - PFAS**

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
Matrix: Solid

Laboratory Data

Lab Sample: B8A0197-BS1
Column: BEH C18

Analyte	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	8.91	10.0	89.1	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
PFOA	10.7	10.0	107	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
PFOS	10.4	10.0	104	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
Labeled Standards	**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C3-PFBS	IS		111	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
13C2-PFOA	IS		90.8	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
13C8-PFOS	IS		88.6	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1

Sample ID: FT-SS501-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:05

Laboratory Data

Lab Sample: 1800140-01
Date Received: 19-Jan-18 09:28
% Solids: 86.0

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.343	0.946	1.89		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
PFOA	0.468	0.223	0.946	1.89	J	B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
PFOS	3.13	0.799	0.946	1.89		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.9	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
13C2-PFOA	IS	102	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
13C8-PFOS	IS	85.5	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS502-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:55

Laboratory Data

Lab Sample: 1800140-02
Date Received: 19-Jan-18 09:28
% Solids: 89.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.347	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
PFOA	ND	0.225	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
PFOS	ND	0.807	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
13C2-PFOA	IS	103	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
13C8-PFOS	IS	84.9	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS503-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 10:45

Laboratory Data

Lab Sample: 1800140-03
Date Received: 19-Jan-18 09:28
% Solids: 81.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.333	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
PFOA	3.42	0.216	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
PFOS	4.81	0.775	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.1	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
13C2-PFOA	IS	93.2	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
13C8-PFOS	IS	77.6	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB504-2022

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 14:43

Laboratory Data

Lab Sample: 1800140-04
Date Received: 19-Jan-18 09:28
% Solids: 94.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.304	0.838	1.68		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
PFOA	0.497	0.198	0.838	1.68	J	B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
PFOS	ND	0.708	0.838	1.68		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.8	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
13C2-PFOA	IS	107	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
13C8-PFOS	IS	99.4	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB505-1618

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:36

Laboratory Data

Lab Sample: 1800140-05
Date Received: 19-Jan-18 09:28
% Solids: 94.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.318	0.875	1.75		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
PFOA	0.389	0.206	0.875	1.75	J	B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
PFOS	ND	0.739	0.875	1.75		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
13C2-PFOA	IS	84.7	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
13C8-PFOS	IS	92.2	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB505-1618

VAL - PFAS

Name:	Tetra Tech	Lab Sample:	B8A0197-MS1/B8A0197-MSD1	Source Lab Sample:	1800140-05
Project:	112G08005-WE05	QC Batch:	B8A0197	Date Extracted:	01-Feb-18
Matrix:	Solid	Samp Size:	1.27/1.21 g	Column:	BEH C18

Analyte	Sample (ng/g)	MS (ng/g)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/g)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	7.70	8.33	92.4		9.52	8.75	109	16.5		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1
PFOA	0.389	10.4	8.33	120		10.3	8.75	113	6.01		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1
PFOS	ND	8.69	8.33	96.2		8.54	8.75	89.9	6.77		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	104		107		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1
13C2-PFOA	IS	95.1		87.7		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1
13C8-PFOS	IS	90.4		93.8		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1

Sample ID: FT-SB506-2022

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 12:08

Laboratory Data

Lab Sample: 1800140-06
Date Received: 19-Jan-18 09:28
% Solids: 95.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.302	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
PFOA	ND	0.196	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
PFOS	ND	0.702	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
13C2-PFOA	IS	96.4	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
13C8-PFOS	IS	110	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB507-1819

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 13:08

Laboratory Data

Lab Sample: 1800140-07
Date Received: 19-Jan-18 09:28
% Solids: 94.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.303	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
PFOA	5.52	0.197	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
PFOS	ND	0.704	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
13C2-PFOA	IS	94.0	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
13C8-PFOS	IS	95.1	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB508-1617

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 18-Jan-18 08:45

Laboratory Data

Lab Sample: 1800140-08
Date Received: 19-Jan-18 09:28
% Solids: 95.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.310	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
PFOA	3.46	0.202	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
PFOS	2.07	0.723	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	89.4	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
13C2-PFOA	IS	87.2	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
13C8-PFOS	IS	101	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB509-1718

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 13:53

Laboratory Data

Lab Sample: 1800140-09
Date Received: 19-Jan-18 09:28
% Solids: 88.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.309	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
PFOA	ND	0.201	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
PFOS	30.0	0.719	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
13C2-PFOA	IS	86.3	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
13C8-PFOS	IS	93.7	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB510-0910

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:05

Laboratory Data

Lab Sample: 1800140-10
Date Received: 19-Jan-18 09:28
% Solids: 93.2

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.336	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
PFOA	ND	0.218	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
PFOS	5.18	0.781	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.7	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
13C2-PFOA	IS	91.2	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
13C8-PFOS	IS	91.2	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB510-1415

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:10

Laboratory Data

Lab Sample: 1800140-11
Date Received: 19-Jan-18 09:28
% Solids: 92.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.321	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
PFOA	2.43	0.209	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
PFOS	ND	0.747	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
13C2-PFOA	IS	108	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
13C8-PFOS	IS	96.5	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB511-1617

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:47

Laboratory Data

Lab Sample: 1800140-12
Date Received: 19-Jan-18 09:28
% Solids: 86.6

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.338	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
PFOA	2.53	0.220	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
PFOS	ND	0.787	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
13C2-PFOA	IS	103	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
13C8-PFOS	IS	91.4	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS512-0001

VAL - PFAS

Client Data

Name:	Tetra Tech	Matrix:	Soil
Project:	112G08005-WE05	Date Collected:	17-Jan-18 08:58
SDG:	WE05		

Laboratory Data

Lab Sample:	1800140-13	Column:	BEH C18
Date Received:	19-Jan-18 09:28		
% Solids:	87.9		

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.344	0.949	1.90		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
PFOA	0.510	0.224	0.949	1.90	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
PFOS	1.52	0.802	0.949	1.90	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	121	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
13C2-PFOA	IS	98.7	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
13C8-PFOS	IS	81.2	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB512-0708

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:25

Laboratory Data

Lab Sample: 1800140-14
Date Received: 19-Jan-18 09:28
% Solids: 94.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.315	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
PFOA	ND	0.205	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
PFOS	ND	0.733	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
13C2-PFOA	IS	86.6	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
13C8-PFOS	IS	82.9	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB512-2223

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:30

Laboratory Data

Lab Sample: 1800140-15
Date Received: 19-Jan-18 09:28
% Solids: 85.2

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.355	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
PFOA	ND	0.231	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
PFOS	ND	0.827	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.0	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
13C2-PFOA	IS	90.5	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
13C8-PFOS	IS	89.9	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS513-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05
Matrix: Soil
Date Collected: 17-Jan-18 09:35

Laboratory Data

Lab Sample: 1800140-16
Date Received: 19-Jan-18 09:28
% Solids: 80.3
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.380	1.05	2.09		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
PFOA	0.259	0.247	1.05	2.09	J	B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
PFOS	ND	0.884	1.05	2.09		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	135	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
13C2-PFOA	IS	101	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
13C8-PFOS	IS	87.4	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB513-1819

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:55

Laboratory Data

Lab Sample: 1800140-17
Date Received: 19-Jan-18 09:28
% Solids: 94.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.314	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
PFOA	ND	0.204	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
PFOS	ND	0.732	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
13C2-PFOA	IS	86.5	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
13C8-PFOS	IS	105	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-Dup01-20180116

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 12:00

Laboratory Data

Lab Sample: 1800140-18
Date Received: 19-Jan-18 09:28
% Solids: 95.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.318	0.877	1.75		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
PFOA	0.557	0.207	0.877	1.75	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
PFOS	ND	0.741	0.877	1.75		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
13C2-PFOA	IS	83.4	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
13C8-PFOS	IS	83.6	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-Dup02-20180117

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:00

Laboratory Data

Lab Sample: 1800140-19
Date Received: 19-Jan-18 09:28
% Solids: 92.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.326	0.897	1.79		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
PFOA	2.24	0.212	0.897	1.79		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
PFOS	0.975	0.758	0.897	1.79	J	B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
13C2-PFOA	IS	91.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
13C8-PFOS	IS	96.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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**
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.

1800140 6.6°C

TETRA TECH

CHAIN OF CUSTODY

Project No:	Facility:	Project Manger:	Phone:	Laboratory Name and Contact:
112G08005-WE05	NWIRP Calverton Site 2	Kristi Francisco	757-466-4902	Vista Karen Volpendesta

Samplers:	Field Ops. Leader:	Phone:	Address:
Jacob Birkett Beau Benfield	Jacob Birkett	757-814-9916	1104 Windfield Way
	Fed Ex Airbill Number: 8102 9107 0959		City, State, Zip: El Dorado Hills, CA 95762
	Container Type: Plastic (P) or Glass (G)	P	
	Preservative Used:	None	

Date Year: 2018	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	PFAS method 537 (ONLY PFOA, PFOS, PFBS)	Comments
1/16	1505	FT-SS501-0001	S501	0	1	SO	G	1		1	
1/16	1555	FT-SS502-0001	S502	0	1	SO	G	1		1	
1/17	1045	FT-SS503-0001	S503	0	1	SO	G	1		1	
1/16	1443	FT-SB504-2022	S504	4	22	SO	G	1		1	
1/16	1536	FT-SB505-1618	S505	5	18	SO	G	~~1~~ 3		3	Run MS/MSD
1/16	1208	FT-SB506-2022	S506	6	22	SO	G	1		1	
1/16	1308	FT-SB507-1819	S507	18	19	SO	G	1		1	
1/18	0845	FT-SB508-1617	S508	16	17	SO	G	1		1	
1/16	1353	FT-SB509-1718	S509	17	18	SO	G	1		1	
1/17	1205	FT-SB510-0910	S510	9	10	SO	G	1		1	
1/17	1210	FT-SB510-1415	S510	14	15	SO	G	1		1	
1/17	1247	FT-SB511-1617	S511	16	17	SO	G	1		1	
1/17	0858	FT-SS512-0001	S512	0	1	SO	G	1		1	
1/17	0925	FT-SB512-0708	S512	7	8	SO	G	1		1	
1/17	0930	FT-SB512-2223	S512	22	23	SO	G	1		1	
1/17	0935	FT-SS513-0001	S513	0	1	SO	G	1		1	
1/17	0955	FT-SB513-1819	S513	18	19	SO	G	1		1	

1. Relinquished By:	Date:	Time:	1. Received By:	Date:	Time:
Jacob Birkett	01/18/18	1530	FedEx		
2. Relinquished By: Ashwini Prakash	Date: 01/19/18	Time: 1018	2. Received By:	Date:	Time:

EXACT COPY OF ORIGINAL
Init BJB 1/19/18

1800140

TETRA TECH

CHAIN OF CUSTODY

Page 2 of 2

Project No:	Facility:	Project Manger:	Phone:	Laboratory Name and Contact:
112G08005-WE05	NWIRP Calverton Site 2	Kristi Francisco	757-466-4902	Vista Karen Volpendesta
Samplers: Jacob Birkett, Beau Benfield		Field Ops. Leader: Jacob Birkett	Phone: 757-814-9916	Address: 1104 Windfield Way
		Fed Ex Airbill Number: 8102 9107 0959		City, State, Zip: El Dorado Hills, CA 95762
		Container Type: Plastic (P) or Glass (G)	P	P	P
		Preservative Used:	None	None	Trizma

Date Year: 2018	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	PFAS method 537 (ONLY PFOA, PFOS, PFBS)	PFAS method 537 modified: List 14 compounds	PFAS method 537 V1.1: List 14 compounds	Comments
* 1/18	1030	FT-TW507-1924	S507	19	24	GW	G	6			6		Run MSMSD
* 1/18	0815	FT-TW510-1520	S510	15	20	GW	G	2			2		
* 1/18	0918	FT-TW511-1722	S511	17	22	GW	G	2			2		
* 1/18	0950	FT-TW513-2025	S513	20	25	GW	G	2			2		
1/16	1200	FT-Dup01-20180116	--	--	--	SO	G	1		1			Duplicate
1/17	1200	FT-Dup02-20180117	--	--	--	SO	G	1		1			Duplicate
* 1/18	0800	FT-Dup03-20180118	--	--	--	GW	G	2			2		Duplicate
* 1/18	1030	FT-TW507-1924-FRB	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/16	1600	FT-EB01-20180116	--	--	--	QC	G	2			2		Equipment Blank: Cutting shoe
* 1/17	1105	FT-EB02-20180117	--	--	--	QC	G	2			2		Equipment Blank: Cutting shoe/liner
* 1/18	1600	FT-EB03-20180118	--	--	--	QC	G	2			2		Equipment Blank: ~~Cutting shoe~~ point holder
* 1/16	1605	FT-FRB01-20180116	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/17	1140	FT-FRB02-20180117	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/17	1100	FT-FB02-20180117	--	--	--	QC	G	2				2	Field Blank: drilling water tank

JBB 1-18-18

1. Relinquished By:	Date:	Time:	1. Received By:	Date:	Time:
Jacob Birkett [signature]	01/18/18	1530	FedEx		
2. Relinquished By: Ashweeni Prakash [signature]	01/19/18	1018	2. Received By:		

Note there is no FT-FB01 sample

* WO# 1800153

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1800140 **TAT** Std

Samples Arrival:	**Date/Time** 01/19/18 0928	**Initials:** AP	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 01/20/18 1135	**Initials:** BSB	**Location:** WR-2 **Shelf/Rack:** F4

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

Temp °C: 6.7 (uncorrected)	**Time:** 1015	**Thermometer ID:** IR-4
Temp °C: 6.6 (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 # 8102 9107 0959	✓		
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: 1800140

Prep Expiration: 2018-Mar-17
Client: Tetra Tech

Workorder Due: 09-Feb-18 00:00

TAT: 21

Method: **VAL - PFAS DoD (LOQ as RL)**
Matrix: **Solid**

Prep Batch: B8A0197

Also run: **Percent Solids**
Version: PFOA, PFOS, PFBS Only (3 Analytes)
DoD: DoD QSM 5.1

Prep Data Entered: 02/05/18 MA
Date and Initials

Initial Sequence: S8B0013

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1800140-01	A	☑	☑	FT-SS501-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-02		☑	☑	FT-SS502-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-03		☑	☑	FT-SS503-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-04		☑	☑	FT-SB504-2022		WR-2 F-4	HDPE Jar, 6 oz
1800140-05		☑	☑	FT-SB505-1618	**MS/MSD**	WR-2 F-4	HDPE Jar, 6 oz
1800140-06		☑	☑	FT-SB506-2022		WR-2 F-4	HDPE Jar, 6 oz
1800140-07		☑	☑	FT-SB507-1819		WR-2 F-4	HDPE Jar, 6 oz
1800140-08		☑	☑	FT-SB508-1617		WR-2 F-4	HDPE Jar, 6 oz
1800140-09		☑	☑	FT-SB509-1718		WR-2 F-4	HDPE Jar, 6 oz
1800140-10		☑	☑	FT-SB510-0910		WR-2 F-4	HDPE Jar, 6 oz
1800140-11		☑	☑	FT-SB510-1415		WR-2 F-4	HDPE Jar, 6 oz
1800140-12		☑	☑	FT-SB511-1617		WR-2 F-4	HDPE Jar, 6 oz
1800140-13		☑	☑	FT-SS512-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-14		☑	☑	FT-SB512-0708		WR-2 F-4	HDPE Jar, 6 oz
1800140-15		☑	☑	FT-SB512-2223		WR-2 F-4	HDPE Jar, 6 oz
1800140-16		☑	☑	FT-SS513-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-17		☑	☑	FT-SB513-1819		WR-2 F-4	HDPE Jar, 6 oz
1800140-18		☑	☑	FT-Dup01-20180116		WR-2 F-4	HDPE Jar, 6 oz
1800140-19		☑	☑	FT-Dup02-20180117		WR-2 F-4	HDPE Jar, 6 oz

WO Comments: **Provide all analytical runs.**
MS/MSD per batch, if MS/MSD is not provided - LCS/LCSD.

Pre-Prep Check Out: JR 2.1.18
Pre-Prep Check In: JR 2.1.18

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: JR 2.1.18
Spike Reconciled Initals/Date: JR 2.1.18
VialBoxID: La-tea-da 2

PREPARATION BENCH SHEET

Matrix: Solid

B8A0197

Chemist: KC

Method: VAL - PFAS DoD (LOQ as RL)

Prepared using: LCMS - Sonication/SPE Extraction

Prep Date/Time: 31-Jan-18 10:04 ~~2-1-18~~ 2-1-18 1735 JTC

BalanceID: HRMS-8

VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	RS CHEM/WIT DATE
B8A0197-BLK1	(1.00)	KC JTC 2/1/18	JTC 2-1-18	MA 2-2-18	MA 2-2-18	KC MA 2/2/18
B8A0197-BS1	↓	↓	↓	↓	↓	↓
B8A0197-MS1 1800140-05	1.27					
B8A0197-MSD1 1800140-05	1.21					
1800140-01	1.23					
1800140-02	1.17					
1800140-03	1.34					
1800140-04	1.26					
1800140-05	1.21					
1800140-06	1.26					
1800140-07	1.27					
1800140-08	1.23					
1800140-09	1.33					
1800140-10	1.16					
1800140-11	1.22					
1800140-12	1.24	↓	↓	↓	↓	↓

IS: 17L2601, 10µL (V4)

IS SUP: NA

NS: 17L2103, 10µL (V3)

RS: 17L2332, 10µL (V4)

Ext SOLV: 1:1 MeOH/ACN

SPE Chem: Strata X-AW 33µm 200mg/6mL

Ele SOLV: 0.5% NH4OH in MeOH, MeOH

Final Volume(s): 1mL

Notes:

PREPARATION BENCH SHEET

Matrix: Solid

B8A0197

Chemist: KC

Method: VAL - PFAS DoD (LOQ as RL)

Prepared using: LCMS - Sonication/SPE Extraction

Prep Date/Time: 31-Jan-18 10:04 2·1·18 17:35 HC

BalanceID: HRMS-8

VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	RS CHEM/WIT DATE
1800140-13	1.20	KC HC 2/1/18	HC 2·1·18	MA 2·2·18	MA 2·2·18	KC MA 2/2/18
1800140-14	1.22					
1800140-15	1.20					
1800140-16	1.19					
1800140-17	1.22					
1800140-18	1.20					
1800140-19	1.21					

IS: 17L2601, 10µL (V4)

IS SUP: NA

NS: 17L2103, 10µL (V3)

RS: 17L2332, 10µL (V4)

Ext SOLV: 1:1 MeOH/ACN

SPE Chem: Strata X-AW 33µm 200mg 6mL

Ele SOLV: 0.5% NH4OH in MeOH, MeOH

Final Volume(s): 1mL

Notes:

Batch: B8A0197

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1800140-01	1.23	85.96491	**1.0574**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-02	1.17	89.48547	**1.0470**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-03	1.34	81.35049	**1.0901**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-04	1.26	94.67787	**1.1929**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-05	1.21	94.47852	**1.1432**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-06	1.26	95.52716	**1.2036**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-07	1.27	94.44444	**1.1994**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-08	1.23	95.07772	**1.1695**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-09	1.33	88.35443	**1.1751**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-10	1.16	93.23944	**1.0816**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-11	1.22	92.69841	**1.1309**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-12	1.24	86.62614	**1.0742**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-13	1.2	87.8531	**1.0542**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-14	1.22	94.47115	**1.1525**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-15	1.2	85.16321	**1.0220**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-16	1.19	80.28986	**0.9554**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-17	1.22	94.68437	**1.1551**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-18	1.2	95.07042	**1.1408**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-19	1.21	92.14092	**1.1149**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
B8A0197-BLK1	1	100.0000	1.0000	1000	01-Feb-18 17:35	KC				QC
B8A0197-BS1	1	100.0000	1.0000	1000	01-Feb-18 17:35	KC	17L2103	10		QC
B8A0197-MS1	1.27	94.47852	1.2000	1000	01-Feb-18 17:35	KC	17L2103	10		QC
B8A0197-MSD1	1.21	94.47852	1.143	1000	01-Feb-18 17:35	KC	17L2103	10		QC

✓ MA 02105/18

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B8A0196

Analyst: 7R **Test Code:** %Moist/%Solids

Analyte: **Units:** %

Dried at 110°C+/-5°C

Data Entry Verified by: (Initial and Date) NA

Inst HR MS-8

Date/Time IN: 2·1·18 15:49 Date/Time OUT 2·2·18 8:00

	B	C	D	E	F	G	H	K	M	N	O	P	Q
				Intial and Date:	~~7R~~ 2·1·18	7R 2·2·18						2·1·18 7R	
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH Before	pH After	Acid Added	Cl-	Visual Inspection
NA	1800140-01		Sample	1.29	4.71	4.23			NA	NA	NA		damp sand
	1800140-02		Sample	1.30	5.77	5.30							damp sand
	1800140-03		Sample	1.30	4.41	3.83							wet sand
	1800140-04		Sample	1.30	4.87	4.68							dampsand
	1800140-05		Sample	1.31	4.57	4.39							damp sand
	1800140-06		Sample	1.27	4.40	4.26							damp sand
	1800140-07		Sample	1.29	5.07	4.86							damp sand
	1800140-08		Sample	1.26	5.12	4.93							dampsand
	1800140-09		Sample	1.30	5.25	4.79			7R				wet sand
	1800140-10		Sample	1.28	4.83	4.59			2·1·18				damp sand
	1800140-11		Sample	1.30	4.45	4.22							dampsand
	1800140-12		Sample	1.32	4.61	4.17							dampsand
	1800140-13		Sample	1.28	4.82	4.39							Sand/soil
	1800140-14		Sample	1.28	5.44	5.21							sand
	1800140-15		Sample	1.26	4.63	4.13							dampsand
	1800140-16		Sample	1.29	4.74	4.06							sand/soil
	1800140-17		Sample	1.29	4.30	4.14							sand
	1800140-18		Sample	1.29	4.13	3.99							sand
	1800140-19		Sample	1.29	4.98	4.69							sand

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B8A0196

Analyst: FR **Test Code:** %Moist/%Solids

Analyte: Dried at 110°C+/-5°C **Units:** %

Data Entry Verified by: (Initial and Date) FR 2.2.18

Inst: HRMS-8

Date/Time IN: 2/1/18 15:49 Date/Time OUT 2/2/18 8:00

	B	C	D	E	F	G	H	K	M	N	O	P	Q
				Intial and Date:	FR 2/1/18	FR 2/2/18			FR 2/1/18				FR 2/1/18
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH Before	pH After	Acid Added	Cl-	Visual Inspection
NA	1800140-01		Sample	1.2900	4.7100	4.2300	2.9400	85.96	NA	NA	NA	NA	See Attachment
NA	1800140-02		Sample	1.3000	5.7700	5.3000	4.0000	89.49	NA	NA	NA	NA	See Attachment
NA	1800140-03		Sample	1.3000	4.4100	3.8300	2.5300	81.35	NA	NA	NA	NA	See Attachment
NA	1800140-04		Sample	1.3000	4.8700	4.6800	3.3800	94.68	NA	NA	NA	NA	See Attachment
NA	1800140-05		Sample	1.3100	4.5700	4.3900	3.0800	94.48	NA	NA	NA	NA	See Attachment
NA	1800140-06		Sample	1.2700	4.4000	4.2600	2.9900	95.53	NA	NA	NA	NA	See Attachment
NA	1800140-07		Sample	1.2900	5.0700	4.8600	3.5700	94.44	NA	NA	NA	NA	See Attachment
NA	1800140-08		Sample	1.2600	5.1200	4.9300	3.6700	95.08	NA	NA	NA	NA	See Attachment
NA	1800140-09		Sample	1.3000	5.2500	4.7900	3.4900	88.35	NA	NA	NA	NA	See Attachment
NA	1800140-10		Sample	1.2800	4.8300	4.5900	3.3100	93.24	NA	NA	NA	NA	See Attachment
NA	1800140-11		Sample	1.3000	4.4500	4.2200	2.9200	92.70	NA	NA	NA	NA	See Attachment
NA	1800140-12		Sample	1.3200	4.6100	4.1700	2.8500	86.63	NA	NA	NA	NA	See Attachment
NA	1800140-13		Sample	1.2800	4.8200	4.3900	3.1100	87.85	NA	NA	NA	NA	See Attachment
NA	1800140-14		Sample	1.2800	5.4400	5.2100	3.9300	94.47	NA	NA	NA	NA	See Attachment
NA	1800140-15		Sample	1.2600	4.6300	4.1300	2.8700	85.16	NA	NA	NA	NA	See Attachment
NA	1800140-16		Sample	1.2900	4.7400	4.0600	2.7700	80.29	NA	NA	NA	NA	See Attachment
NA	1800140-17		Sample	1.2900	4.3000	4.1400	2.8500	94.68	NA	NA	NA	NA	See Attachment
NA	1800140-18		Sample	1.2900	4.1300	3.9900	2.7000	95.07	NA	NA	NA	NA	See Attachment
NA	1800140-19		Sample	1.2900	4.9800	4.6900	3.4000	92.14	NA	NA	NA	NA	See Attachment

SAMPLE DATA – VAL - PFAS

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-95.qld

Last Altered: Monday, February 12, 2018 11:39:00 Pacific Standard Time
Printed: Monday, February 12, 2018 11:39:27 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.21e3	1.0000		2.98				
2	11	L-PFOA	413 > 368.7		9.11e3	1.0000		4.45				
3	16	L-PFOS	499 > 79.9	7.38e0	1.89e3	1.0000		4.75	4.70	0.0489	0.115	
4	36	13C3-PFBS	302. > 98.8	1.21e3	1.26e4	1.0000	0.109	2.98	2.70	1.20	11.0	87.9
5	41	13C2-PFOA	414.9 > 369.7	9.11e3	9.93e3	1.0000	1.069	4.61	4.30	11.5	10.7	85.8
6	44	13C8-PFOS	507.0 > 79.9	1.89e3	2.03e3	1.0000	1.041	5.11	4.80	11.6	11.2	89.3
7	58	13C5-PFHxA	318 > 272.9	1.26e4	1.26e4	1.0000	1.000	3.48	3.19	12.5	12.5	100.0
8	60	13C8-PFOA	421.3 > 376	9.93e3	9.93e3	1.0000	1.000	4.61	4.30	12.5	12.5	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-95.qld

Last Altered: Monday, February 12, 2018 11:39:00 Pacific Standard Time
Printed: Monday, February 12, 2018 11:39:39 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.03e3	2.03e3	1.0000	1.000	5.11	4.80	12.5	12.5	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	9.11e3	1.0000		4.61		0.000		
3	67	Total PFOS	499 > 79.9	7.38e0	1.89e3	1.0000		4.70		0.0489	0.115	

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

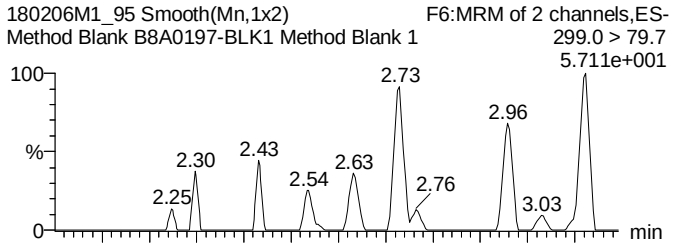
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-95.qld

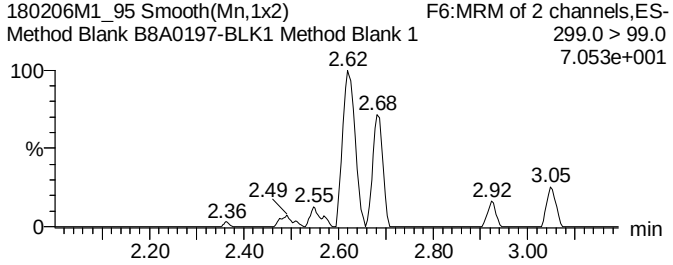
Last Altered: Monday, February 12, 2018 11:39:00 Pacific Standard Time
Printed: Monday, February 12, 2018 11:39:39 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

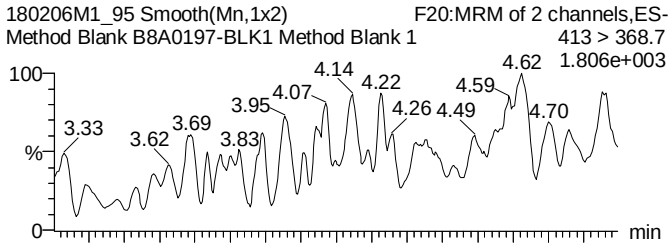
Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

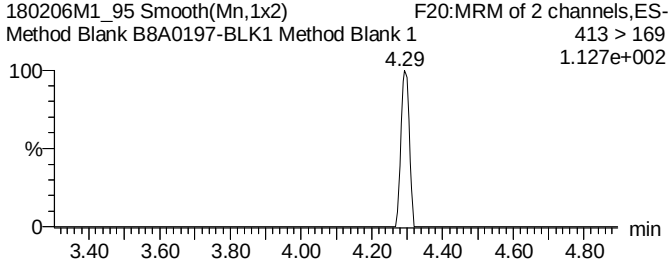
PFBS



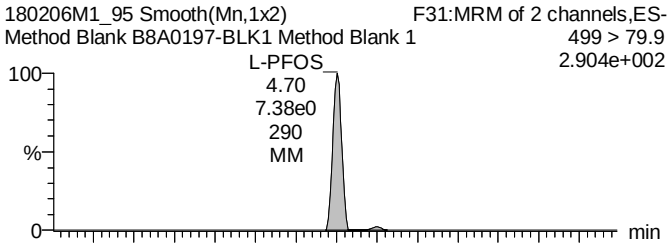


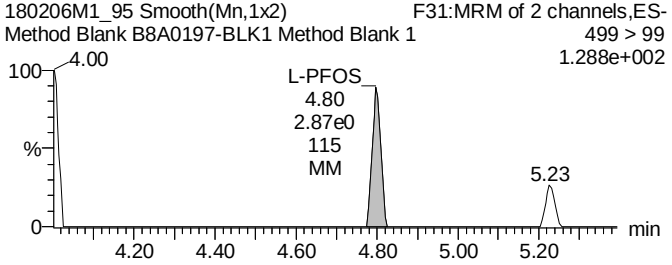
Total PFOA



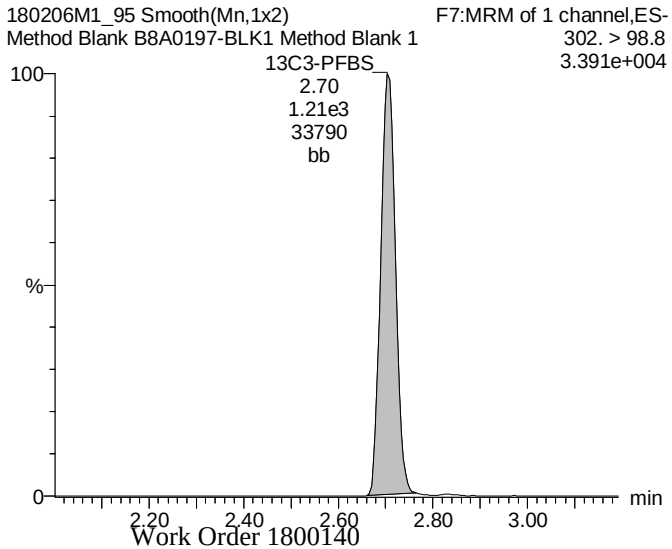


Total PFOS

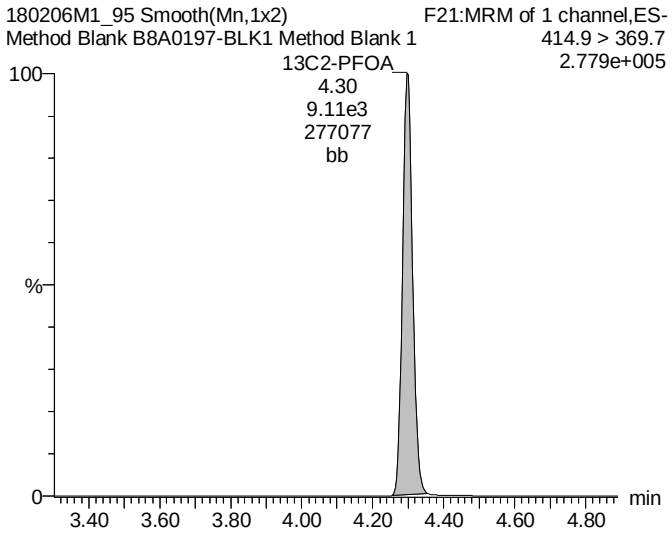




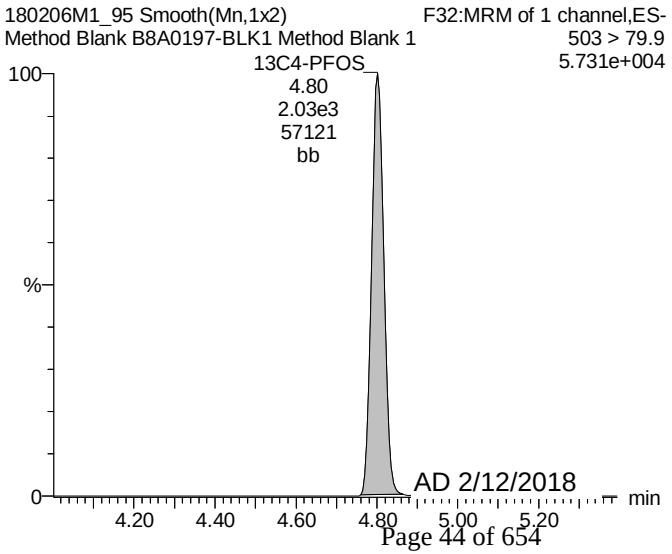
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

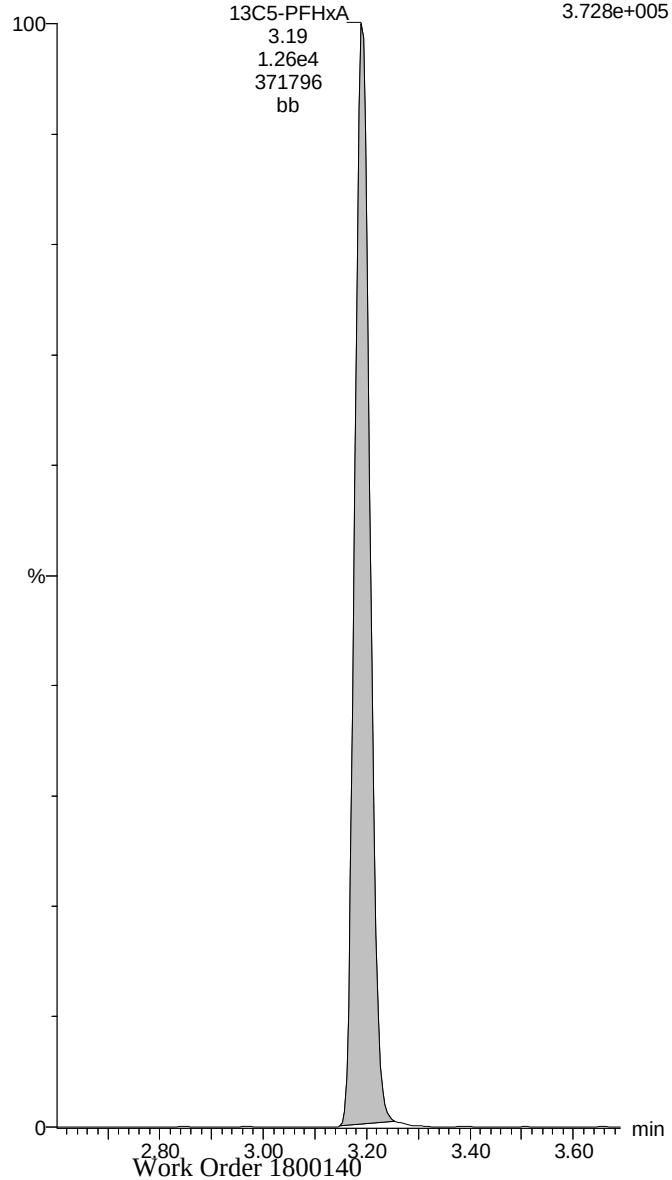
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-95.qld

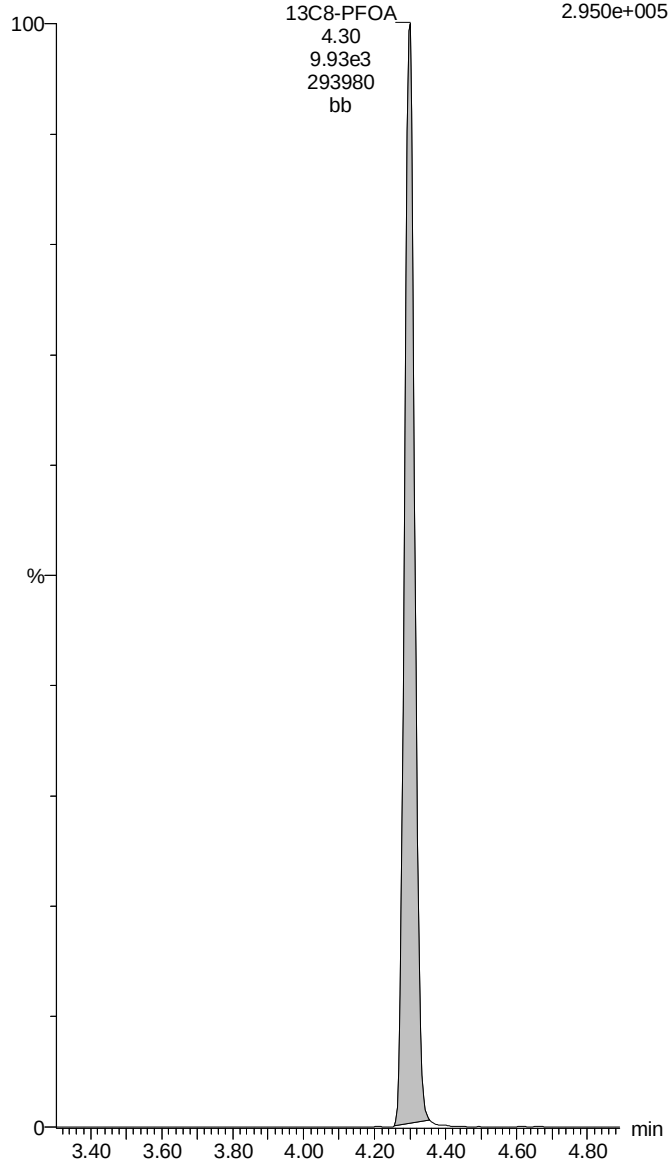
Last Altered: Monday, February 12, 2018 11:39:00 Pacific Standard Time
Printed: Monday, February 12, 2018 11:39:39 Pacific Standard Time

Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

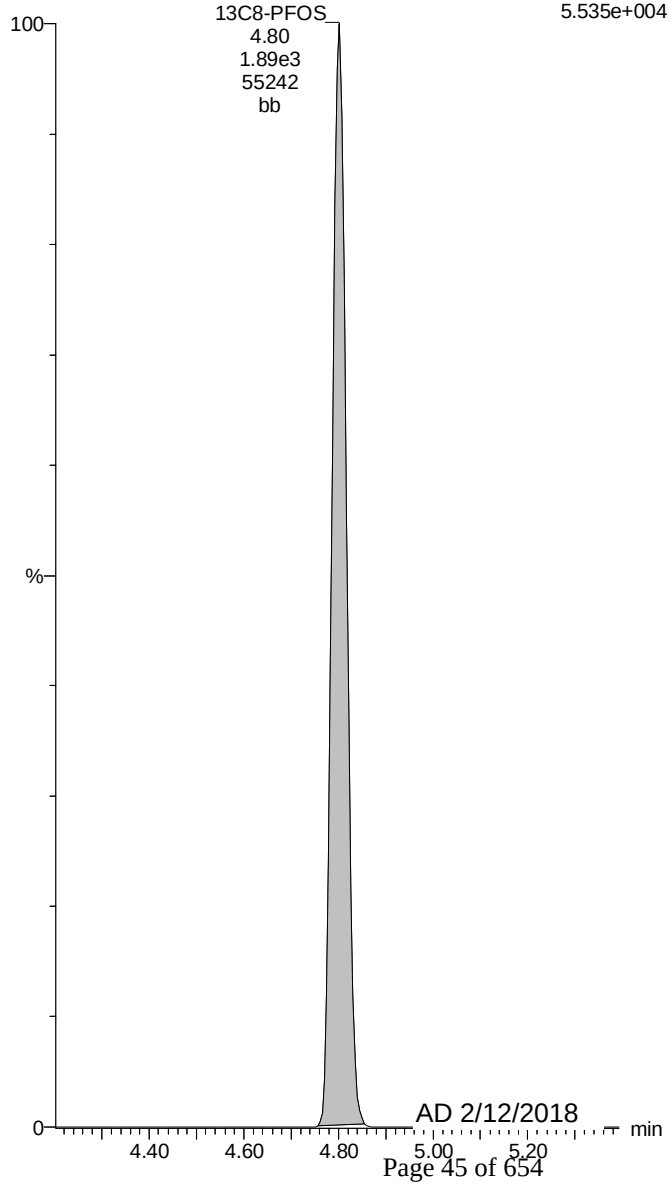
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-94.qld

Last Altered: Monday, February 12, 2018 11:31:24 Pacific Standard Time
Printed: Monday, February 12, 2018 11:32:31 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	1.82e3	1.35e3	1.0000		2.98	2.70	16.8	8.91	89.1
2	11	L-PFOA	413 > 368.7	7.42e3	9.11e3	1.0000		4.30	4.30	10.2	10.7	106.7
3	16	L-PFOS	499 > 79.9	9.08e2	9.75e2	1.0000		5.11	4.80	11.6	10.4	104.1
4	36	13C3-PFBS	302. > 98.8	1.35e3	1.11e4	1.0000	0.109	2.98	2.70	1.52	13.9	111.4
5	41	13C2-PFOA	414.9 > 369.7	9.11e3	9.38e3	1.0000	1.069	4.30	4.30	12.1	11.4	90.8
6	44	13C8-PFOS	507.0 > 79.9	9.75e2	1.06e3	1.0000	1.041	5.11	4.80	11.5	11.1	88.6
7	58	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	1.0000	1.000	3.48	3.19	12.5	12.5	100.0
8	60	13C8-PFOA	421.3 > 376	9.38e3	9.38e3	1.0000	1.000	4.30	4.30	12.5	12.5	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-94.qld

Last Altered: Monday, February 12, 2018 11:31:24 Pacific Standard Time
Printed: Monday, February 12, 2018 11:32:36 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.06e3	1.06e3	1.0000	1.000	5.11	4.80	12.5	12.5	100.0
2	66	Total PFOA	413 > 368.7	7.42e3	9.11e3	1.0000		4.30		10.2	10.7	
3	67	Total PFOS	499 > 79.9	9.08e2	9.75e2	1.0000		5.11		11.6	10.4	

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Vista Analytical Laboratory

Rev'd: MM 2/12/2018

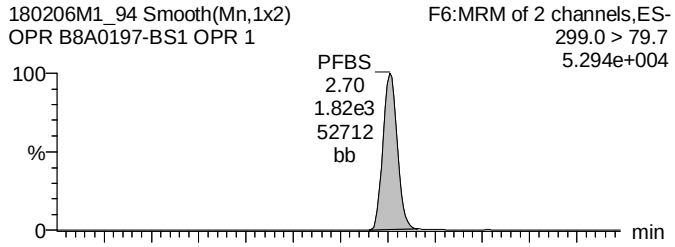
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-94.qld

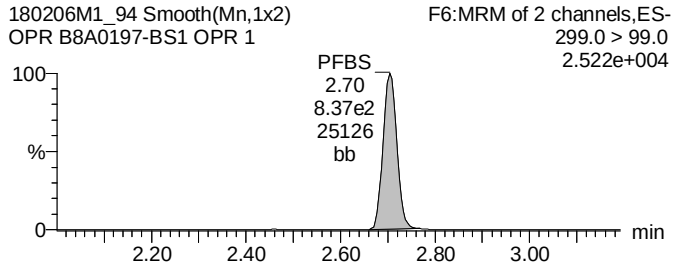
Last Altered: Monday, February 12, 2018 11:31:24 Pacific Standard Time
Printed: Monday, February 12, 2018 11:32:36 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

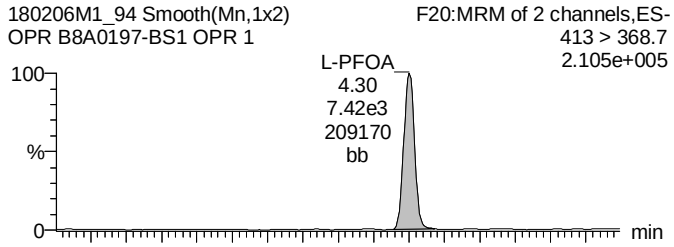
Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

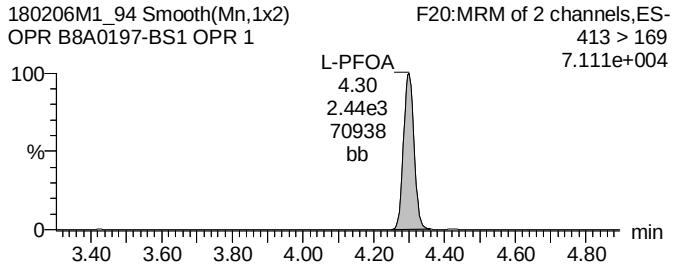
PFBS



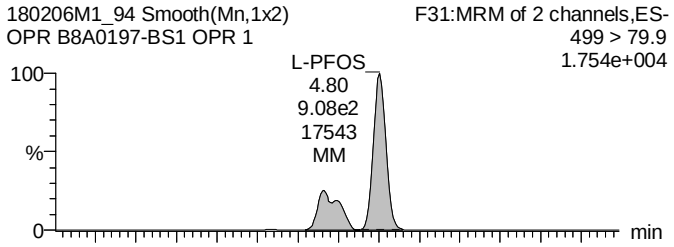


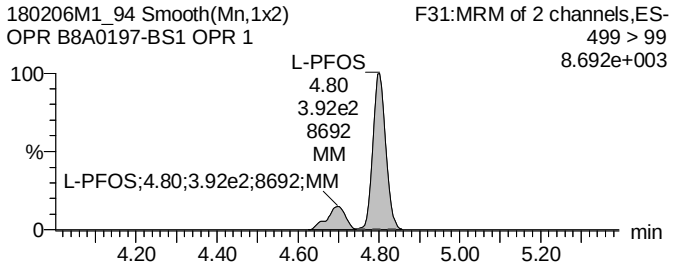
Total PFOA



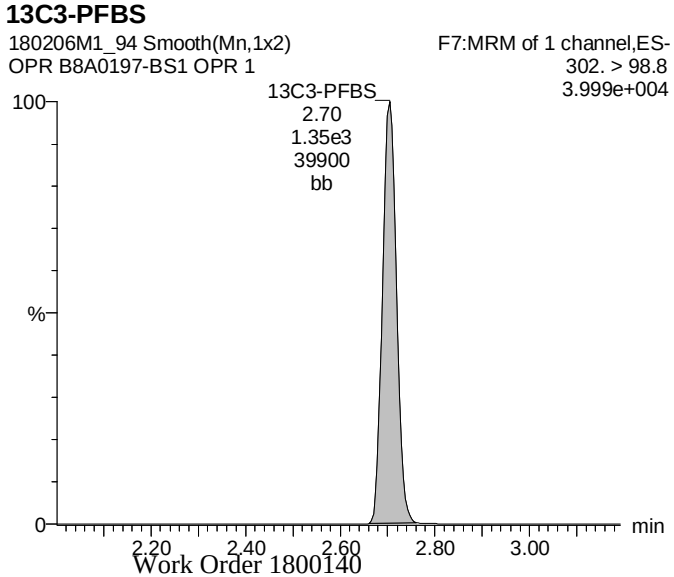


Total PFOS

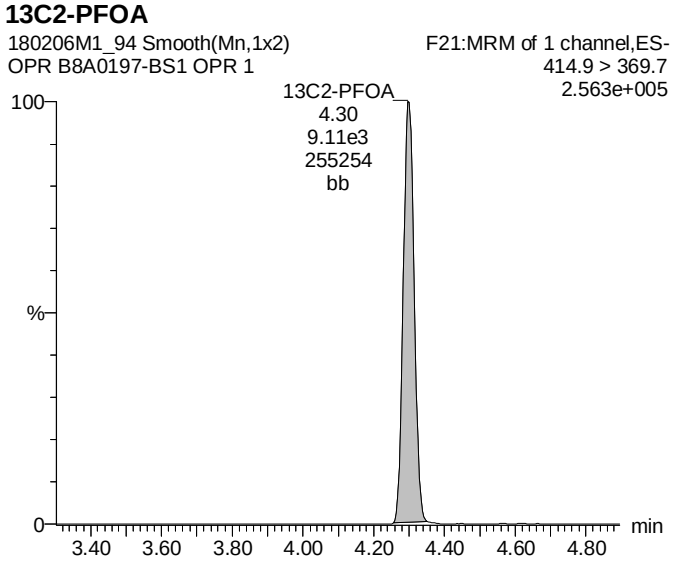




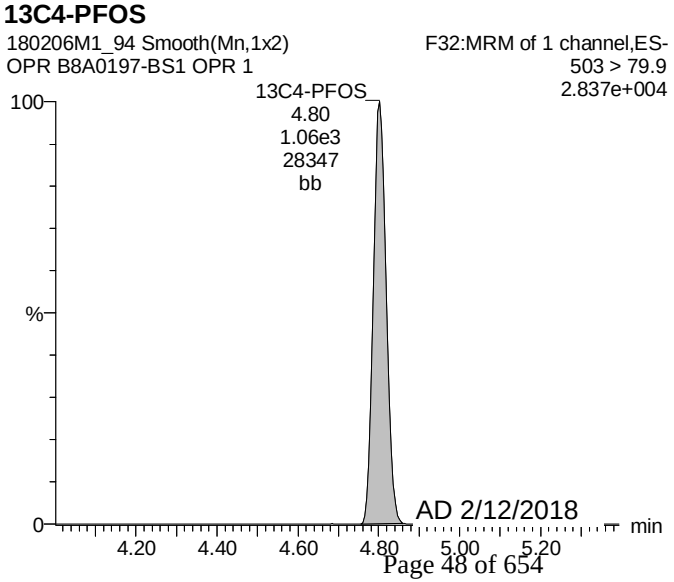
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

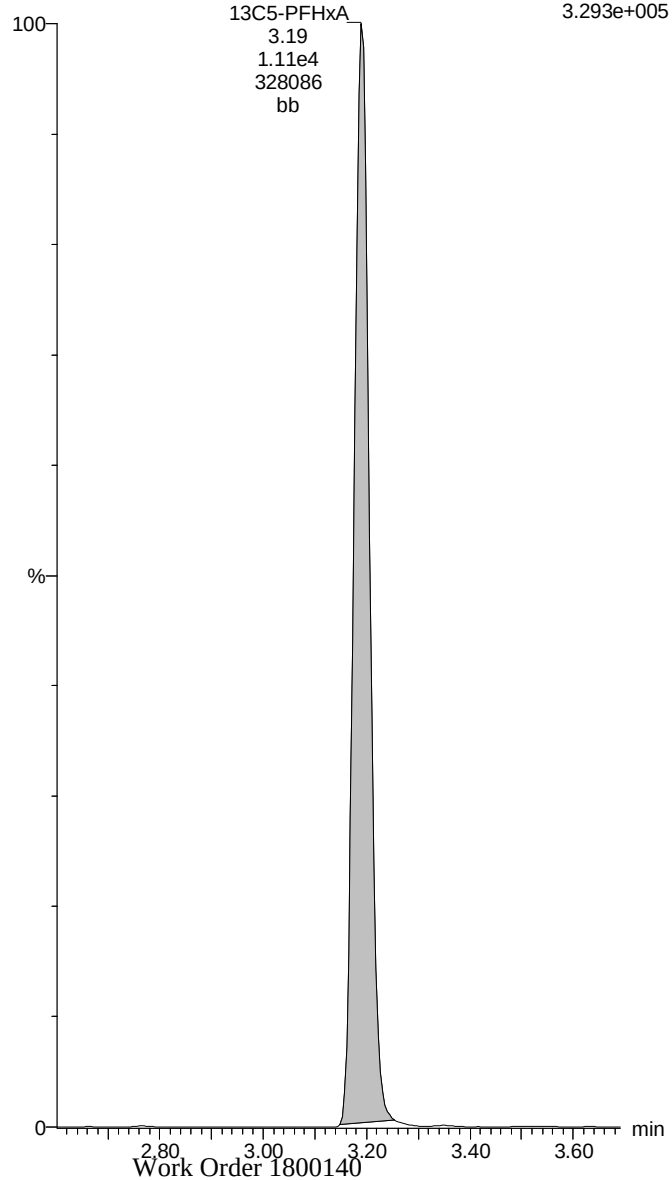
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-94.qld

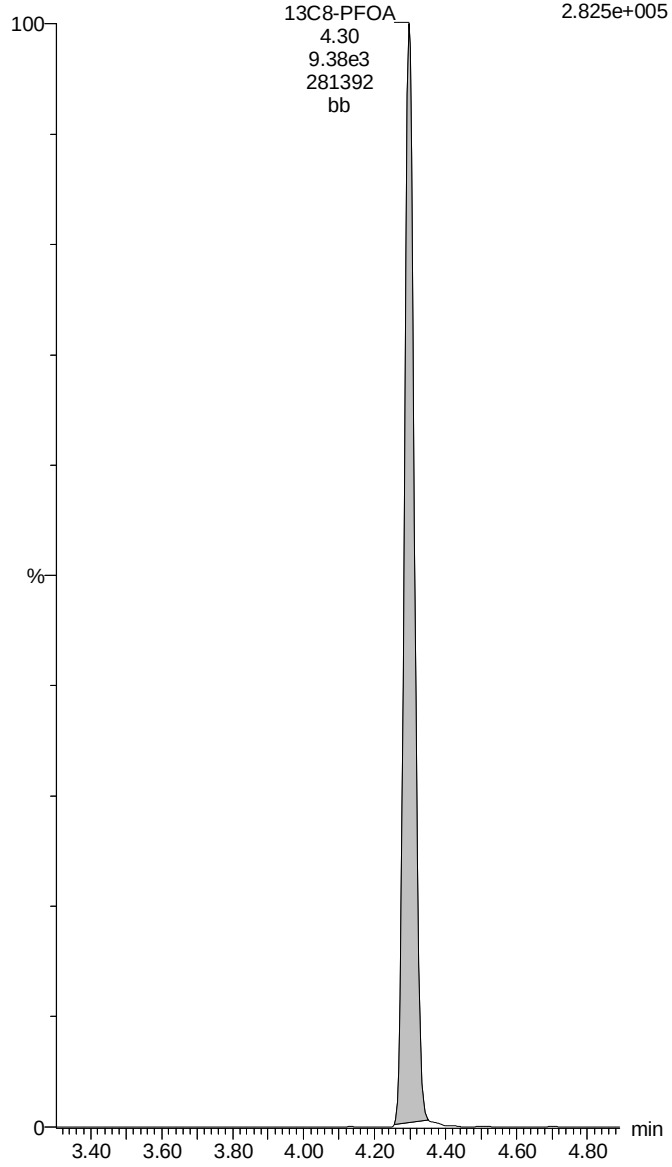
Last Altered: Monday, February 12, 2018 11:31:24 Pacific Standard Time
Printed: Monday, February 12, 2018 11:32:36 Pacific Standard Time

Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

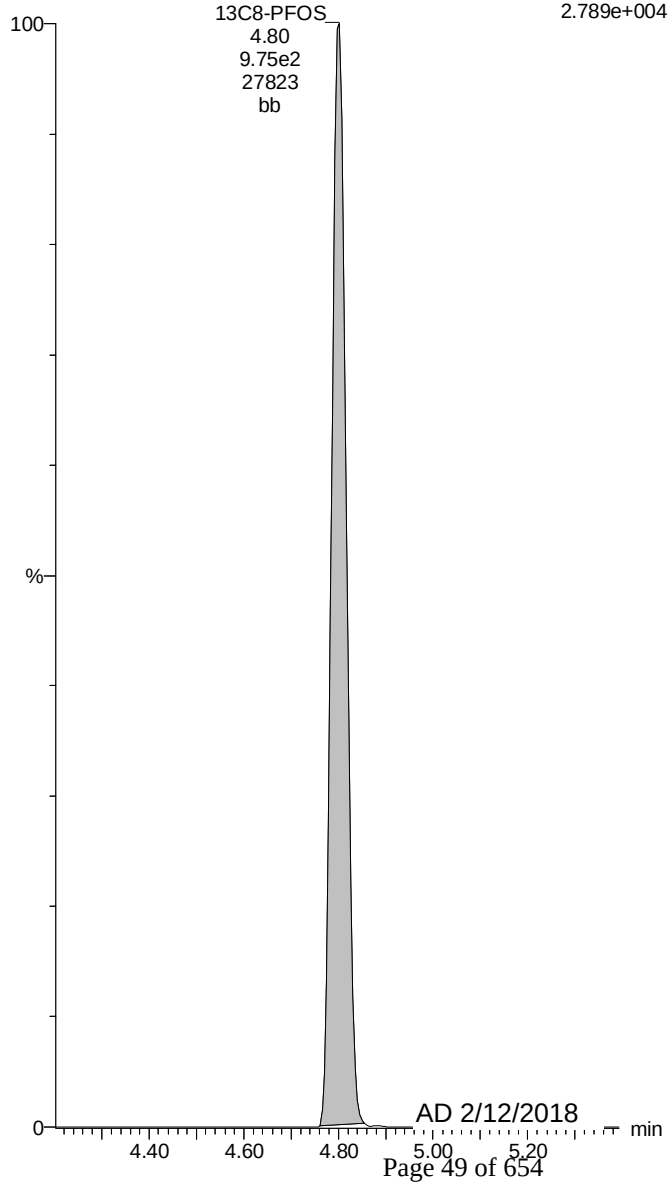
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-98.qld

Last Altered: Tuesday, February 13, 2018 08:40:10 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:40:31 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.18e3	1.0574		2.98				
2	11	L-PFOA	413 > 368.7	4.37e2	9.11e3	1.0574		4.30	4.30	0.600	0.468	
3	16	L-PFOS	499 > 79.9	5.90e2	2.02e3	1.0574		5.11	4.80	3.66	3.13	
4	36	13C3-PFBS	302. > 98.8	1.18e3	1.11e4	1.0574	0.109	2.98	2.70	1.32	11.5	96.9
5	41	13C2-PFOA	414.9 > 369.7	9.11e3	8.39e3	1.0574	1.069	4.61	4.30	13.6	12.0	101.5
6	44	13C8-PFOS	507.0 > 79.9	2.02e3	2.26e3	1.0574	1.041	5.11	4.80	11.1	10.1	85.5
7	58	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	1.0574	1.000	3.48	3.19	12.5	11.8	100.0
8	60	13C8-PFOA	421.3 > 376	8.39e3	8.39e3	1.0574	1.000	4.61	4.30	12.5	11.8	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-98.qld

Last Altered: Tuesday, February 13, 2018 08:40:10 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:40:43 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.26e3	2.26e3	1.0574	1.000	5.11	4.80	12.5	11.8	100.0
2	66	Total PFOA	413 > 368.7	4.82e2	9.11e3	1.0574		4.30		0.600	0.468	
3	67	Total PFOS	499 > 79.9	5.90e2	2.02e3	1.0574		5.11		3.66	3.13	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

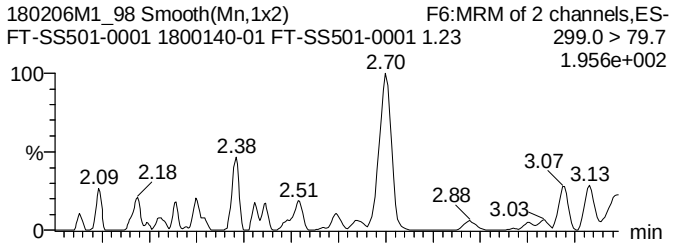
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-98.qld

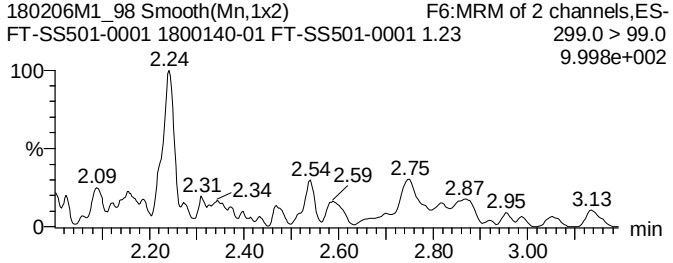
Last Altered: Tuesday, February 13, 2018 08:40:10 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:40:43 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

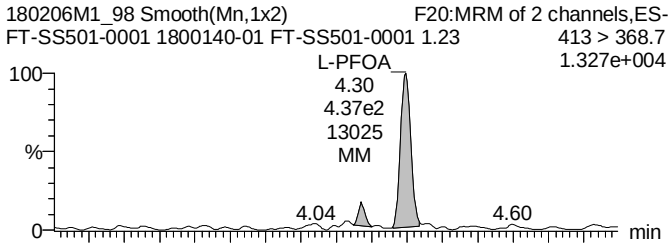
Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

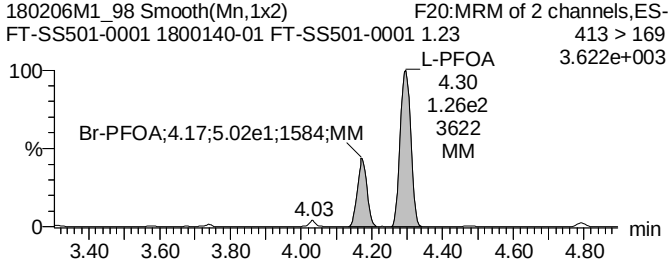
PFBS



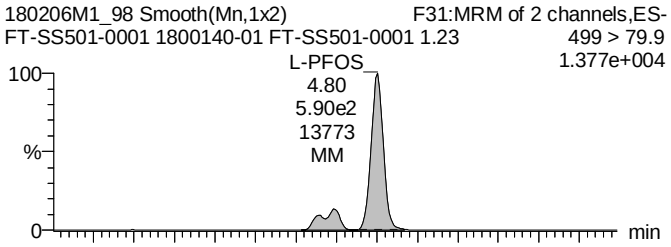


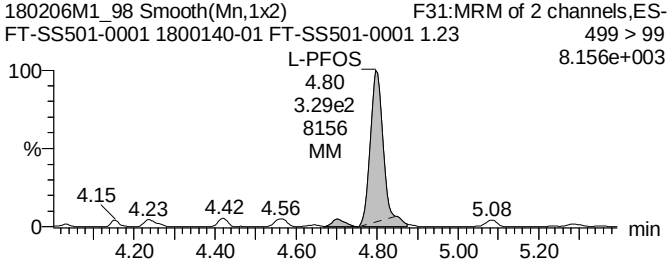
Total PFOA



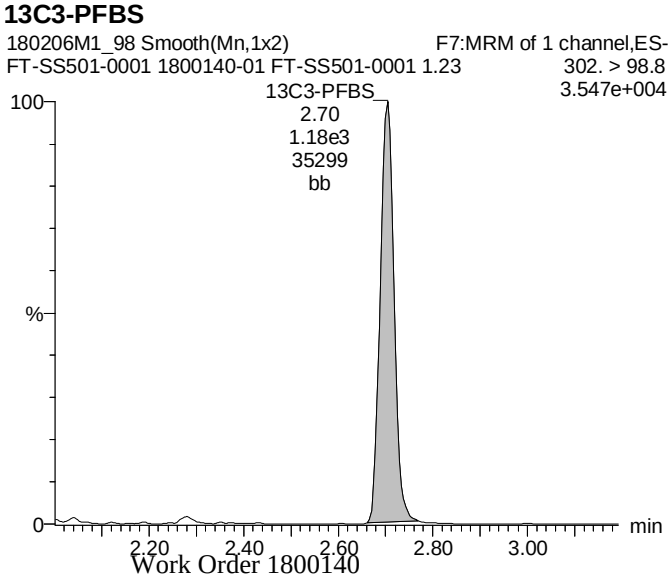


Total PFOS

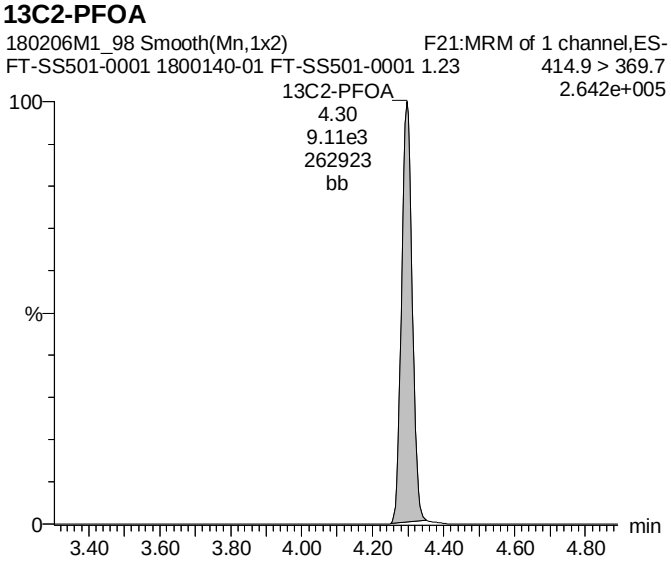




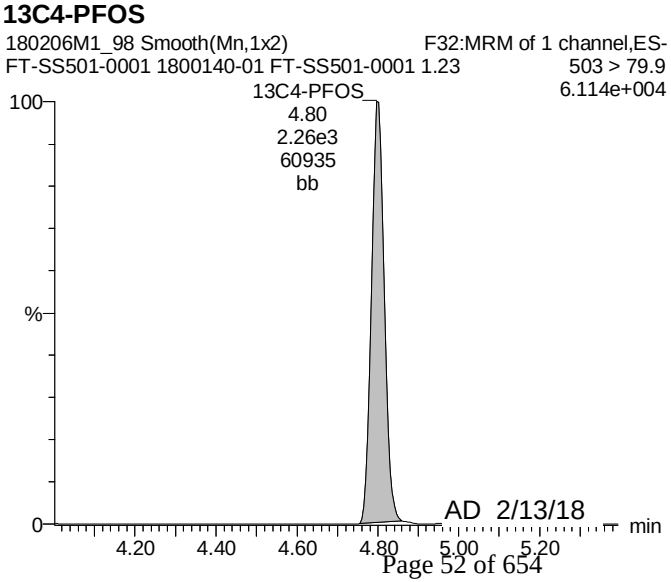
13C3-PFBS



13C2-PFOA



13C4-PFOS



Vista Analytical Laboratory

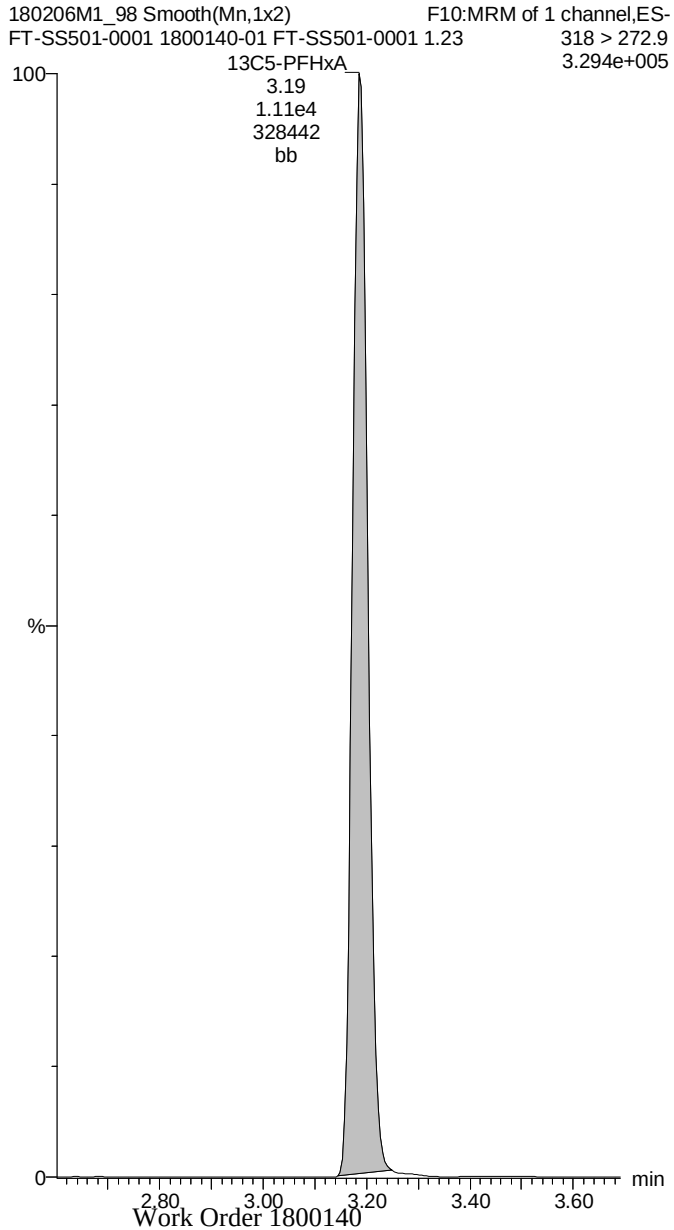
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-98.qld

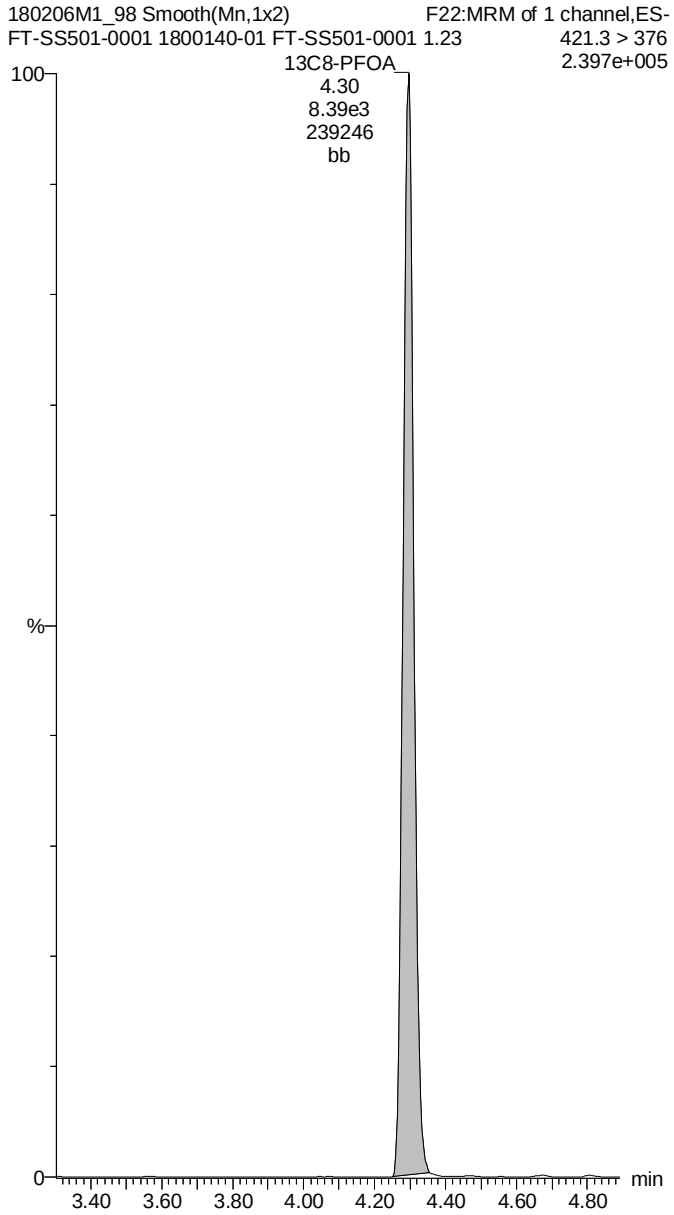
Last Altered: Tuesday, February 13, 2018 08:40:10 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:40:43 Pacific Standard Time

Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

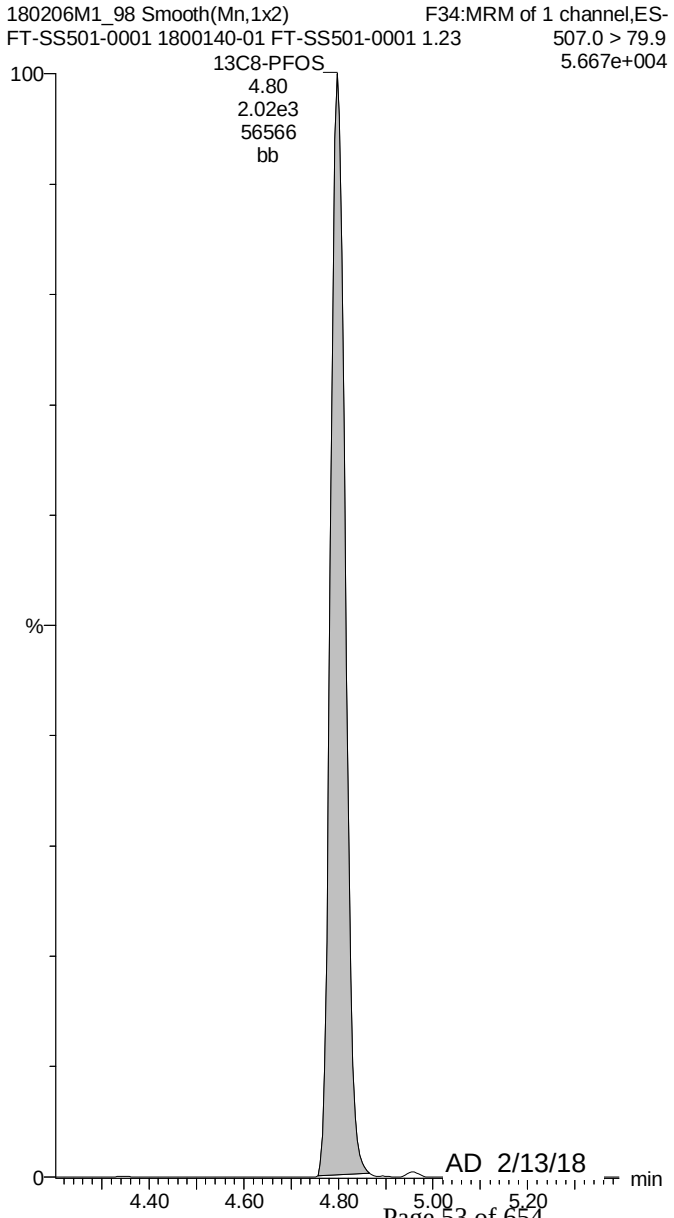
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-99.qld

Last Altered: Monday, February 12, 2018 08:51:55 Pacific Standard Time
Printed: Monday, February 12, 2018 08:53:22 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.20e3	1.0470		2.98				
2	11	L-PFOA	413 > 368.7	2.63e2	9.72e3	1.0470		4.30	4.30	0.338	0.207	
3	16	L-PFOS	499 > 79.9	7.50e1	2.09e3	1.0470		5.11	4.81	0.448	0.447	
4	36	13C3-PFBS	302. > 98.8	1.20e3	1.08e4	1.0470	0.109	2.98	2.70	1.39	12.2	102.2
5	41	13C2-PFOA	414.9 > 369.7	9.72e3	8.86e3	1.0470	1.069	4.31	4.30	13.7	12.2	102.6
6	44	13C8-PFOS	507.0 > 79.9	2.09e3	2.37e3	1.0470	1.041	5.11	4.80	11.1	10.1	84.9
7	58	13C5-PFHxA	318 > 272.9	1.08e4	1.08e4	1.0470	1.000	3.48	3.19	12.5	11.9	100.0
8	60	13C8-PFOA	421.3 > 376	8.86e3	8.86e3	1.0470	1.000	4.61	4.30	12.5	11.9	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-99.qld

Last Altered: Monday, February 12, 2018 08:51:55 Pacific Standard Time
Printed: Monday, February 12, 2018 08:53:31 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.37e3	2.37e3	1.0470	1.000	5.11	4.80	12.5	11.9	100.0
2	66	Total PFOA	413 > 368.7	2.63e2	9.72e3	1.0470		4.61		0.338	0.207	
3	67	Total PFOS	499 > 79.9	7.50e1	2.09e3	1.0470		5.11		0.448	0.447	

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

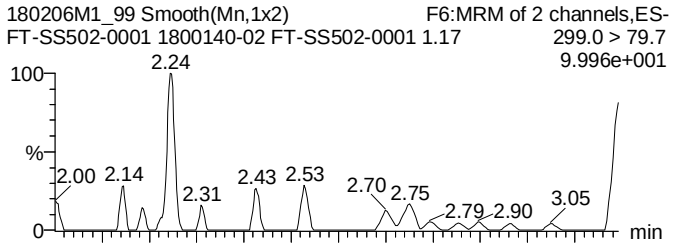
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-99.qld

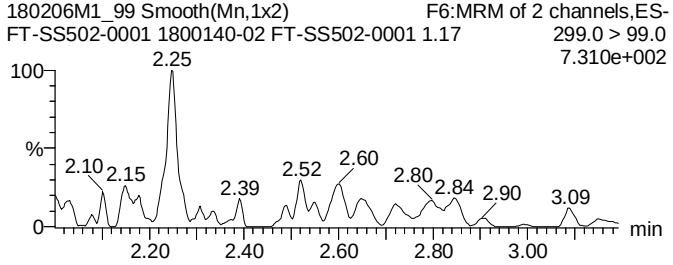
Last Altered: Monday, February 12, 2018 08:51:55 Pacific Standard Time
Printed: Monday, February 12, 2018 08:53:31 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

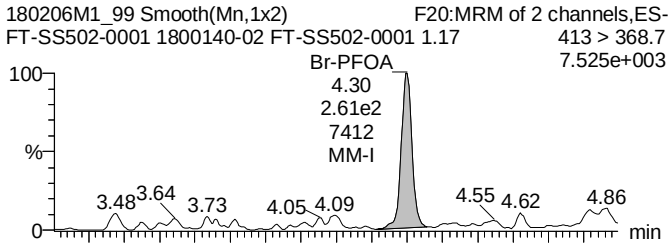
Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

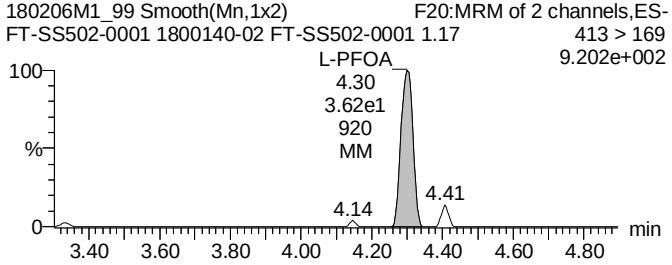
PFBS



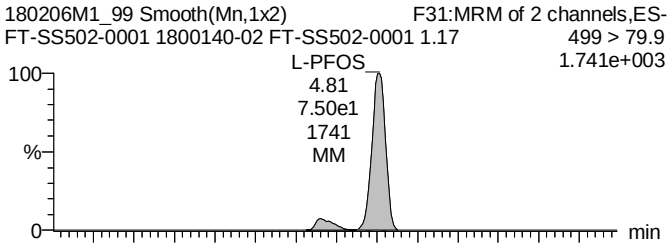


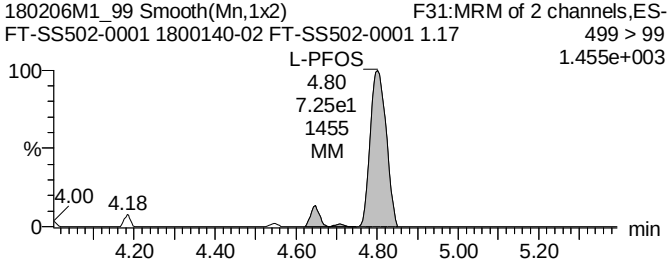
Total PFOA



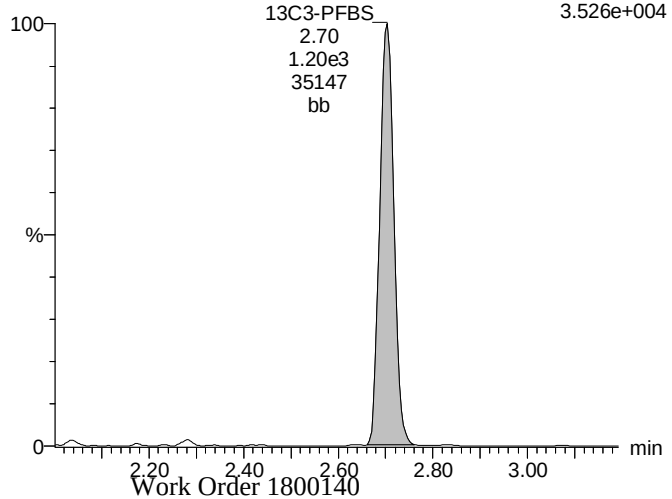


Total PFOS

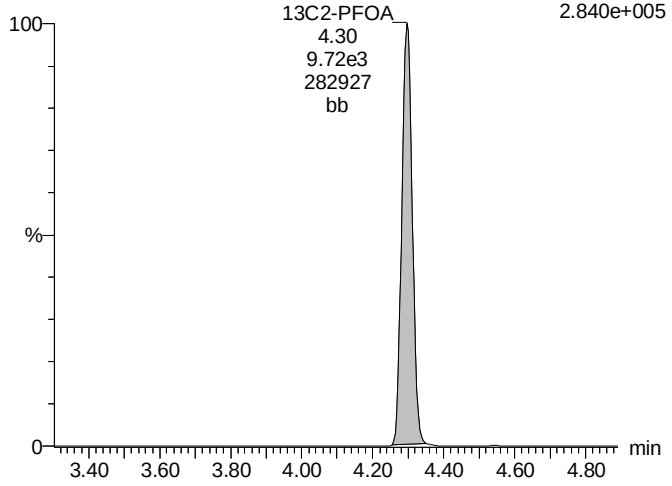




13C3-PFBS



13C2-PFOA



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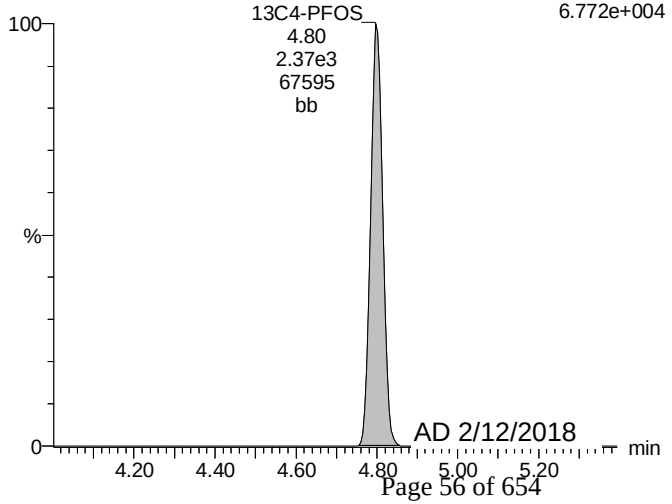


AD 2/12/2018

Vista Analytical Laboratory

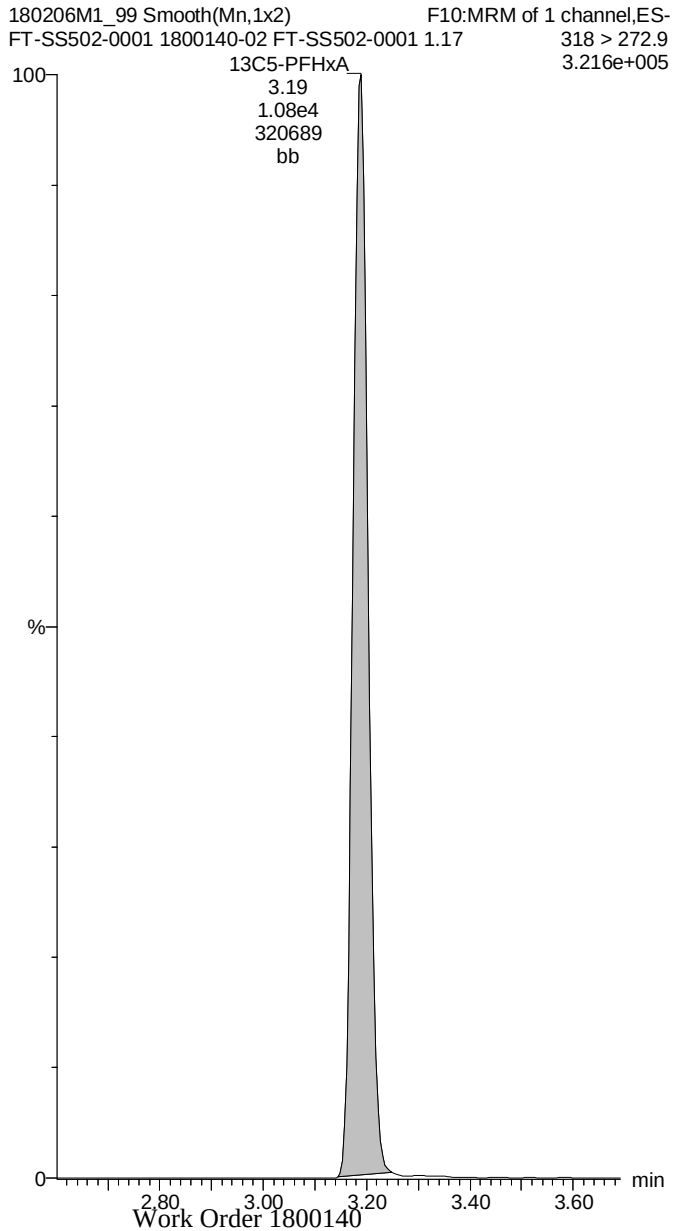
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-99.qld

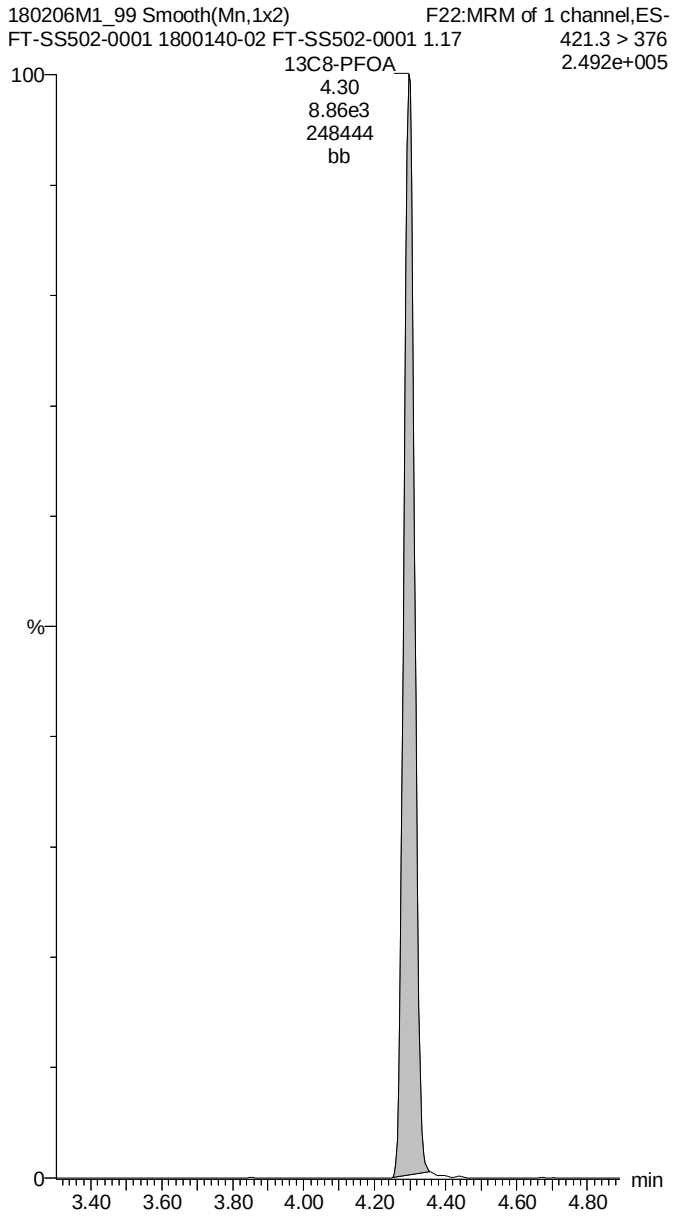
Last Altered: Monday, February 12, 2018 08:51:55 Pacific Standard Time
Printed: Monday, February 12, 2018 08:53:31 Pacific Standard Time

Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

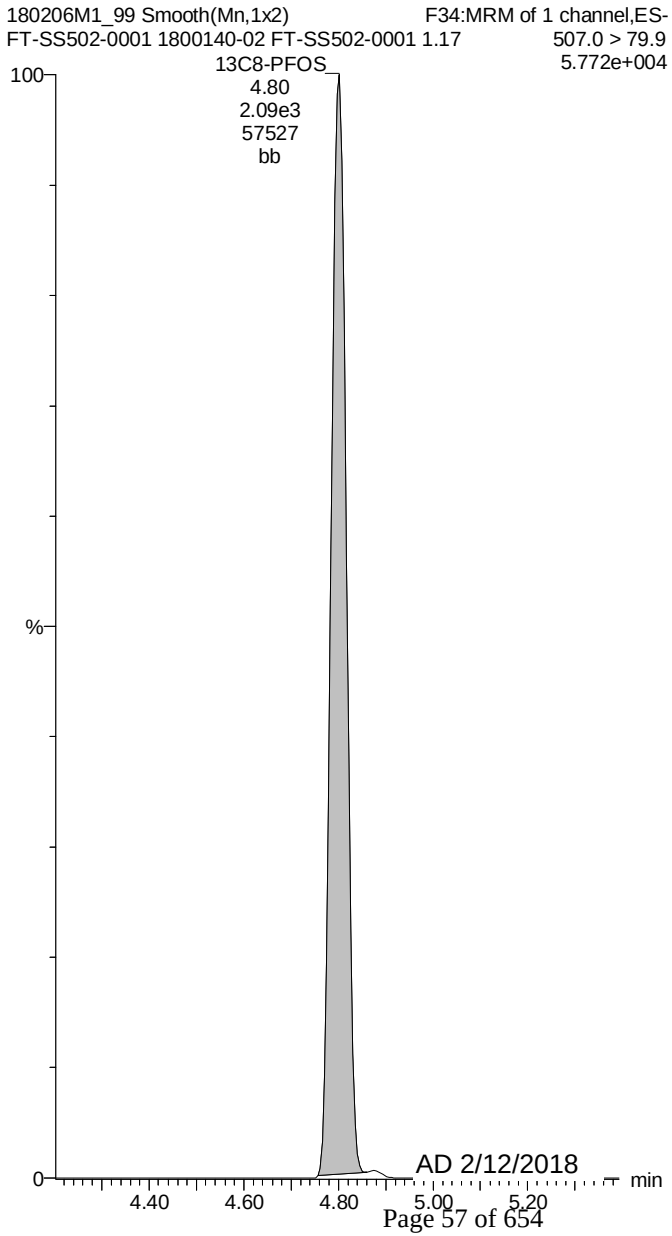
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-100.qld

Last Altered: Tuesday, February 13, 2018 08:52:44 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:53:32 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.28e3	1.0901		2.98				
2	11	L-PFOA	413 > 368.7	2.39e3	9.53e3	1.0901		4.30	4.30	3.14	2.92	
3	16	L-PFOS	499 > 79.9	1.09e3	2.33e3	1.0901		5.11	4.80	5.84	4.81	
4	36	13C3-PFBS	302. > 98.8	1.28e3	1.20e4	1.0901	0.109	2.98	2.70	1.32	11.1	97.1
5	41	13C2-PFOA	414.9 > 369.7	9.53e3	9.56e3	1.0901	1.069	4.30	4.30	12.5	10.7	93.2
6	44	13C8-PFOS	507.0 > 79.9	2.33e3	2.88e3	1.0901	1.041	5.11	4.80	10.1	8.90	77.6
7	58	13C5-PFHxA	318 > 272.9	1.20e4	1.20e4	1.0901	1.000	3.48	3.19	12.5	11.5	100.0
8	60	13C8-PFOA	421.3 > 376	9.56e3	9.56e3	1.0901	1.000	4.61	4.30	12.5	11.5	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-100.qld

Last Altered: Tuesday, February 13, 2018 08:52:44 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:53:55 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.88e3	2.88e3	1.0901	1.000	5.11	4.80	12.5	11.5	100.0
2	66	Total PFOA	413 > 368.7	2.88e3	9.53e3	1.0901		4.30		3.78	3.42	
3	67	Total PFOS	499 > 79.9	1.09e3	2.33e3	1.0901		5.11		5.84	4.81	

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

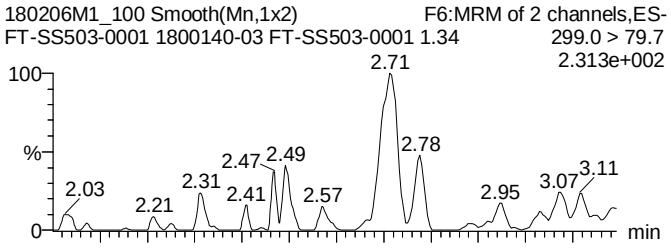
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-100.qld

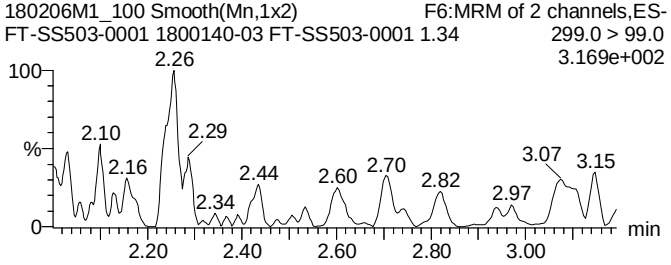
Last Altered: Tuesday, February 13, 2018 08:52:44 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:53:55 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

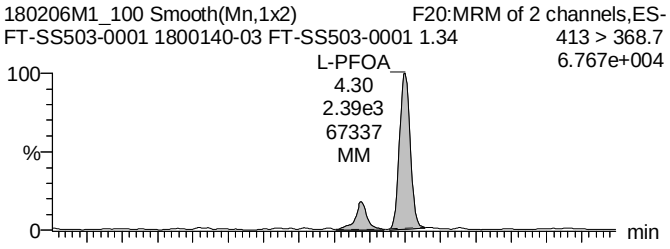
Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

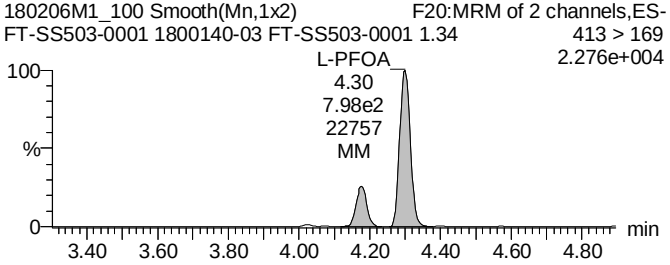
PFBS



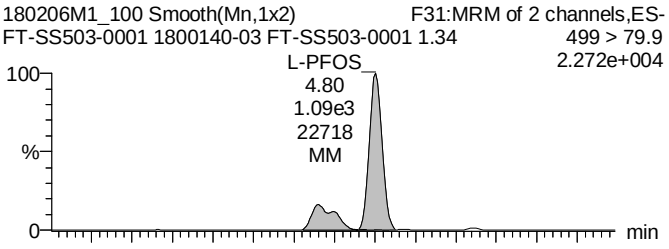


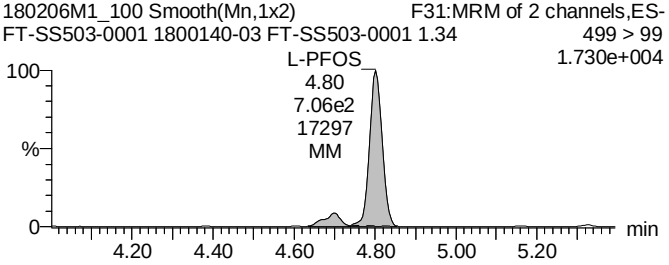
Total PFOA



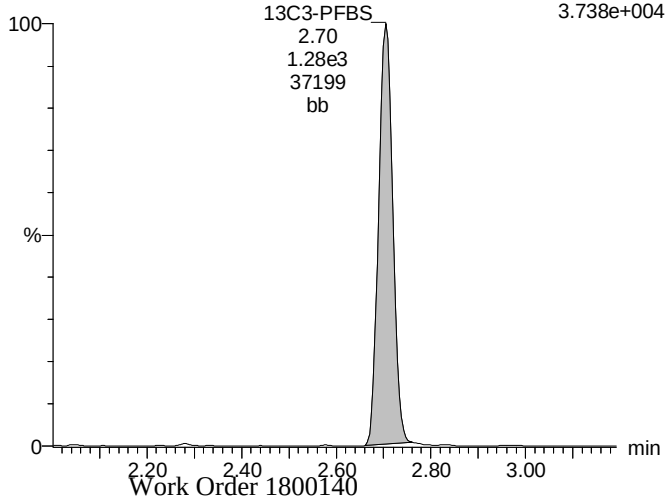


Total PFOS





13C3-PFBS



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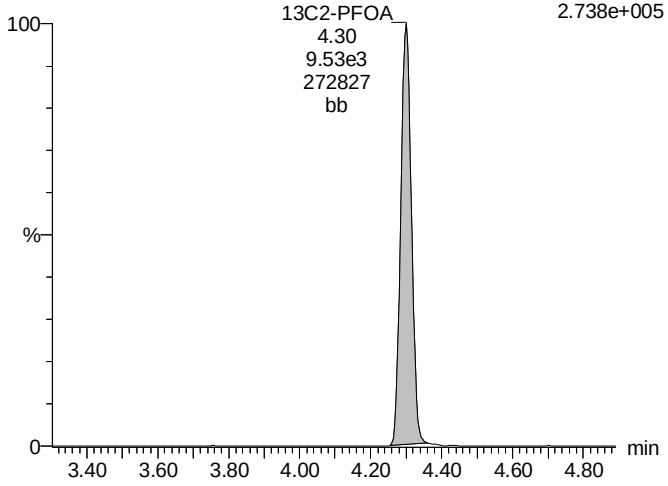
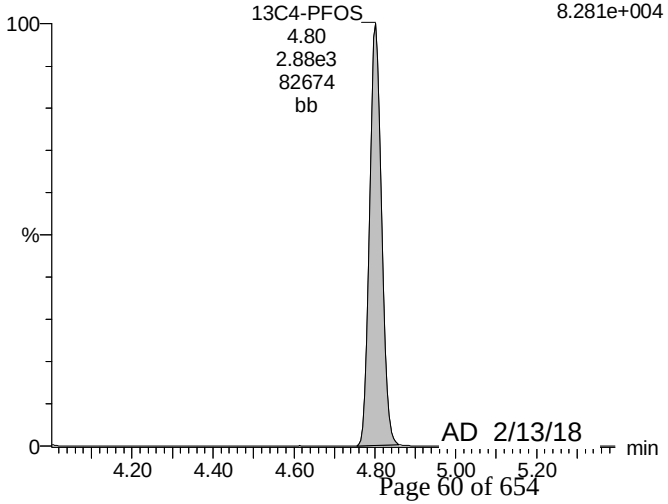


13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

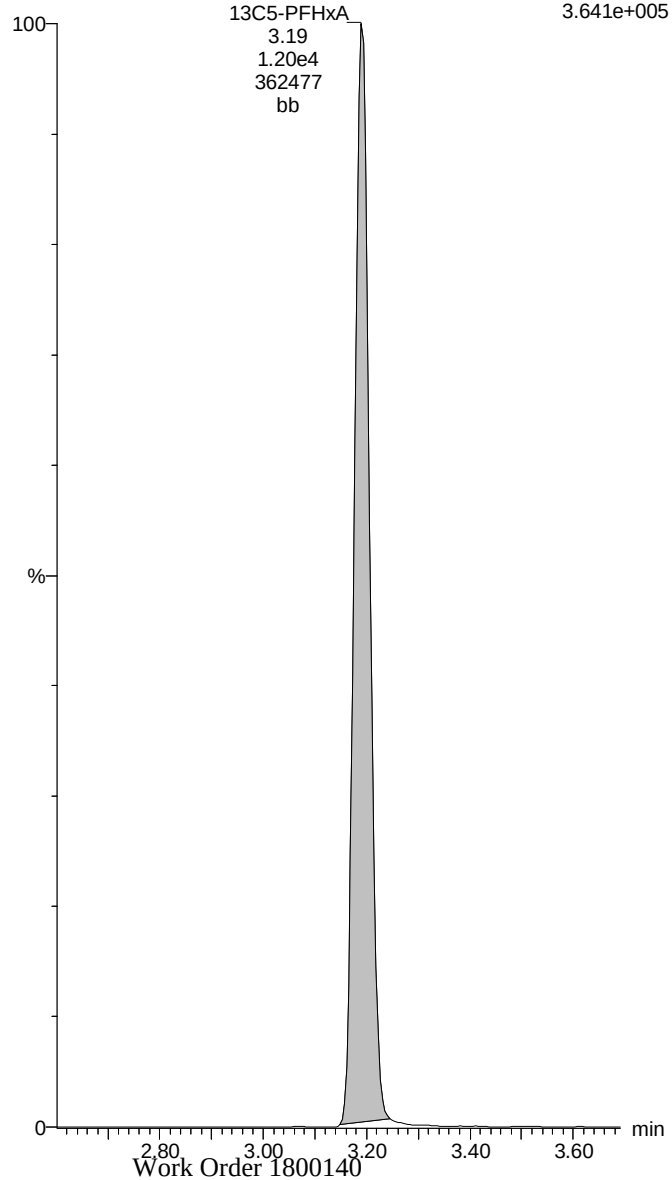
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-100.qld

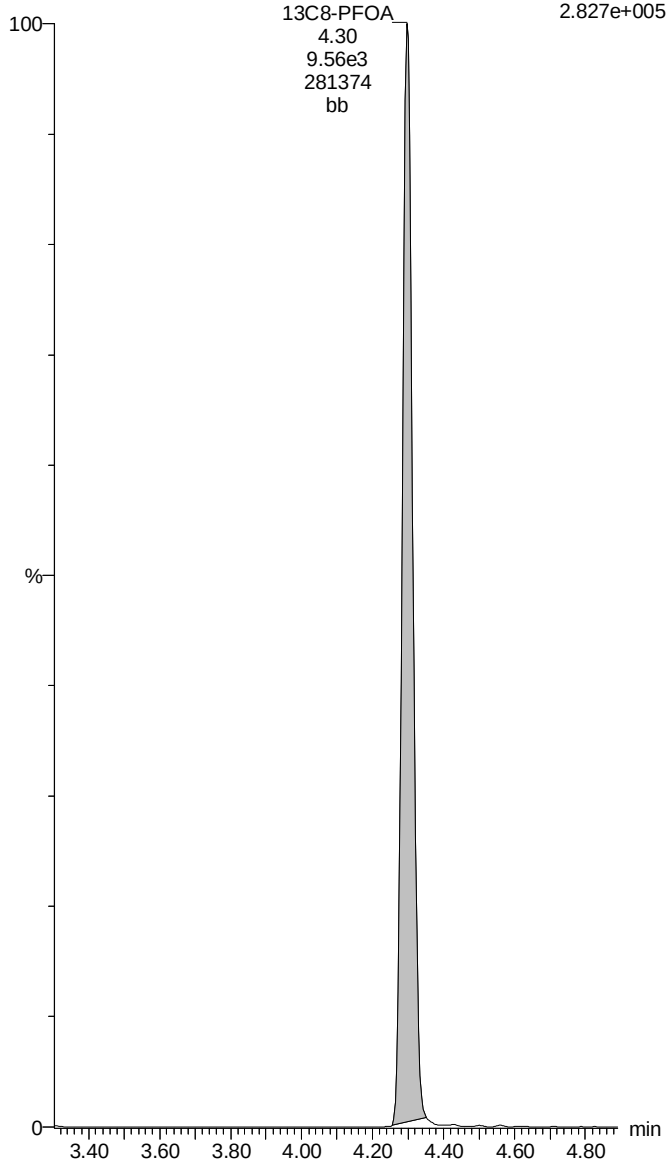
Last Altered: Tuesday, February 13, 2018 08:52:44 Pacific Standard Time
Printed: Tuesday, February 13, 2018 08:53:55 Pacific Standard Time

Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

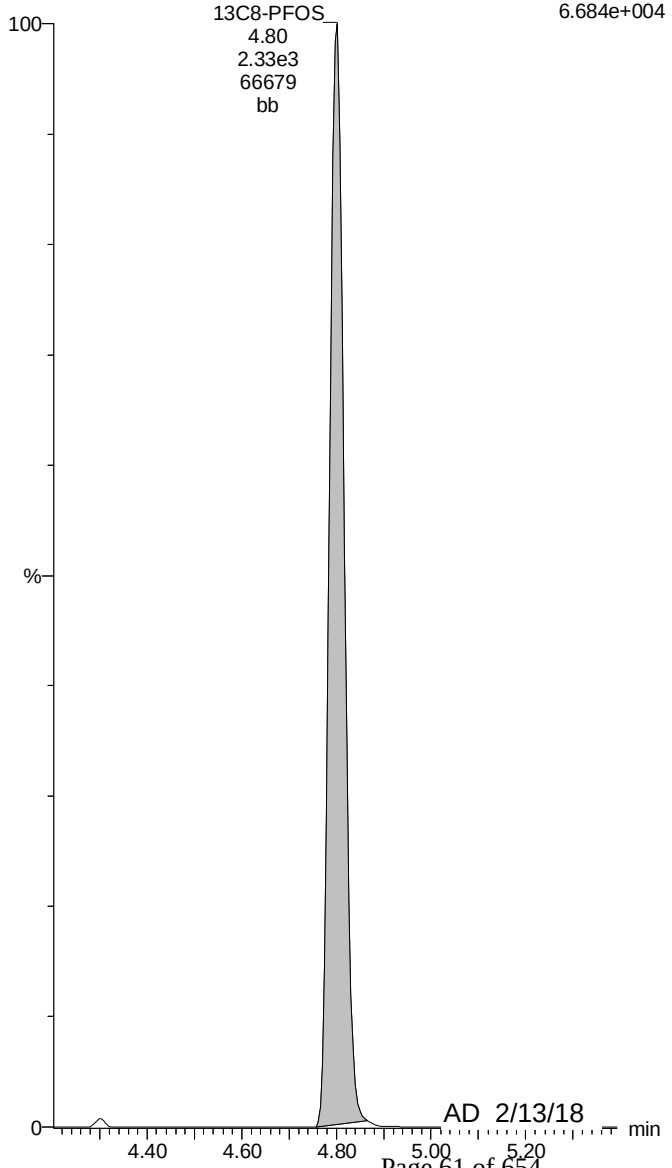
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-101.qld

Last Altered: Tuesday, February 13, 2018 09:00:19 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:01:35 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.19e3	1.1929		2.98				
2	11	L-PFOA	413 > 368.7	5.31e2	9.59e3	1.1929		4.30	4.30	0.693	0.497	
3	16	L-PFOS	499 > 79.9		2.36e3	1.1929		5.11				
4	36	13C3-PFBS	302. > 98.8	1.19e3	1.12e4	1.1929	0.109	2.98	2.70	1.32	10.1	96.8
5	41	13C2-PFOA	414.9 > 369.7	9.59e3	8.39e3	1.1929	1.069	4.31	4.30	14.3	11.2	106.9
6	44	13C8-PFOS	507.0 > 79.9	2.36e3	2.28e3	1.1929	1.041	5.11	4.80	12.9	10.4	99.4
7	58	13C5-PFHxA	318 > 272.9	1.12e4	1.12e4	1.1929	1.000	3.48	3.19	12.5	10.5	100.0
8	60	13C8-PFOA	421.3 > 376	8.39e3	8.39e3	1.1929	1.000	4.61	4.30	12.5	10.5	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-101.qld

Last Altered: Tuesday, February 13, 2018 09:00:19 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:01:51 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.28e3	2.28e3	1.1929	1.000	5.11	4.80	12.5	10.5	100.0
2	66	Total PFOA	413 > 368.7	5.99e2	9.59e3	1.1929		4.31		0.693	0.497	
3	67	Total PFOS	499 > 79.9	0.00e0	2.36e3	1.1929		5.11		0.000		

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-101.qld

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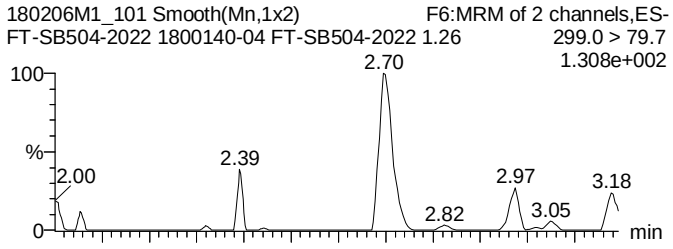
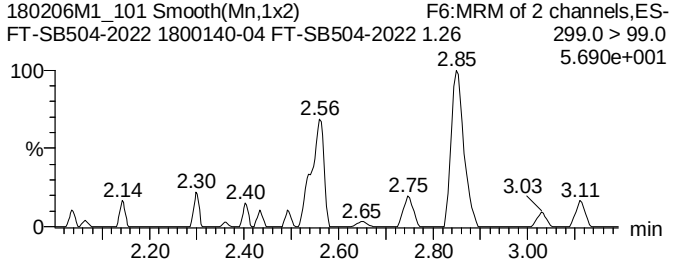
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

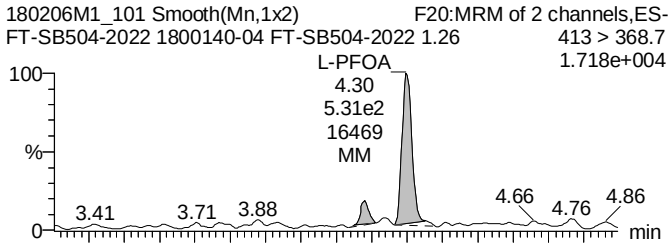
Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

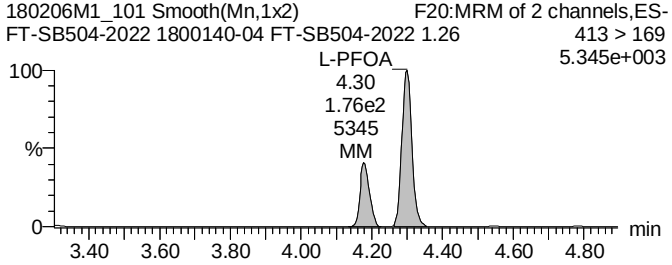
PFBS



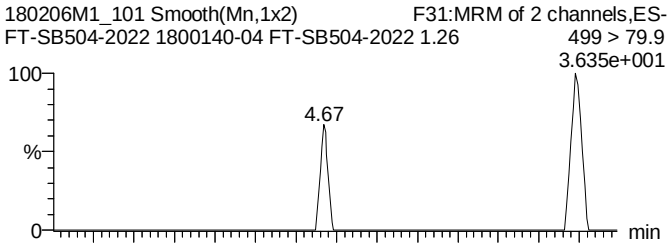


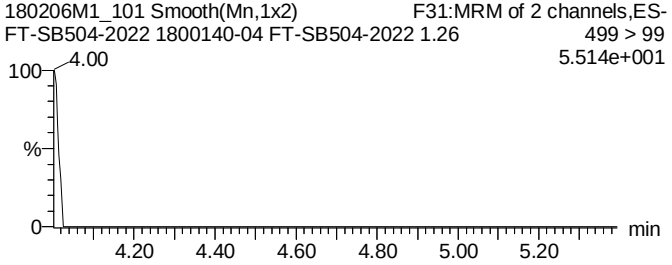
Total PFOA



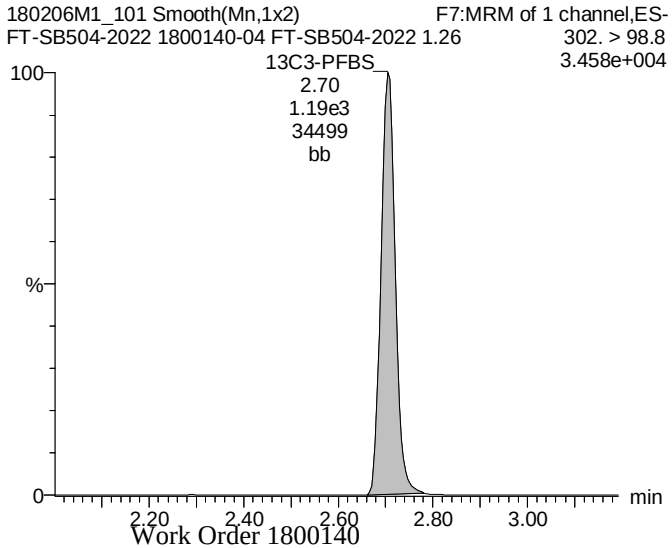


Total PFOS

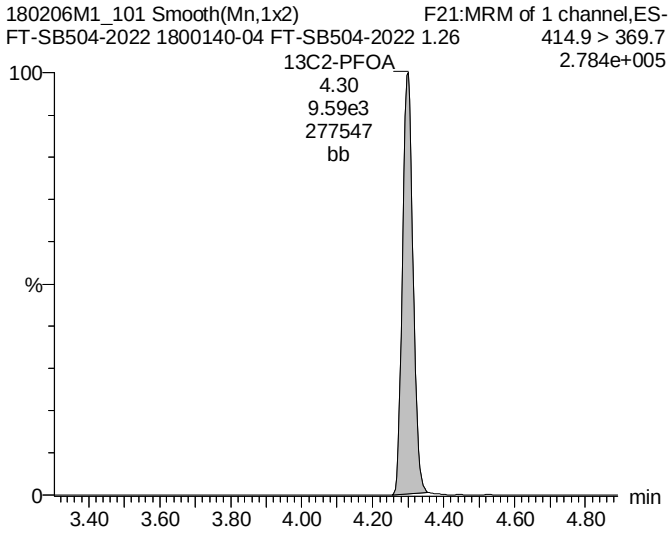




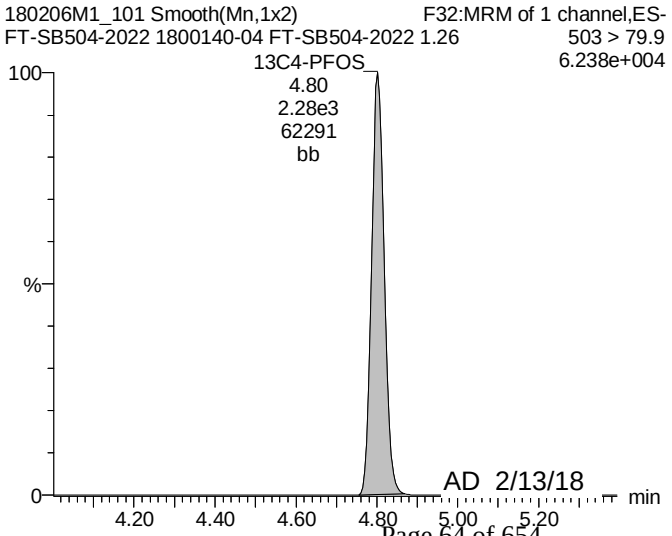
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

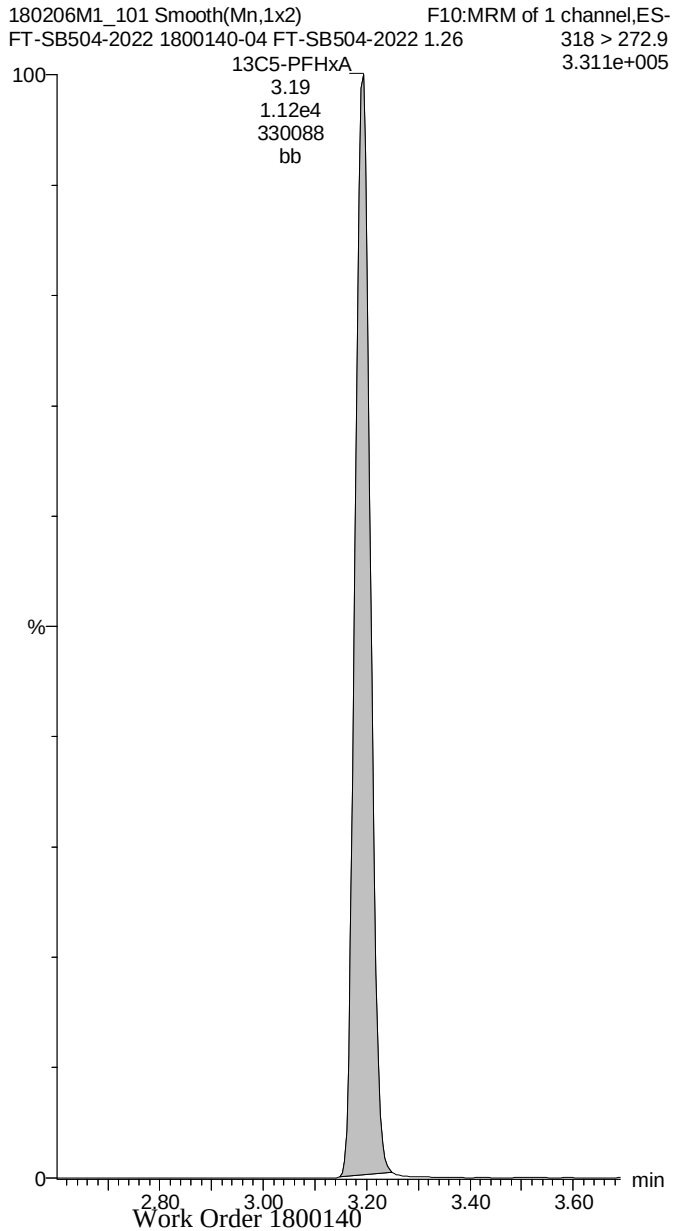
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-101.qld

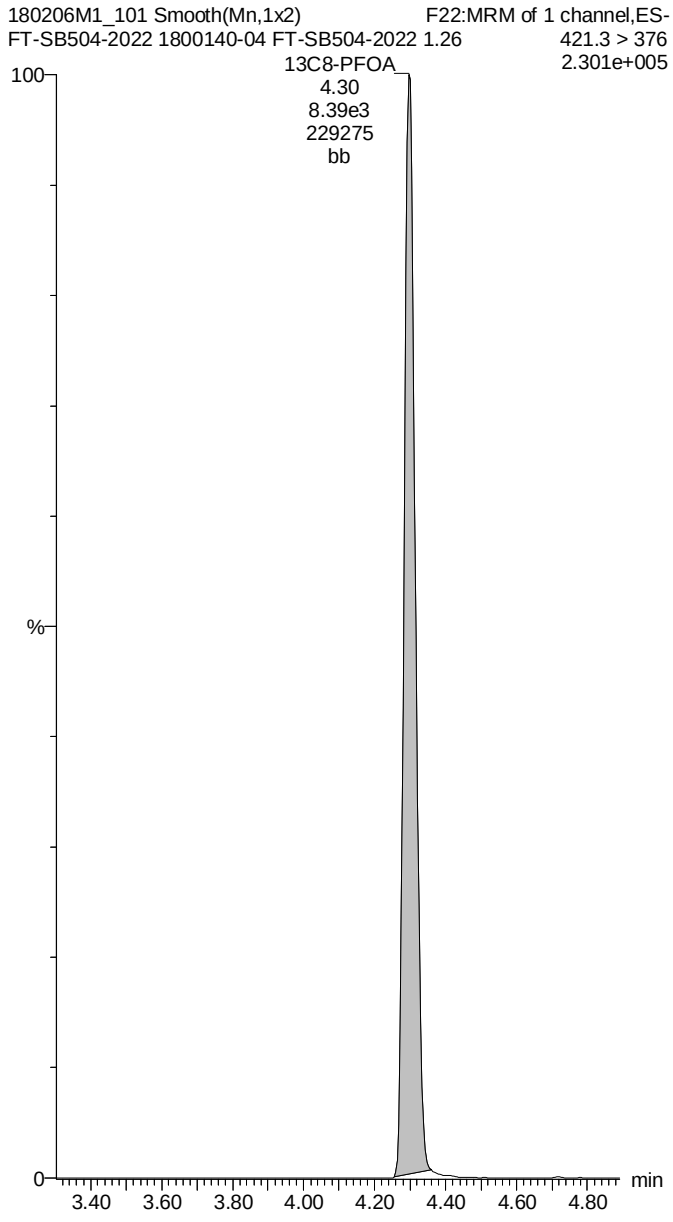
Last Altered: Tuesday, February 13, 2018 09:00:19 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:01:51 Pacific Standard Time

Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

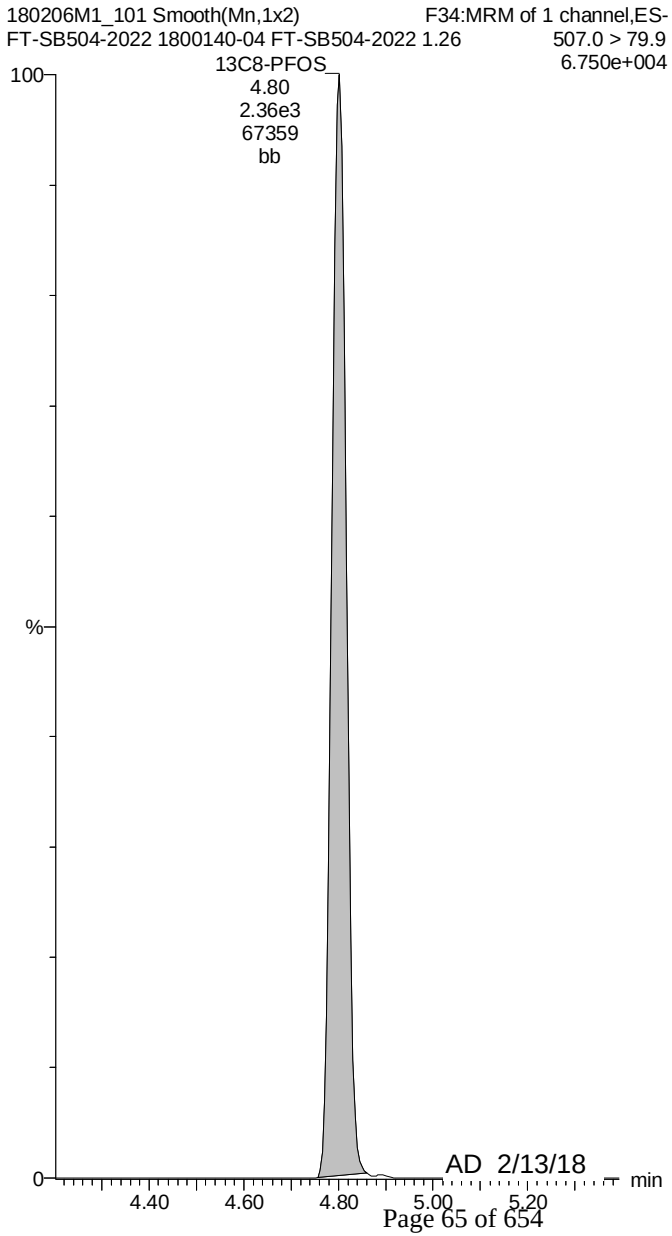
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-102.qld

Last Altered: Tuesday, February 13, 2018 09:07:21 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:07:57 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.47e3	1.1432		2.98				
2	11	L-PFOA	413 > 368.7	4.36e2	9.87e3	1.1432		4.30	4.30	0.553	0.389	
3	16	L-PFOS	499 > 79.9	8.86e1	1.40e3	1.1432		4.80	4.66	0.788	0.673	
4	36	13C3-PFBS	302. > 98.8	1.47e3	1.21e4	1.1432	0.109	2.98	2.71	1.52	12.2	111.4
5	41	13C2-PFOA	414.9 > 369.7	9.87e3	1.09e4	1.1432	1.069	4.31	4.30	11.3	9.26	84.7
6	44	13C8-PFOS	507.0 > 79.9	1.40e3	1.46e3	1.1432	1.041	4.81	4.80	12.0	10.1	92.2
7	58	13C5-PFHxA	318 > 272.9	1.21e4	1.21e4	1.1432	1.000	3.48	3.19	12.5	10.9	100.0
8	60	13C8-PFOA	421.3 > 376	1.09e4	1.09e4	1.1432	1.000	4.61	4.30	12.5	10.9	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-102.qld

Last Altered: Tuesday, February 13, 2018 09:07:21 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:08:09 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.46e3	1.46e3	1.1432	1.000	5.11	4.80	12.5	10.9	100.0
2	66	Total PFOA	413 > 368.7	5.04e2	9.87e3	1.1432		4.31		0.553	0.389	
3	67	Total PFOS	499 > 79.9	8.86e1	1.40e3	1.1432		4.80		0.788	0.673	

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

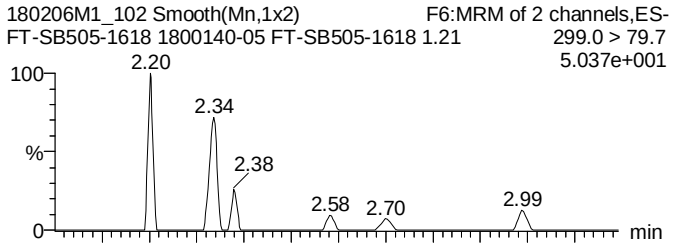
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-102.qld

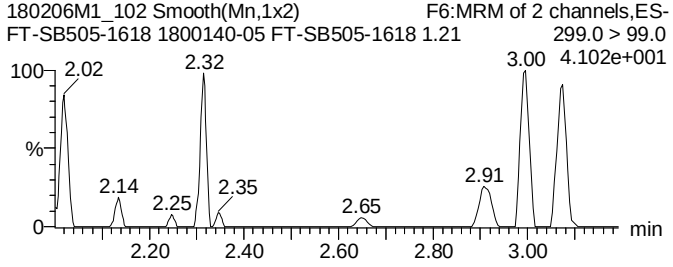
Last Altered: Tuesday, February 13, 2018 09:07:21 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:08:09 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

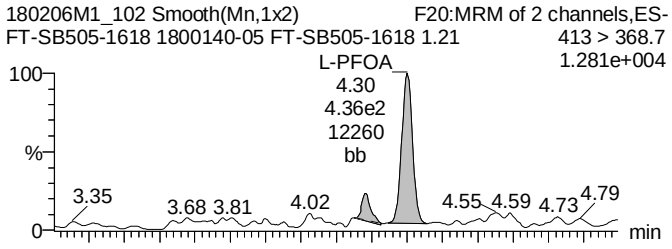
Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

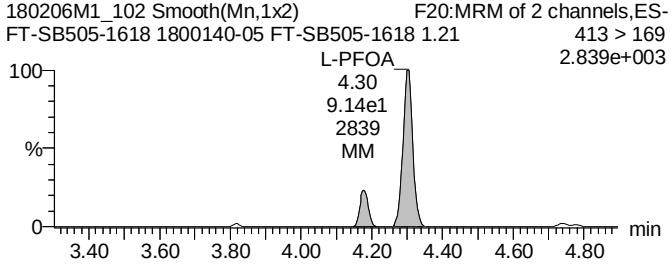
PFBS



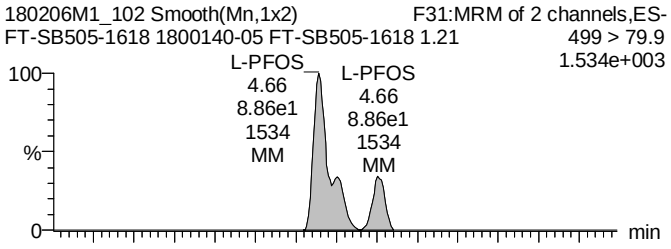


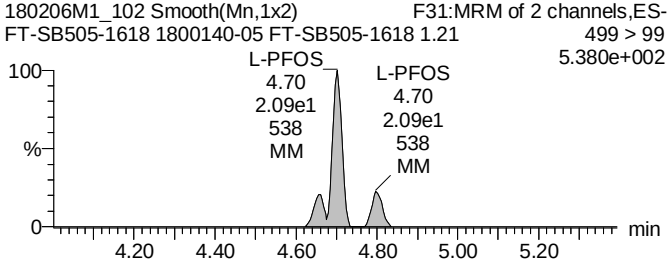
Total PFOA



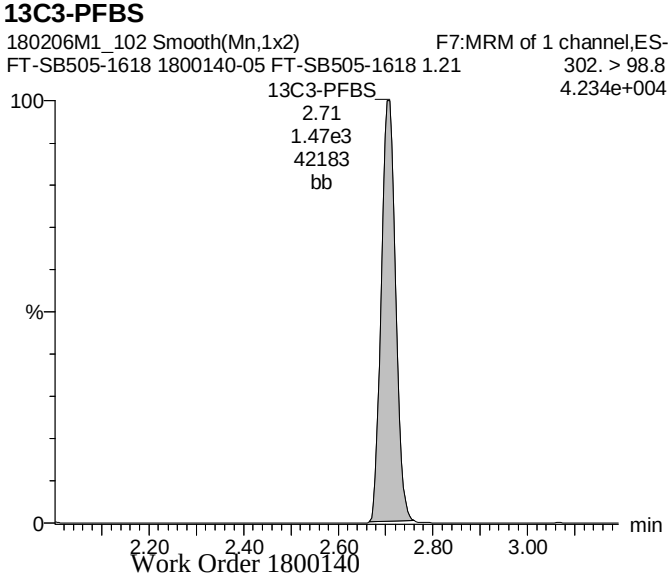


Total PFOS

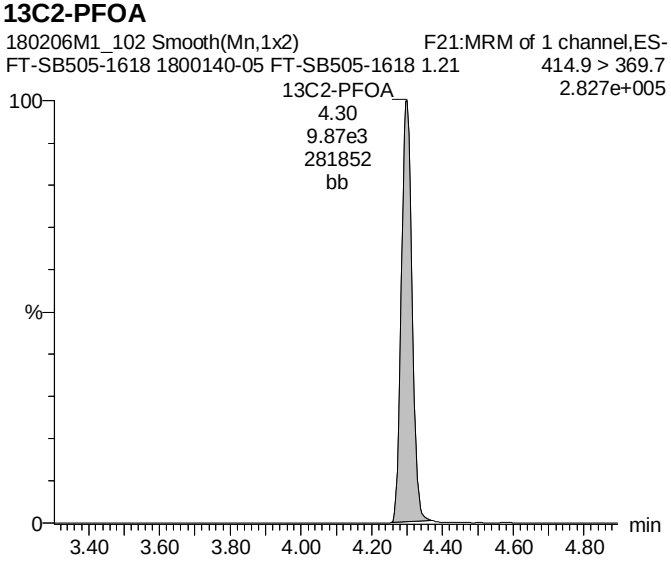




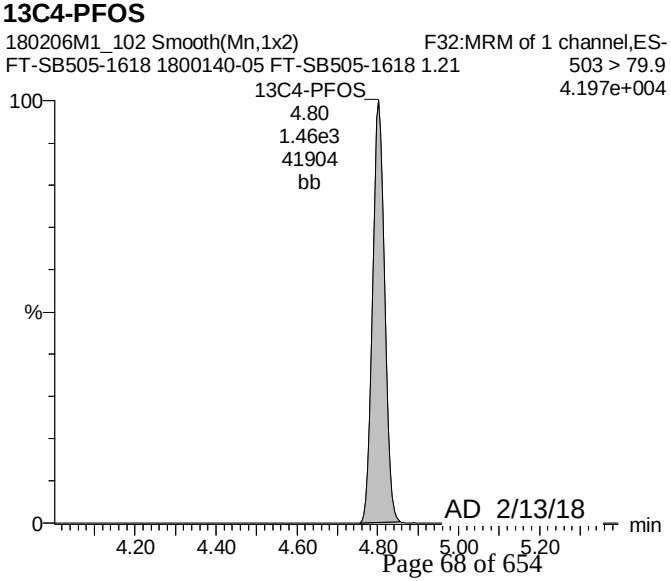
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

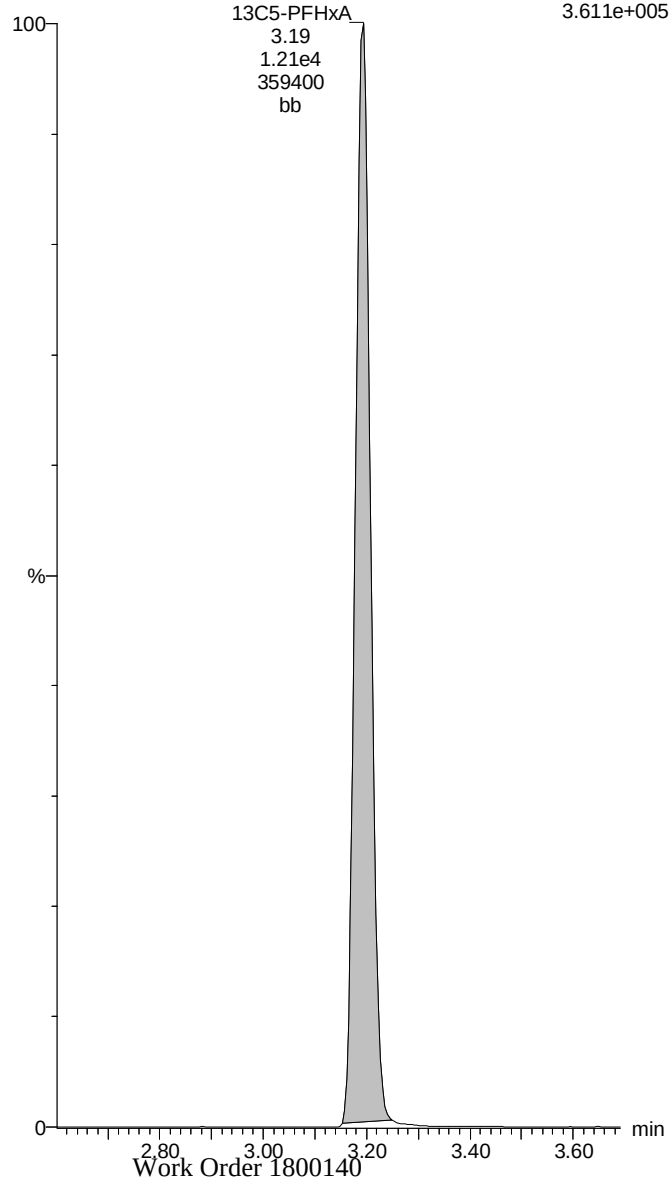
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-102.qld

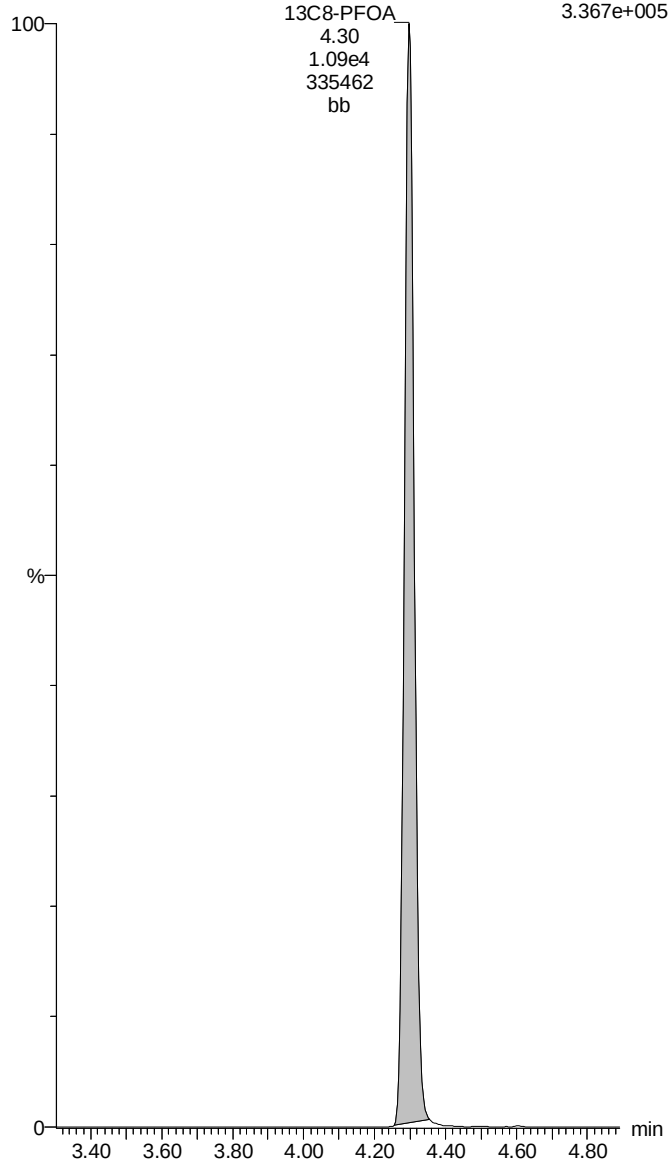
Last Altered: Tuesday, February 13, 2018 09:07:21 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:08:09 Pacific Standard Time

Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

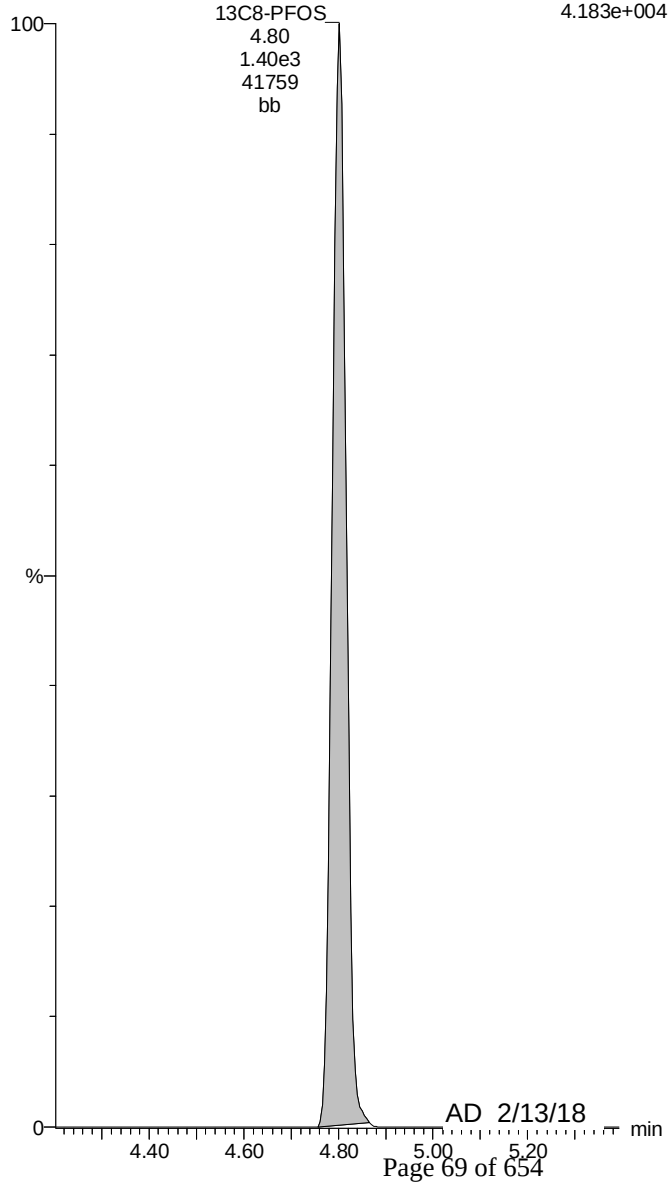
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-96.qld

Last Altered: Tuesday, February 13, 2018 10:34:18 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:38:56 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	1.81e3	1.30e3	1.2000		2.98	2.70	17.5	7.70	
2	11	L-PFOA	413 > 368.7	9.19e3	9.70e3	1.2000		4.30	4.30	11.8	10.4	
3	16	L-PFOS	499 > 79.9	1.36e3	1.46e3	1.2000		5.11	4.80	11.7	8.69	
4	36	13C3-PFBS	302. > 98.8	1.30e3	1.14e4	1.2000	0.109	2.98	2.70	1.42	10.8	104.2
5	41	13C2-PFOA	414.9 > 369.7	9.70e3	9.54e3	1.2000	1.069	4.30	4.30	12.7	9.91	95.1
6	44	13C8-PFOS	507.0 > 79.9	1.46e3	1.55e3	1.2000	1.041	5.11	4.80	11.8	9.42	90.4
7	58	13C5-PFHxA	318 > 272.9	1.14e4	1.14e4	1.2000	1.000	3.48	3.19	12.5	10.4	100.0
8	60	13C8-PFOA	421.3 > 376	9.54e3	9.54e3	1.2000	1.000	4.30	4.30	12.5	10.4	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-96.qld

Last Altered: Tuesday, February 13, 2018 10:34:18 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:39:05 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.55e3	1.55e3	1.2000	1.000	5.11	4.80	12.5	10.4	100.0
2	66	Total PFOA	413 > 368.7	9.19e3	9.70e3	1.2000		4.30		11.8	10.4	
3	67	Total PFOS	499 > 79.9	1.36e3	1.46e3	1.2000		5.11		11.7	8.69	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

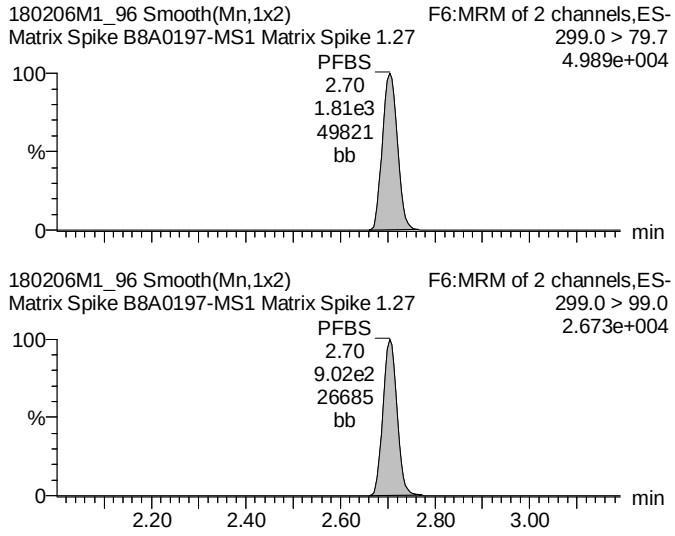
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-96.qld

Last Altered: Tuesday, February 13, 2018 10:34:18 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:39:05 Pacific Standard Time

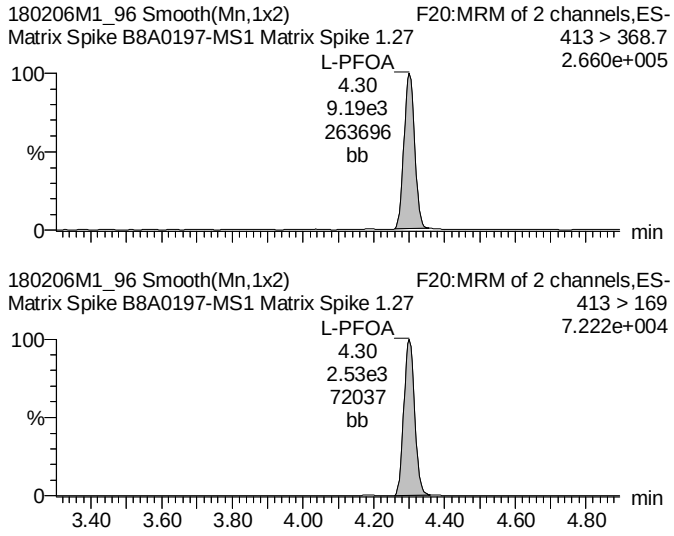
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

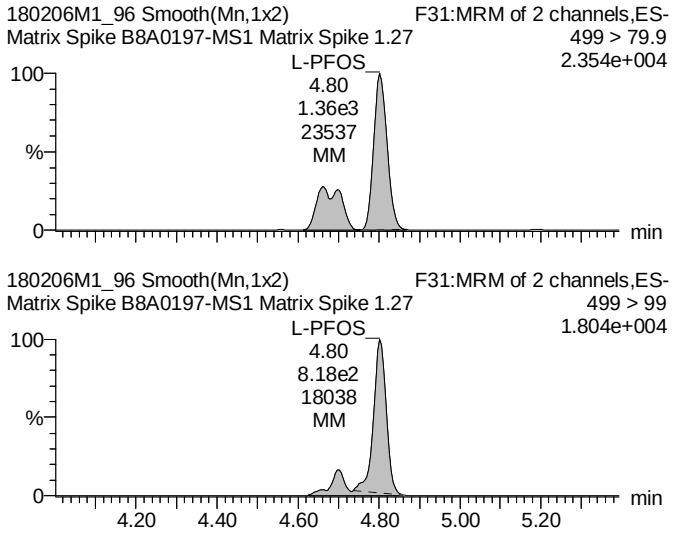
PFBS



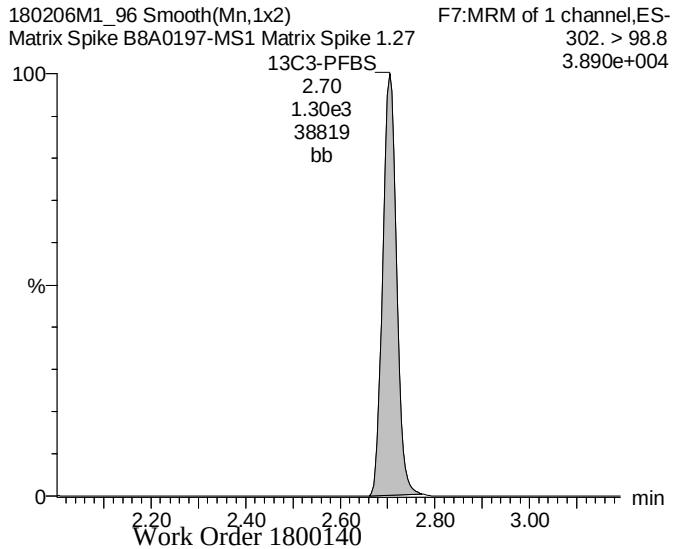
Total PFOA



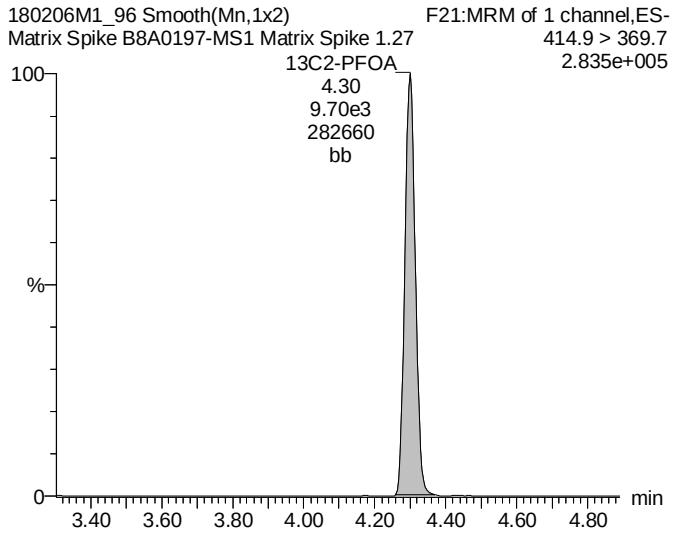
Total PFOS



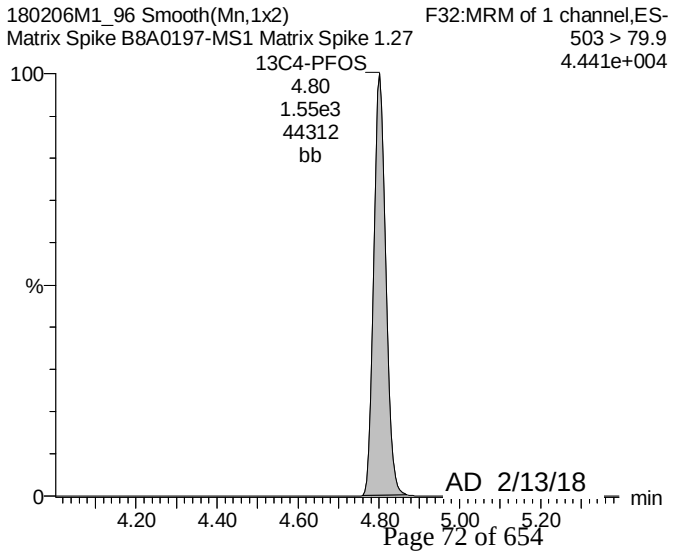
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

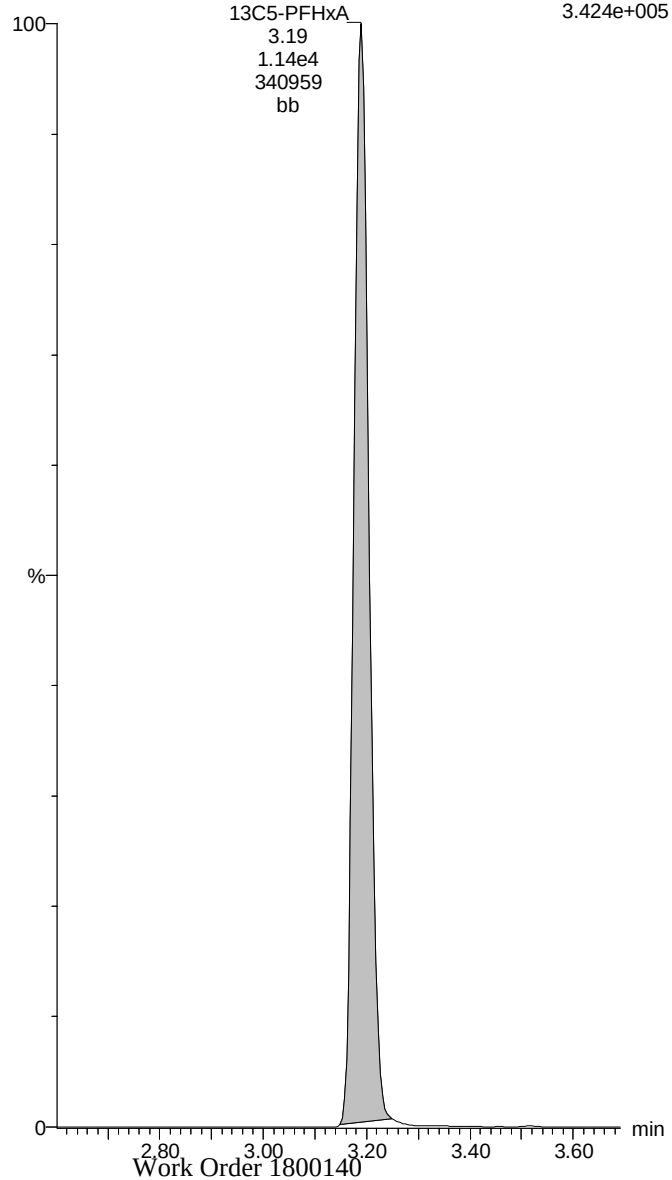
Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-96.qld

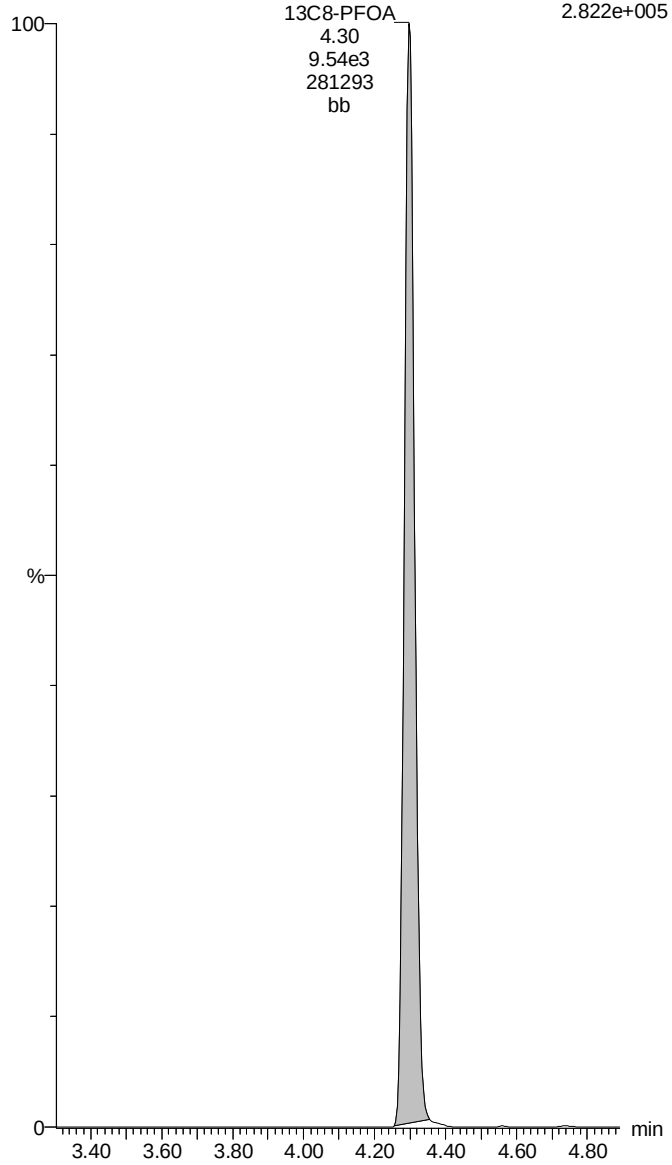
Last Altered: Tuesday, February 13, 2018 10:34:18 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:39:05 Pacific Standard Time

Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

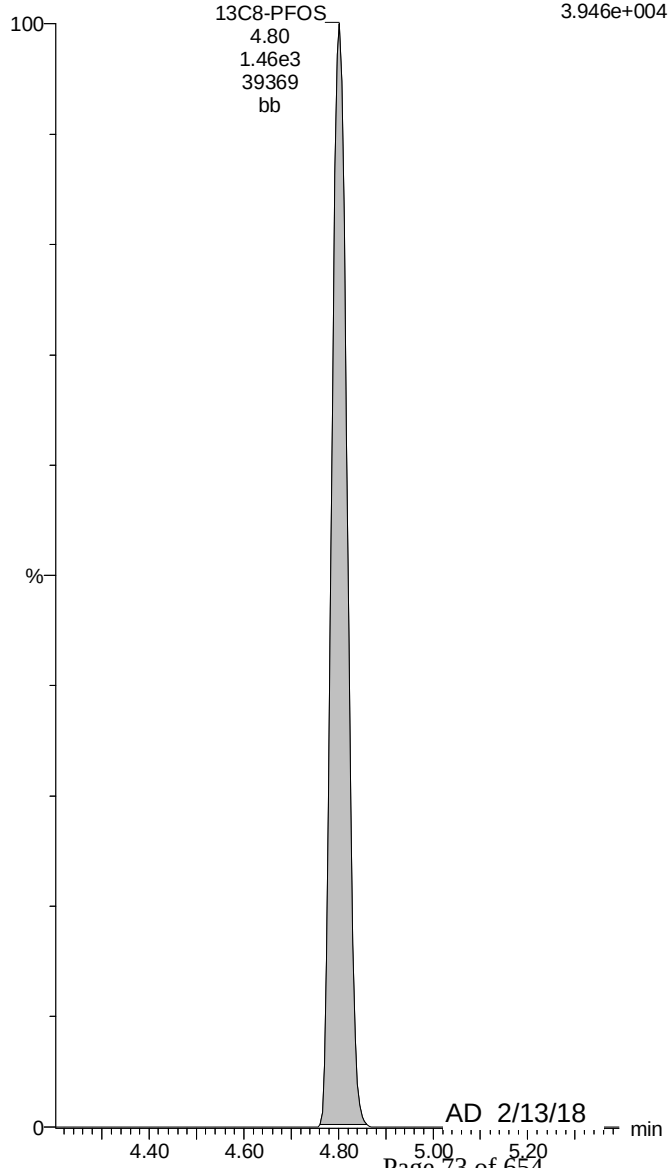
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-97.qld

Last Altered: Tuesday, February 13, 2018 10:42:30 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:43:31 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	2.00e3	1.21e3	1.1430		2.98	2.71	20.6	9.52	
2	11	L-PFOA	413 > 368.7	8.24e3	9.18e3	1.1430		4.30	4.30	11.2	10.3	
3	16	L-PFOS	499 > 79.9	1.54e3	1.77e3	1.1430		5.11	4.81	10.9	8.54	
4	36	13C3-PFBS	302. > 98.8	1.21e3	1.04e4	1.1430	0.109	2.98	2.71	1.46	11.7	106.6
5	41	13C2-PFOA	414.9 > 369.7	9.18e3	9.79e3	1.1430	1.069	4.30	4.30	11.7	9.59	87.7
6	44	13C8-PFOS	507.0 > 79.9	1.77e3	1.81e3	1.1430	1.041	5.11	4.80	12.2	10.3	93.8
7	58	13C5-PFHxA	318 > 272.9	1.04e4	1.04e4	1.1430	1.000	3.48	3.19	12.5	10.9	100.0
8	60	13C8-PFOA	421.3 > 376	9.79e3	9.79e3	1.1430	1.000	4.30	4.30	12.5	10.9	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-97.qld

Last Altered: Tuesday, February 13, 2018 10:42:30 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:43:38 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.81e3	1.81e3	1.1430	1.000	5.11	4.80	12.5	10.9	100.0
2	66	Total PFOA	413 > 368.7	8.24e3	9.18e3	1.1430		4.30		11.2	10.3	
3	67	Total PFOS	499 > 79.9	1.54e3	1.77e3	1.1430		5.11		10.9	8.54	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/14/2018

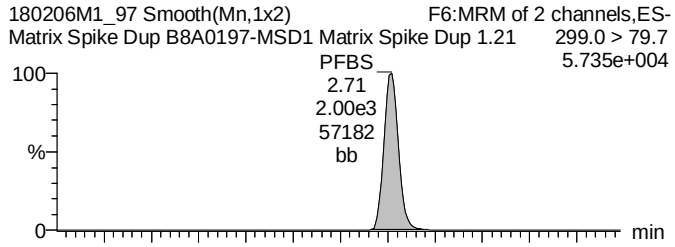
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-97.qld

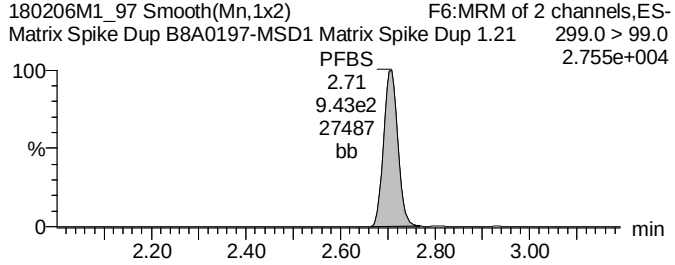
Last Altered: Tuesday, February 13, 2018 10:42:30 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:43:38 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

PFBS





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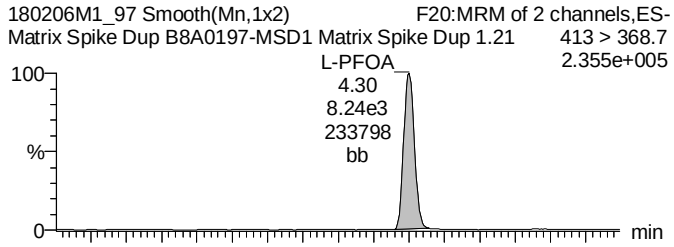
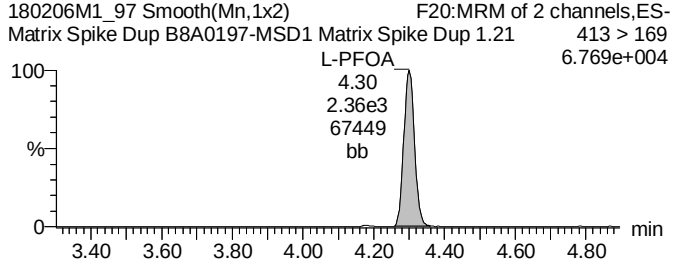
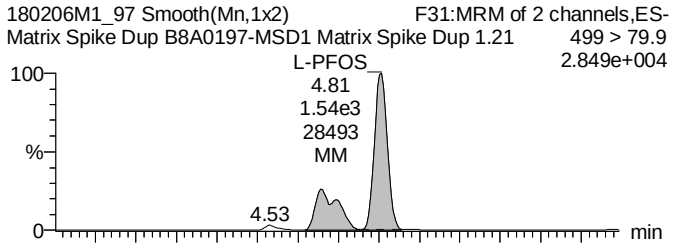
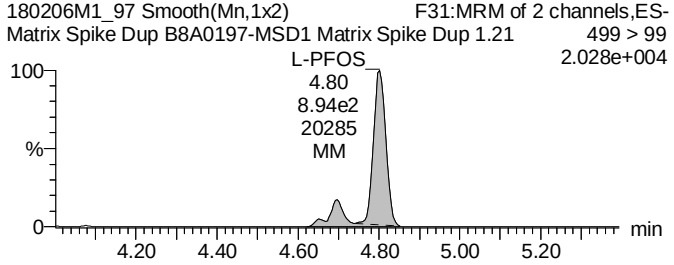


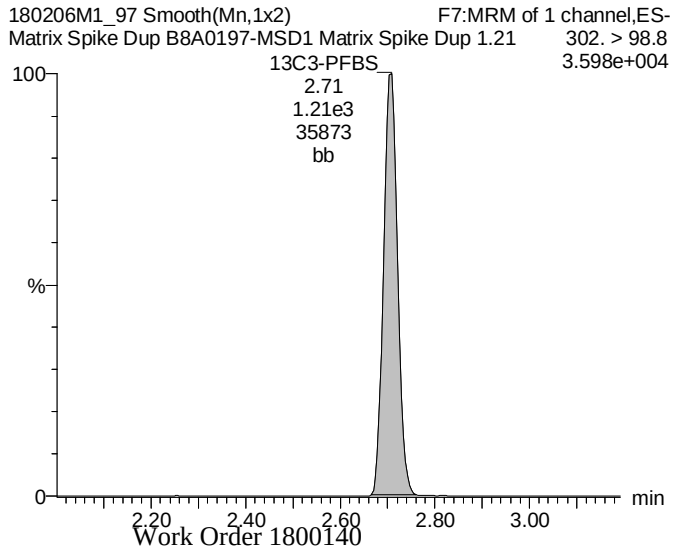


Total PFOS

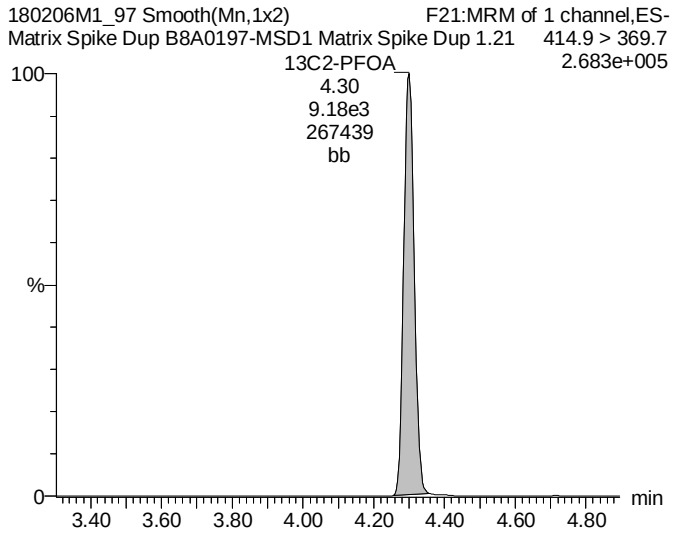




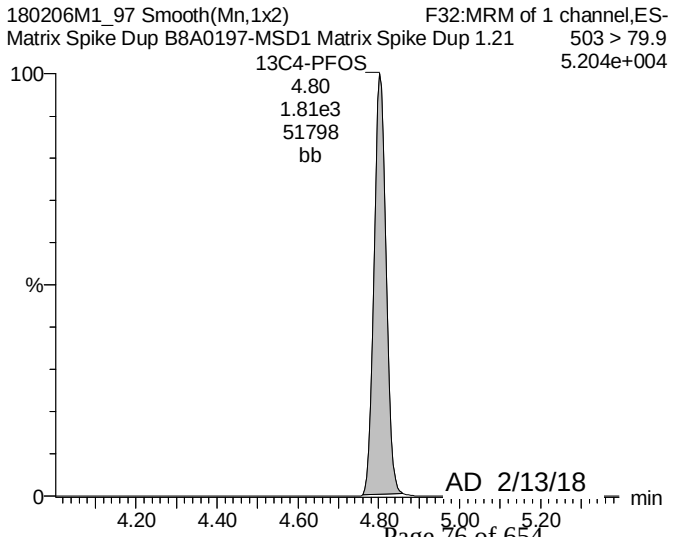
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

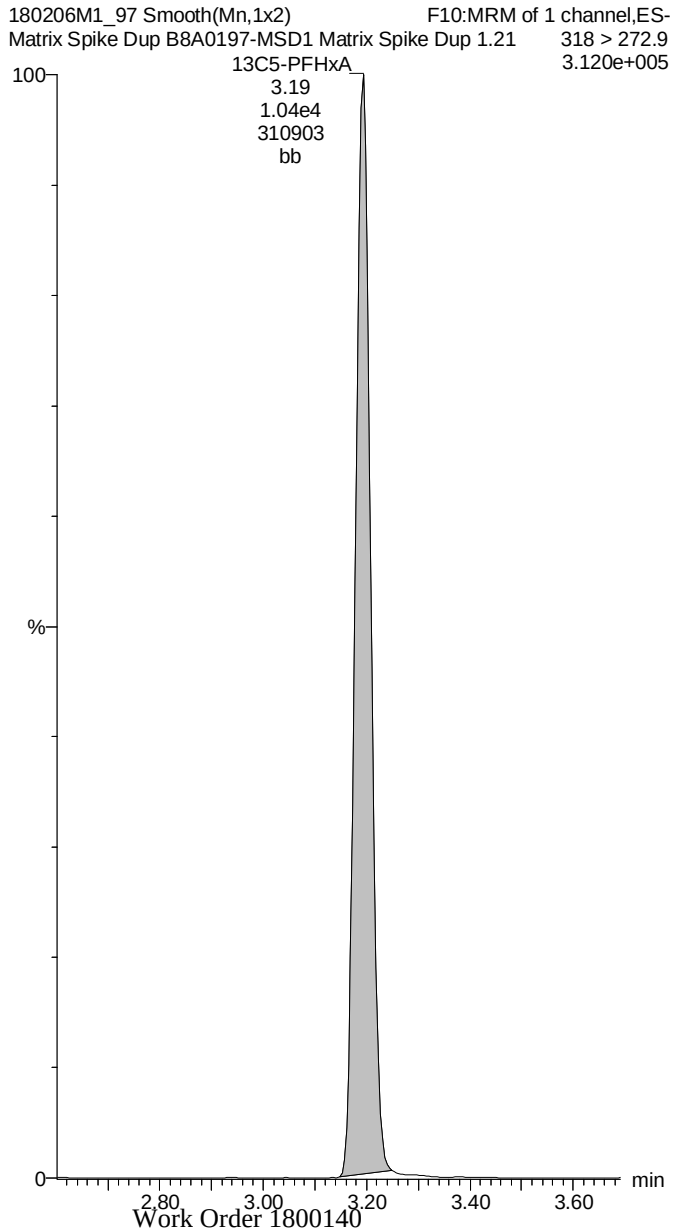
Rev'd: MM 2/14/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-97.qld

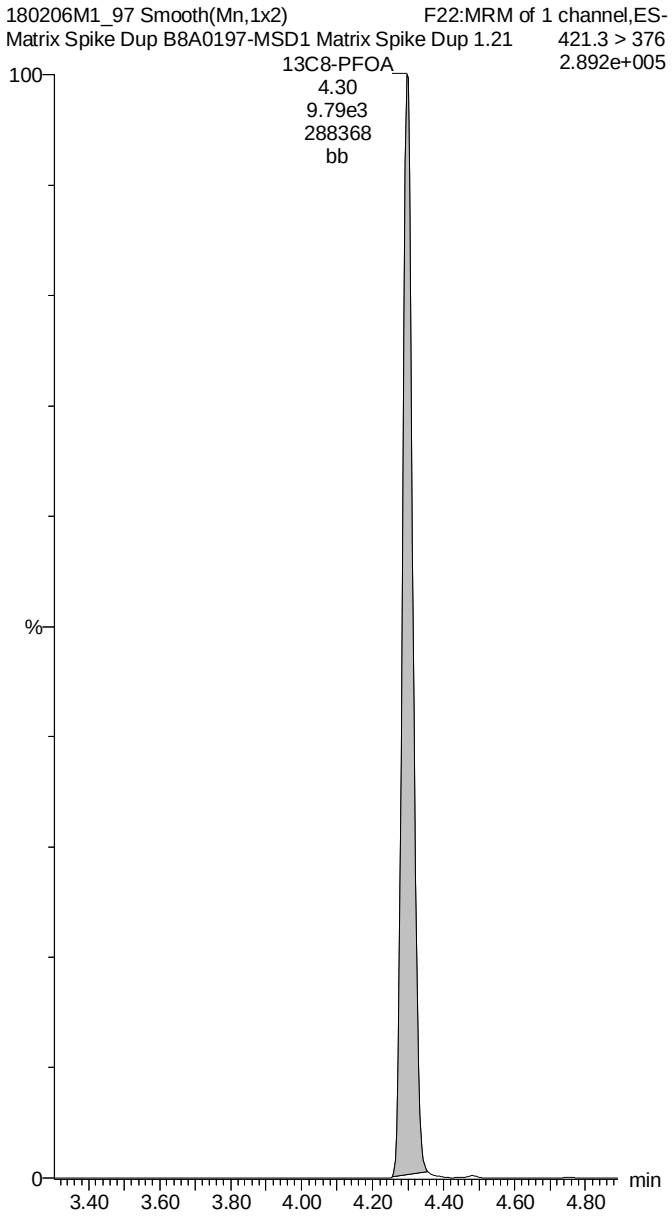
Last Altered: Tuesday, February 13, 2018 10:42:30 Pacific Standard Time
Printed: Tuesday, February 13, 2018 10:43:38 Pacific Standard Time

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

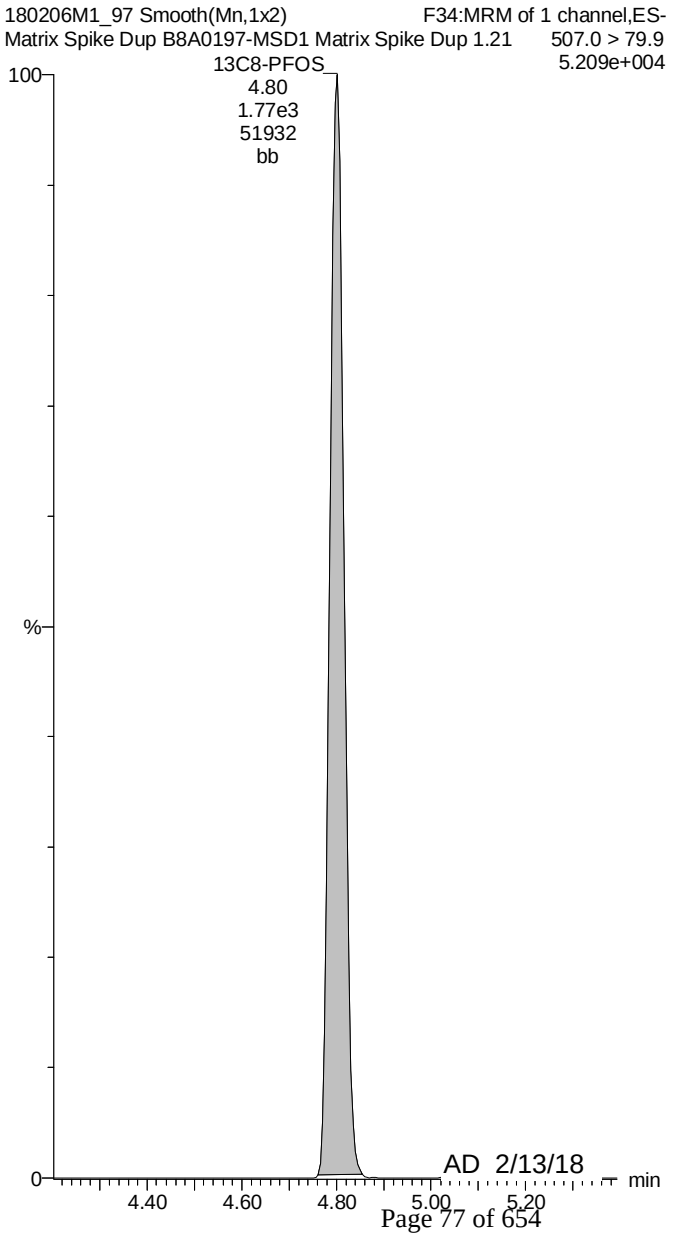
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-103.qld

Last Altered: Monday, February 12, 2018 09:21:23 Pacific Standard Time
Printed: Monday, February 12, 2018 09:21:40 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.37e3	1.2036		2.98				
2	11	L-PFOA	413 > 368.7		1.06e4	1.2036		4.30				
3	16	L-PFOS	499 > 79.9		1.44e3	1.2036		5.11				
4	36	13C3-PFBS	302. > 98.8	1.37e3	1.17e4	1.2036	0.109	2.98	2.70	1.46	11.1	106.7
5	41	13C2-PFOA	414.9 > 369.7	1.06e4	1.02e4	1.2036	1.069	4.30	4.30	12.9	10.0	96.4
6	44	13C8-PFOS	507.0 > 79.9	1.44e3	1.26e3	1.2036	1.041	5.11	4.80	14.3	11.4	110.1
7	58	13C5-PFHxA	318 > 272.9	1.17e4	1.17e4	1.2036	1.000	3.48	3.19	12.5	10.4	100.0
8	60	13C8-PFOA	421.3 > 376	1.02e4	1.02e4	1.2036	1.000	4.61	4.30	12.5	10.4	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-103.qld

Last Altered: Monday, February 12, 2018 09:21:23 Pacific Standard Time
Printed: Monday, February 12, 2018 09:21:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.26e3	1.26e3	1.2036	1.000	5.11	4.80	12.5	10.4	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	1.06e4	1.2036		4.61		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.44e3	1.2036		5.11		0.000		

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

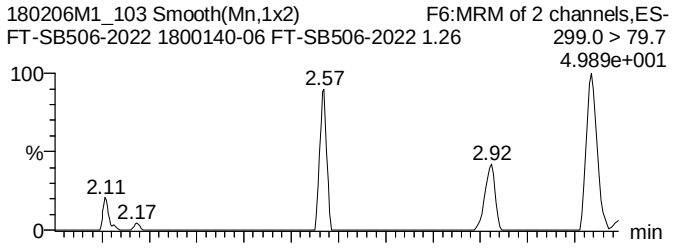
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-103.qld

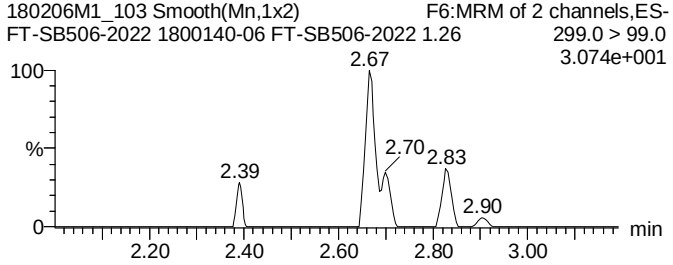
Last Altered: Monday, February 12, 2018 09:21:23 Pacific Standard Time
Printed: Monday, February 12, 2018 09:21:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

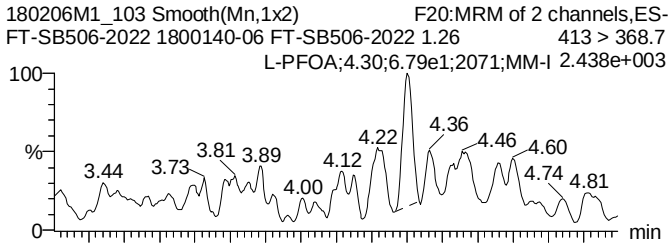
Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

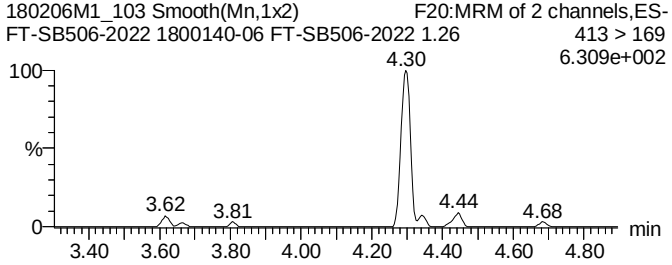
PFBS



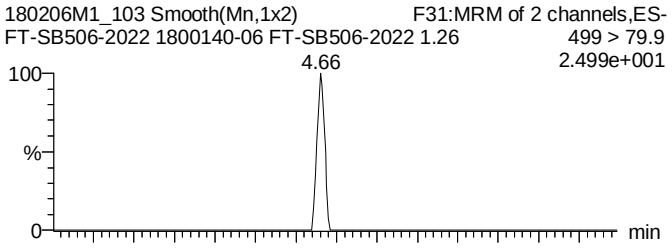


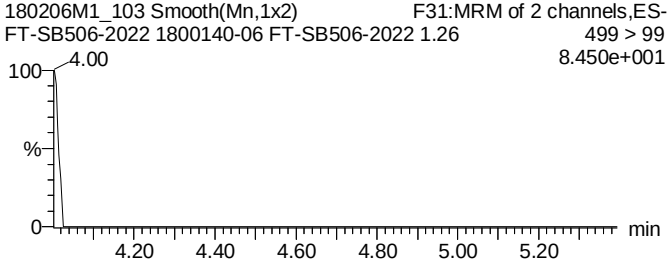
Total PFOA



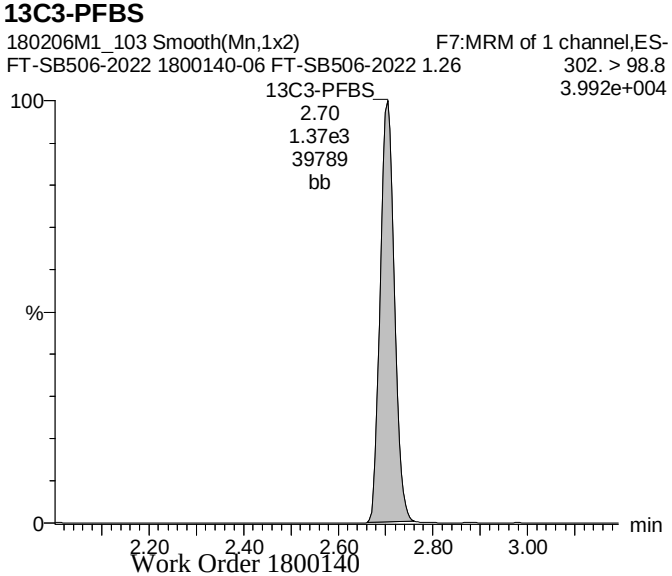


Total PFOS





13C3-PFBS



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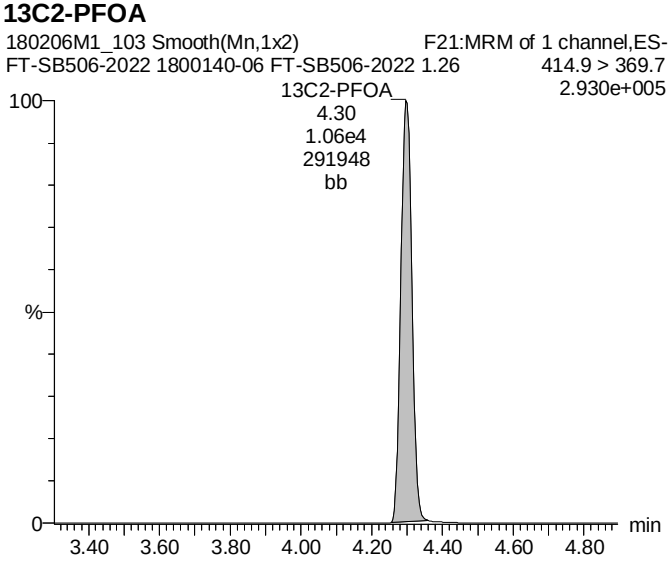

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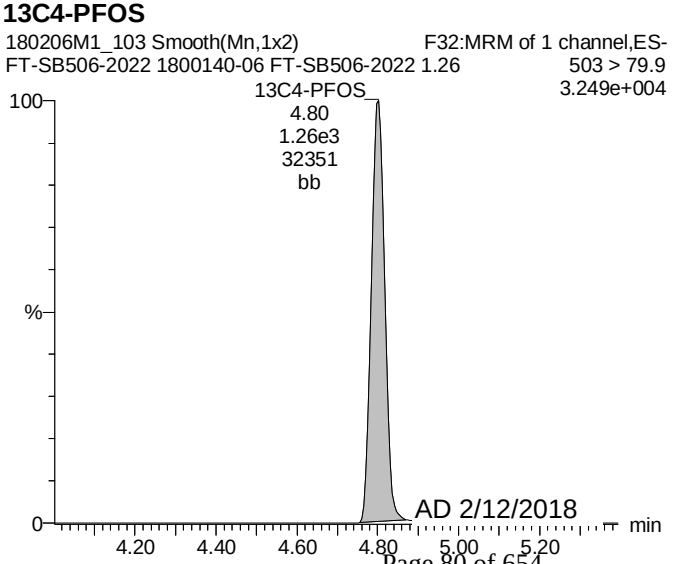


AD 2/12/2018

Vista Analytical Laboratory

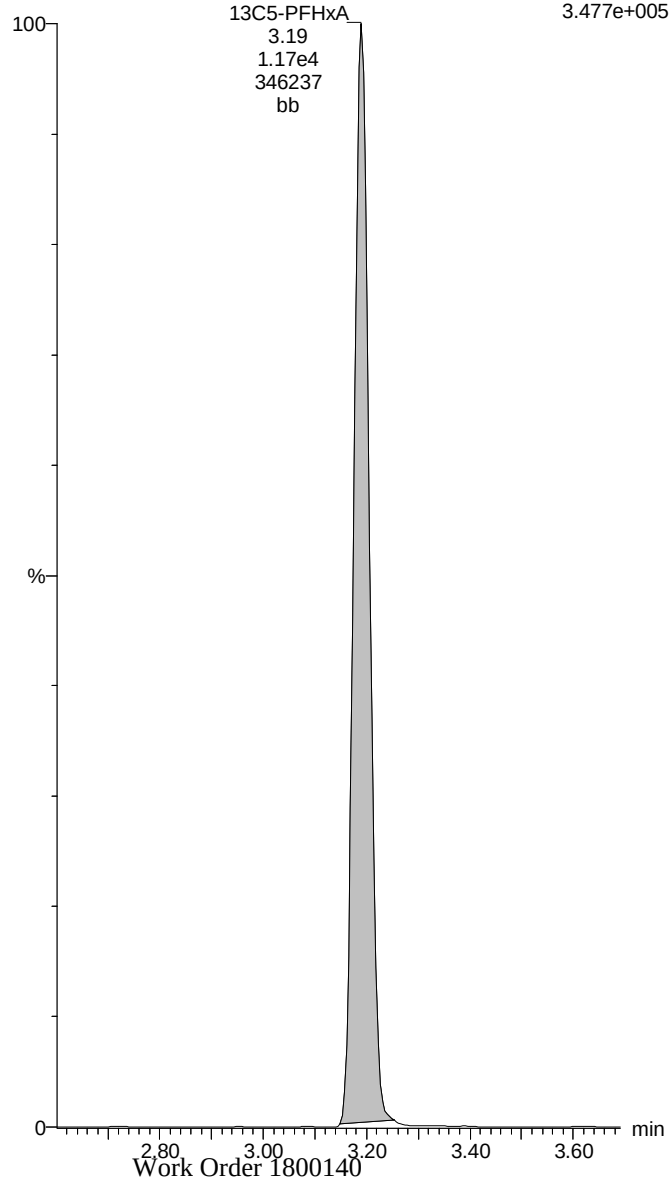
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-103.qld

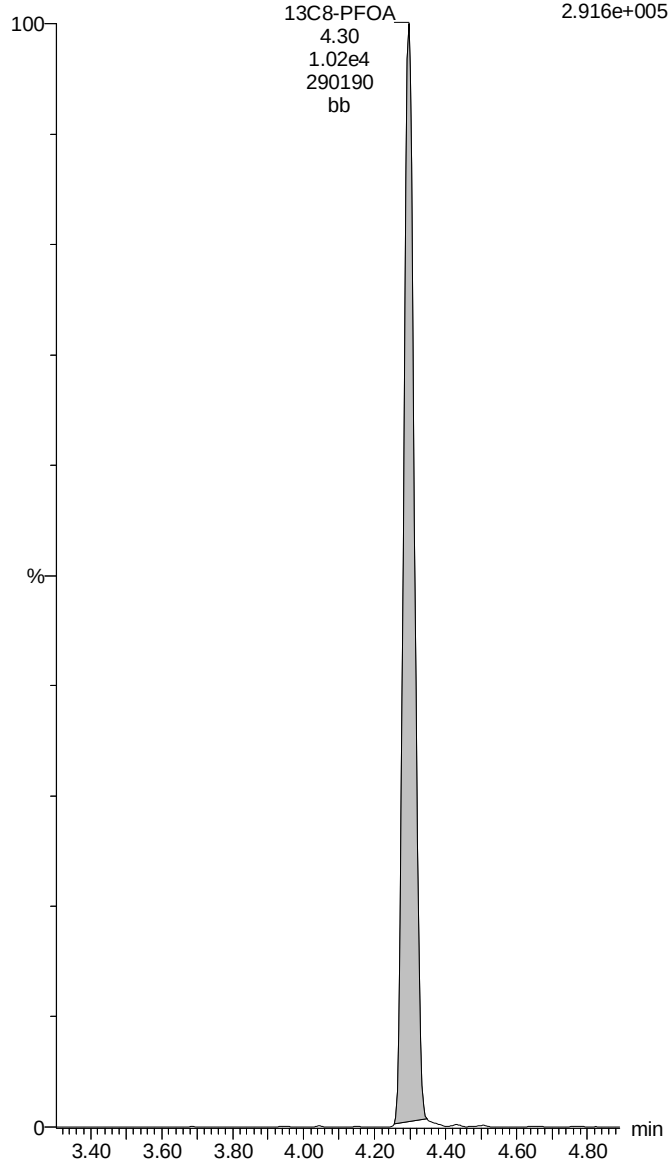
Last Altered: Monday, February 12, 2018 09:21:23 Pacific Standard Time
Printed: Monday, February 12, 2018 09:21:46 Pacific Standard Time

Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

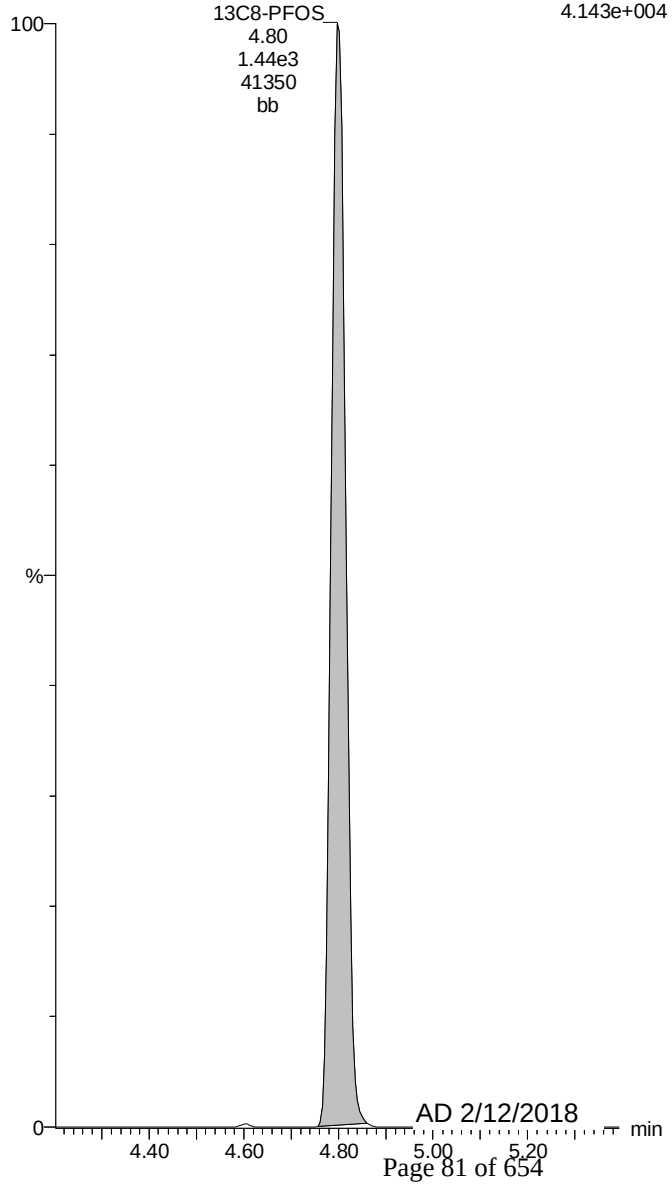
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-104.qld

Last Altered: Tuesday, February 13, 2018 09:13:56 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:14:35 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	1.99e0	1.30e3	1.1994		2.98	2.72	0.0190	0.0187	
2	11	L-PFOA	413 > 368.7	4.26e3	8.79e3	1.1994		4.30	4.30	6.06	5.24	
3	16	L-PFOS	499 > 79.9		1.58e3	1.1994		5.11				
4	36	13C3-PFBS	302. > 98.8	1.30e3	1.08e4	1.1994	0.109	2.98	2.70	1.51	11.5	110.6
5	41	13C2-PFOA	414.9 > 369.7	8.79e3	8.75e3	1.1994	1.069	4.61	4.30	12.6	9.80	94.0
6	44	13C8-PFOS	507.0 > 79.9	1.58e3	1.60e3	1.1994	1.041	5.11	4.80	12.4	9.91	95.1
7	58	13C5-PFHxA	318 > 272.9	1.08e4	1.08e4	1.1994	1.000	3.48	3.19	12.5	10.4	100.0
8	60	13C8-PFOA	421.3 > 376	8.75e3	8.75e3	1.1994	1.000	4.61	4.30	12.5	10.4	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-104.qld

Last Altered: Tuesday, February 13, 2018 09:13:56 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:14:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.60e3	1.60e3	1.1994	1.000	5.11	4.80	12.5	10.4	100.0
2	66	Total PFOA	413 > 368.7	4.58e3	8.79e3	1.1994		4.31		6.50	5.52	
3	67	Total PFOS	499 > 79.9	0.00e0	1.58e3	1.1994		5.11		0.000		

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-104.qld

Last Altered: Tuesday, February 13, 2018 09:13:56 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:14:46 Pacific Standard Time

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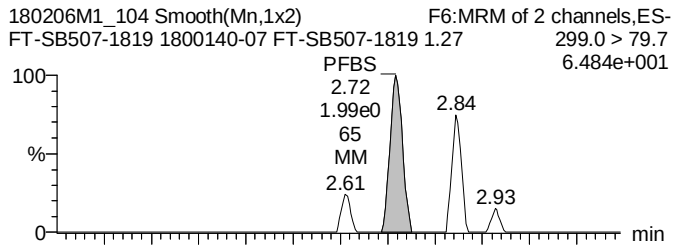
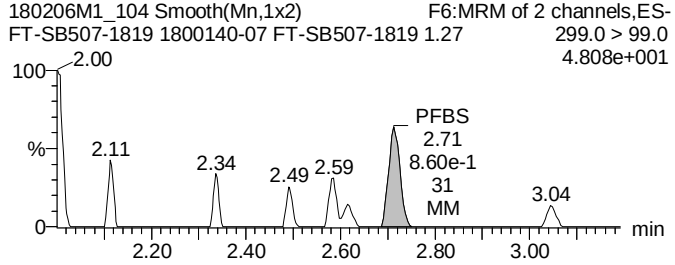
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

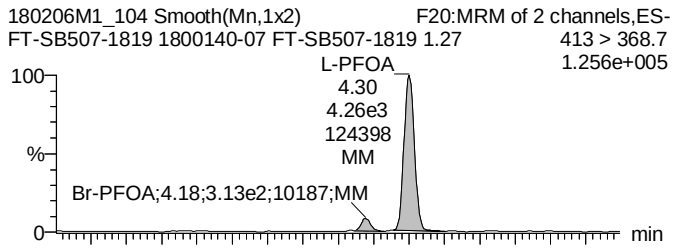
Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

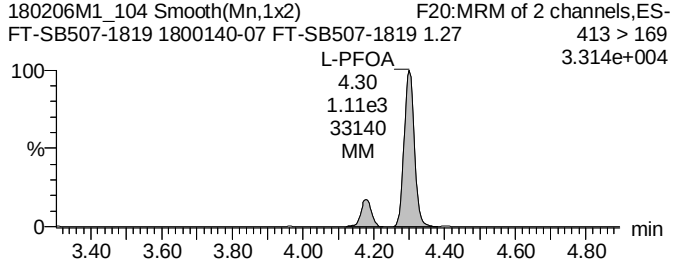
PFBS



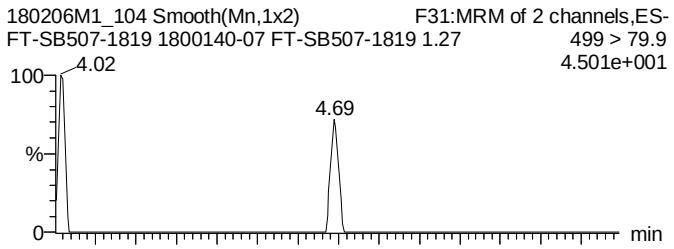


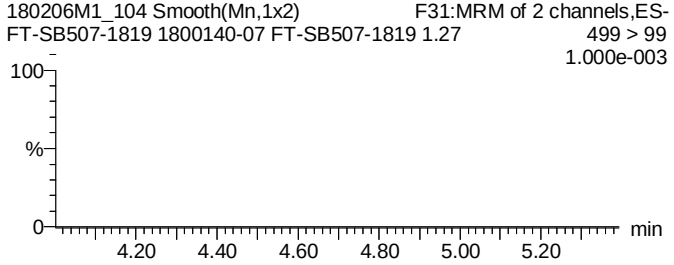
Total PFOA



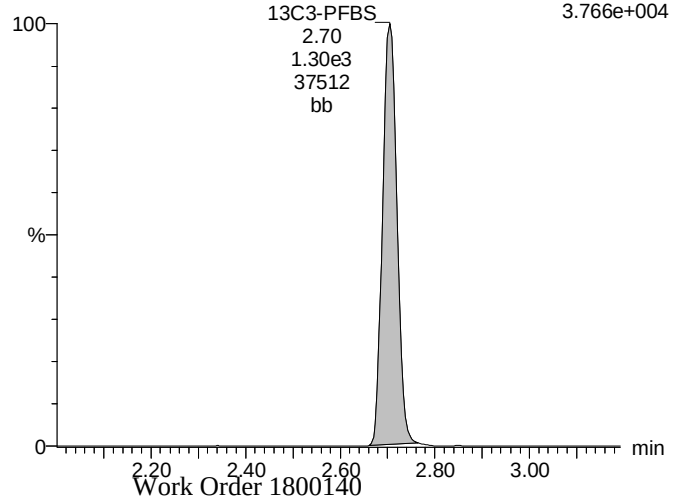


Total PFOS

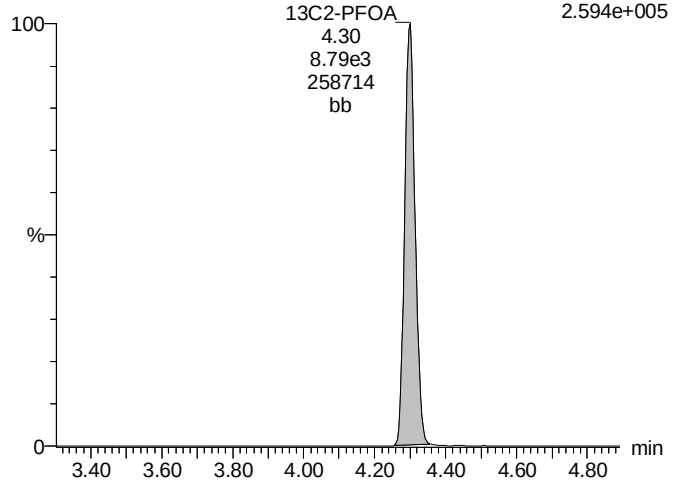




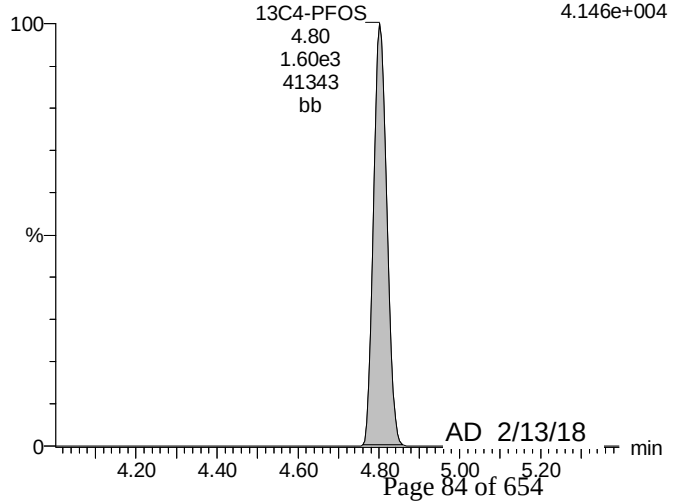
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

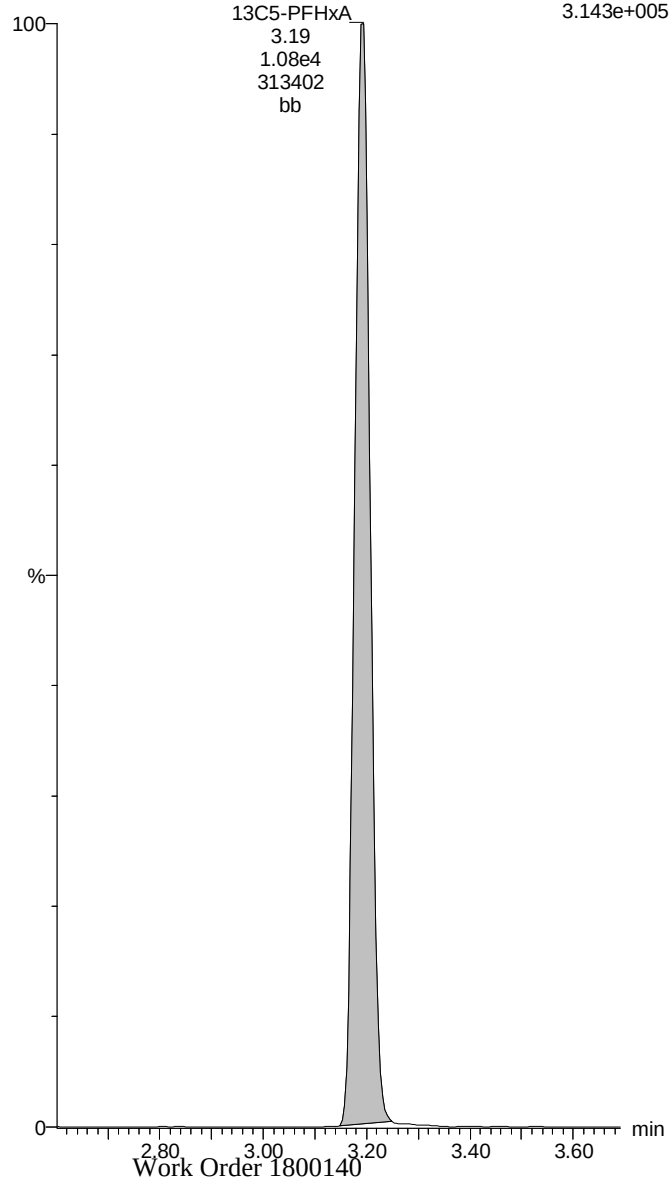
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-104.qld

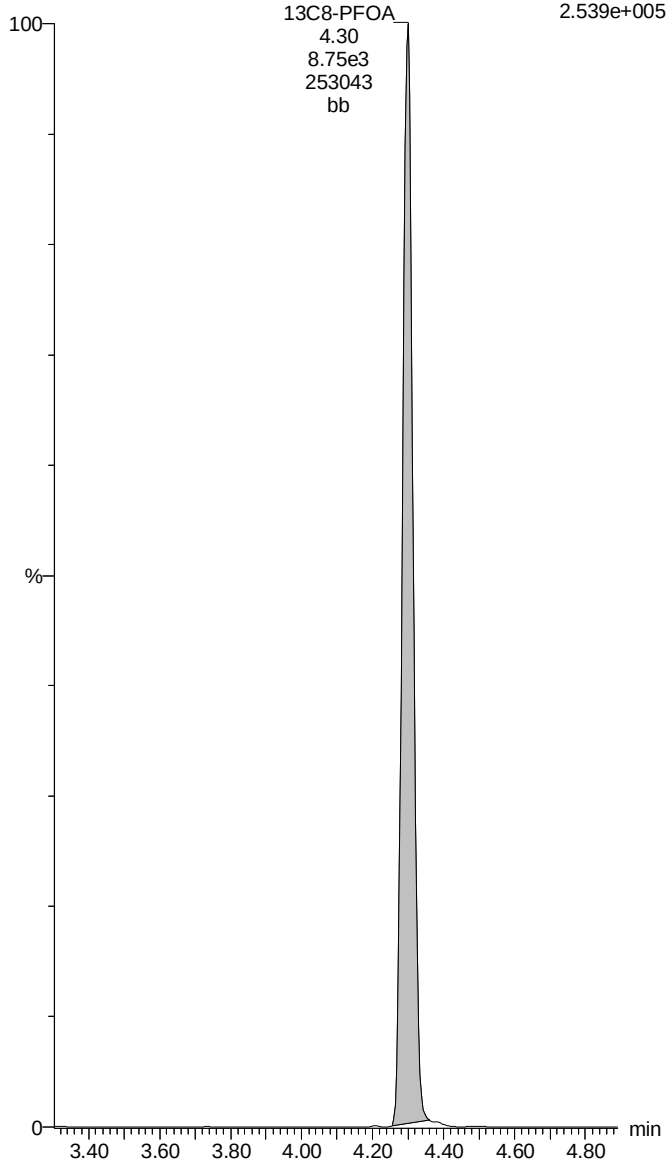
Last Altered: Tuesday, February 13, 2018 09:13:56 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:14:46 Pacific Standard Time

Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

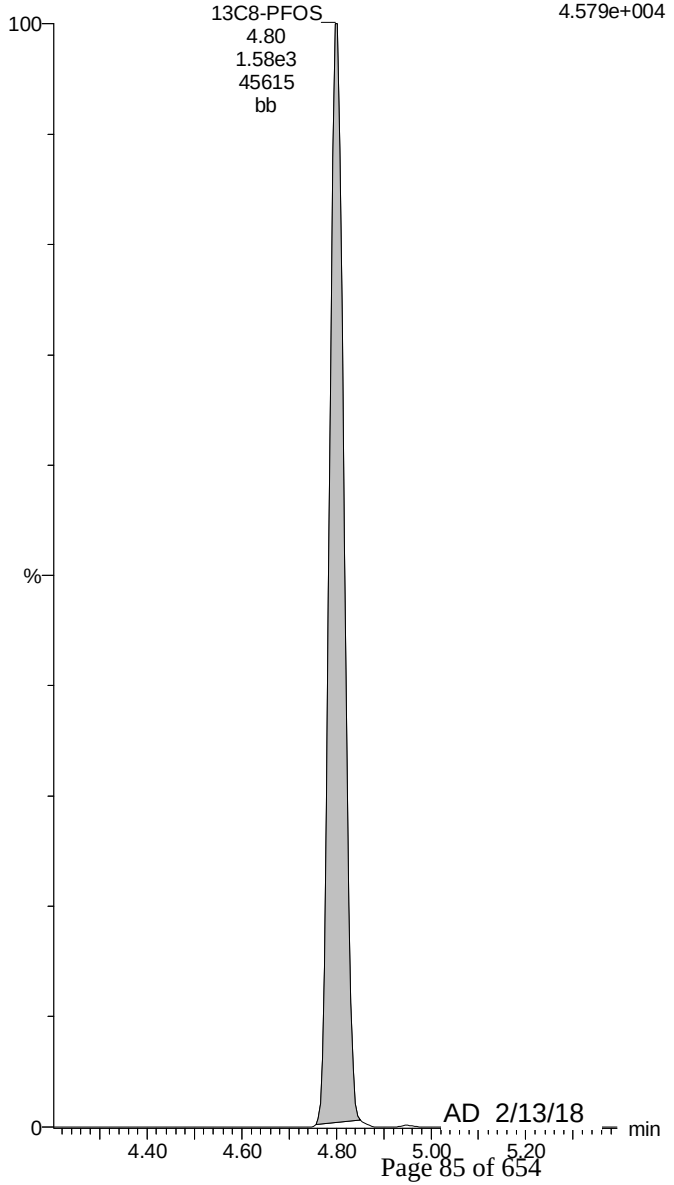
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-105.qld

Last Altered: Tuesday, February 13, 2018 09:19:20 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:19:45 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.25e3	1.1695		2.98				
2	11	L-PFOA	413 > 368.7	3.10e3	1.08e4	1.1695		4.30	4.30	3.58	3.13	
3	16	L-PFOS	499 > 79.9	5.66e2	2.67e3	1.1695		5.11	4.80	2.65	2.07	
4	36	13C3-PFBS	302. > 98.8	1.25e3	1.28e4	1.1695	0.109	2.98	2.70	1.22	9.56	89.4
5	41	13C2-PFOA	414.9 > 369.7	1.08e4	1.16e4	1.1695	1.069	4.30	4.30	11.7	9.32	87.2
6	44	13C8-PFOS	507.0 > 79.9	2.67e3	2.55e3	1.1695	1.041	5.11	4.80	13.1	10.7	100.6
7	58	13C5-PFHxA	318 > 272.9	1.28e4	1.28e4	1.1695	1.000	3.48	3.19	12.5	10.7	100.0
8	60	13C8-PFOA	421.3 > 376	1.16e4	1.16e4	1.1695	1.000	4.30	4.30	12.5	10.7	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-105.qld

Last Altered: Tuesday, February 13, 2018 09:19:20 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:19:58 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.55e3	2.55e3	1.1695	1.000	5.11	4.80	12.5	10.7	100.0
2	66	Total PFOA	413 > 368.7	3.53e3	1.08e4	1.1695		4.30		4.09	3.46	
3	67	Total PFOS	499 > 79.9	5.66e2	2.67e3	1.1695		5.11		2.65	2.07	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

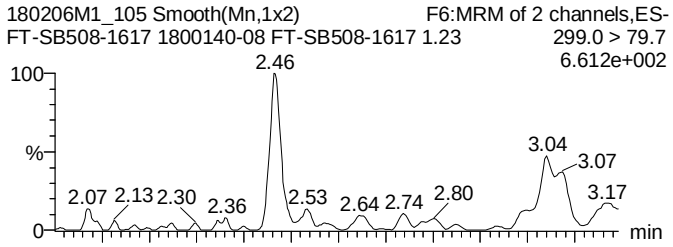
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-105.qld

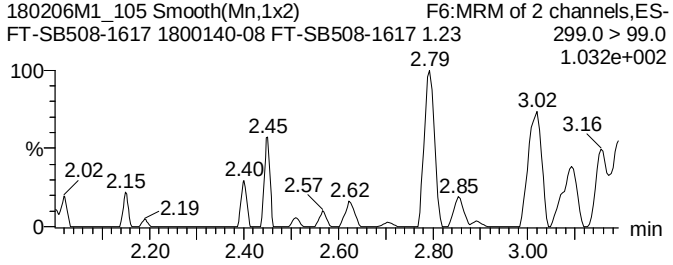
Last Altered: Tuesday, February 13, 2018 09:19:20 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:19:58 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

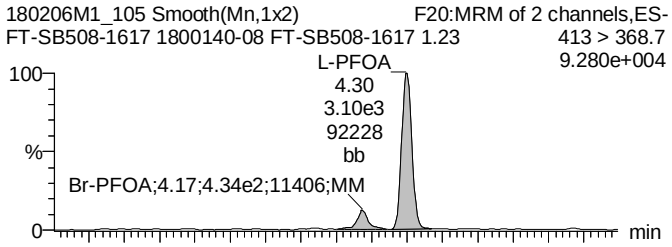
Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

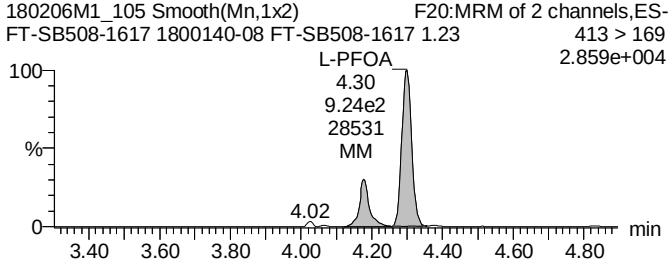
PFBS



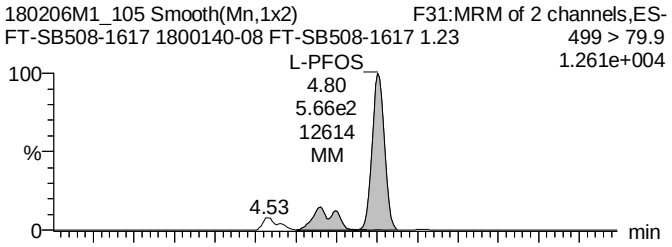


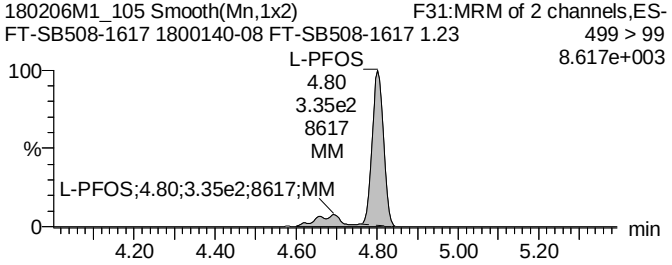
Total PFOA



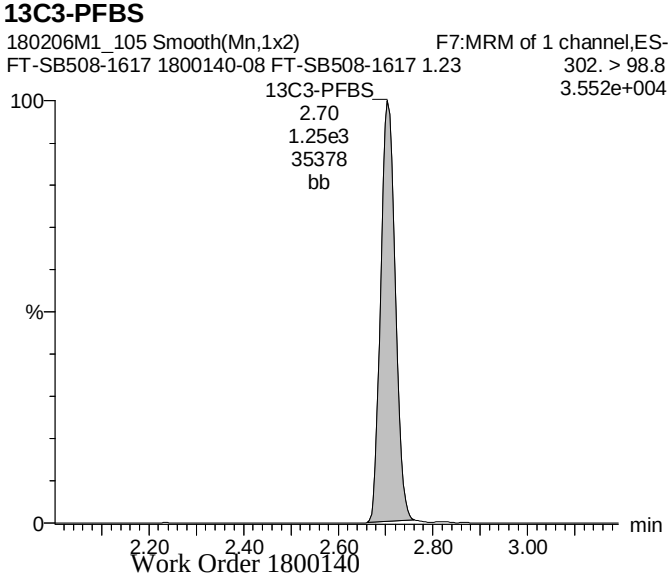


Total PFOS

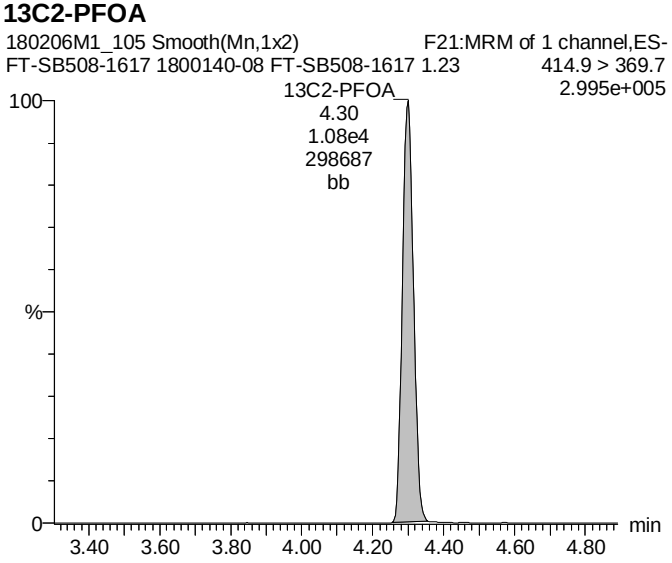




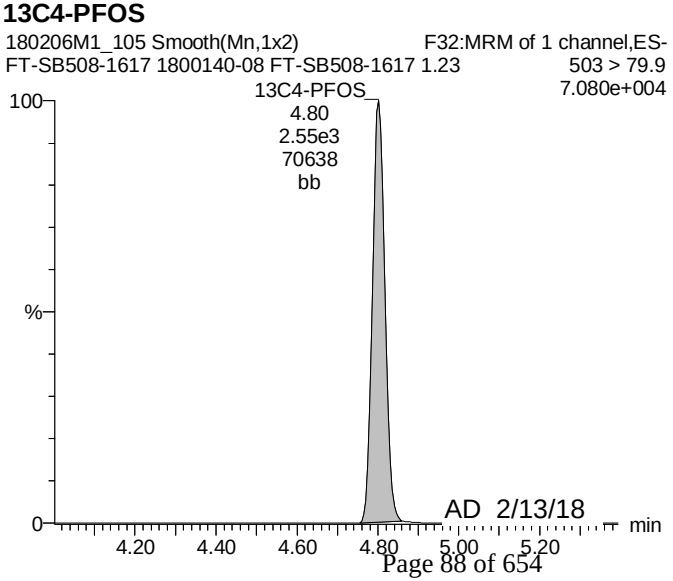
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

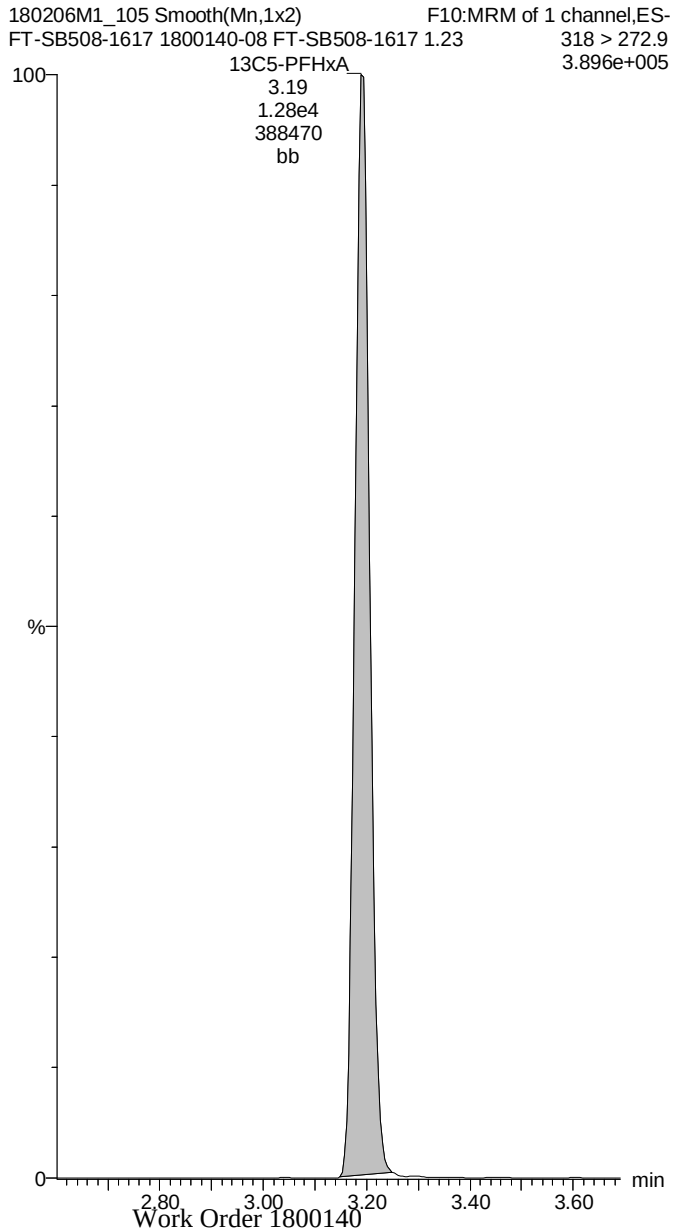
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-105.qld

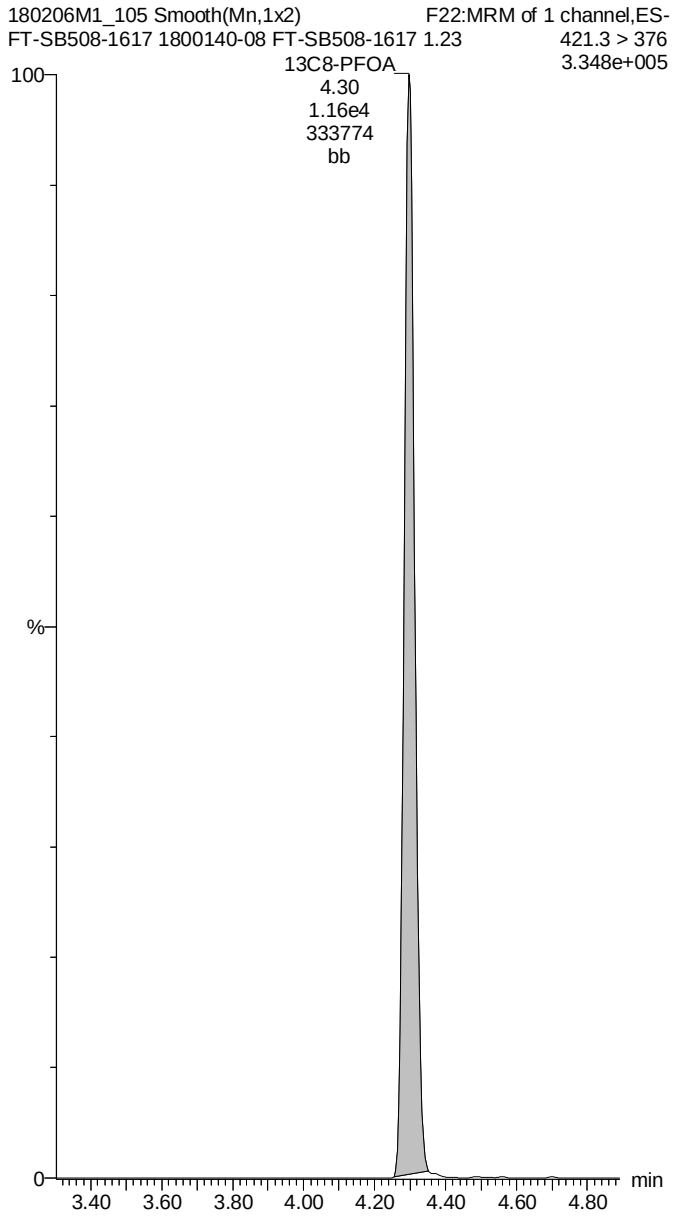
Last Altered: Tuesday, February 13, 2018 09:19:20 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:19:58 Pacific Standard Time

Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

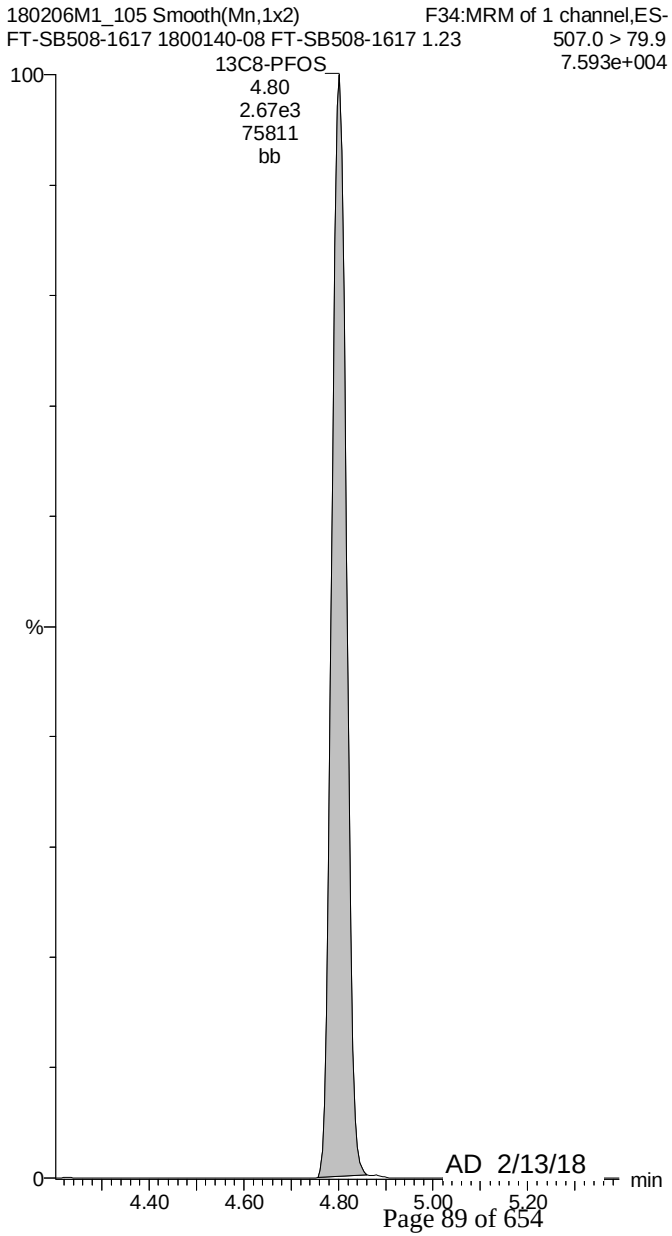
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/12/2018 Rev'd: MM 2/13/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-106.qld

Last Altered: Monday, February 12, 2018 09:52:02 Pacific Standard Time
Printed: Monday, February 12, 2018 09:52:45 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.38e3	1.1751		2.98				
2	11	L-PFOA	413 > 368.7	2.32e2	1.01e4	1.1751		4.30	4.30	0.289	0.140	
3	16	L-PFOS	499 > 79.9	3.44e3	1.10e3	1.1751		5.11	4.80	39.2	30.0	
4	36	13C3-PFBS	302. > 98.8	1.38e3	1.11e4	1.1751	0.109	2.98	2.70	1.55	12.1	113.8
5	41	13C2-PFOA	414.9 > 369.7	1.01e4	1.09e4	1.1751	1.069	4.30	4.30	11.5	9.18	86.3
6	44	13C8-PFOS	507.0 > 79.9	1.10e3	1.12e3	1.1751	1.041	5.11	4.80	12.2	9.97	93.7
7	58	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	1.1751	1.000	3.48	3.19	12.5	10.6	100.0
8	60	13C8-PFOA	421.3 > 376	1.09e4	1.09e4	1.1751	1.000	4.30	4.30	12.5	10.6	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018 Rev'd: MM 2/13/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-106.qld

Last Altered: Monday, February 12, 2018 09:52:02 Pacific Standard Time
Printed: Monday, February 12, 2018 09:52:50 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.12e3	1.12e3	1.1751	1.000	5.11	4.80	12.5	10.6	100.0
2	66	Total PFOA	413 > 368.7	2.32e2	1.01e4	1.1751		4.30		0.289	0.140	
3	67	Total PFOS	499 > 79.9	3.44e3	1.10e3	1.1751		5.11		39.2	30.0	

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018 Rev'd: MM 2/13/2018

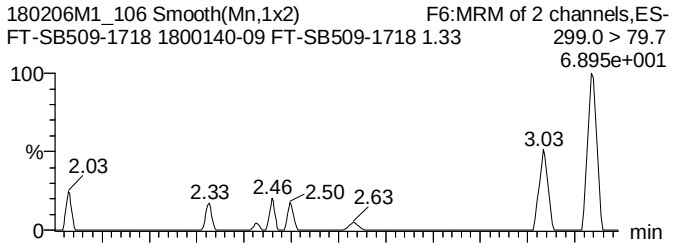
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-106.qld

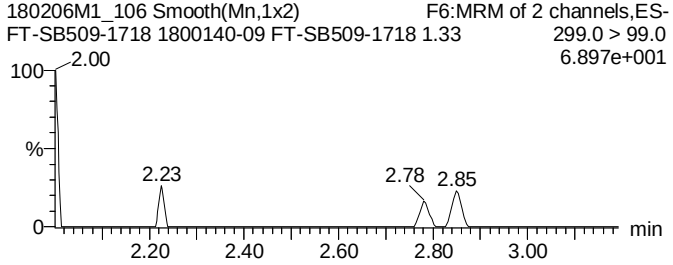
Last Altered: Monday, February 12, 2018 09:52:02 Pacific Standard Time
Printed: Monday, February 12, 2018 09:52:50 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

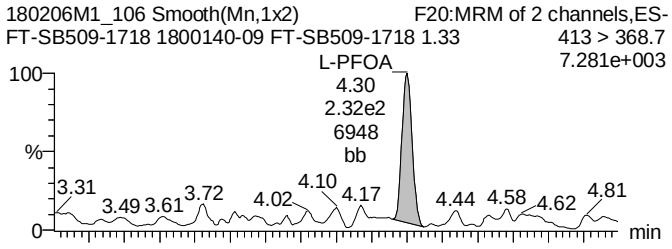
Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

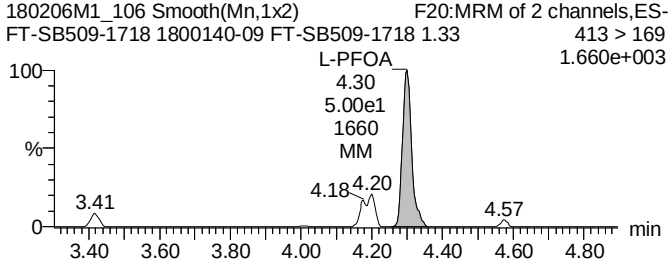
PFBS



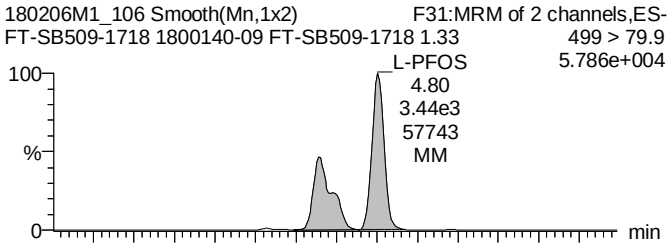


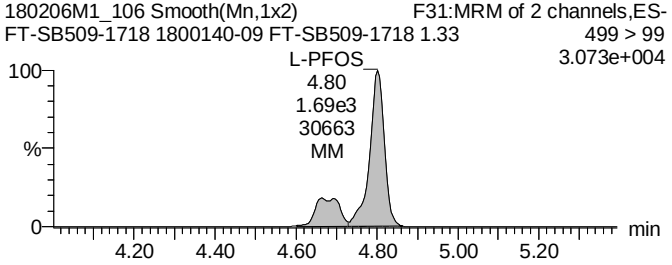
Total PFOA



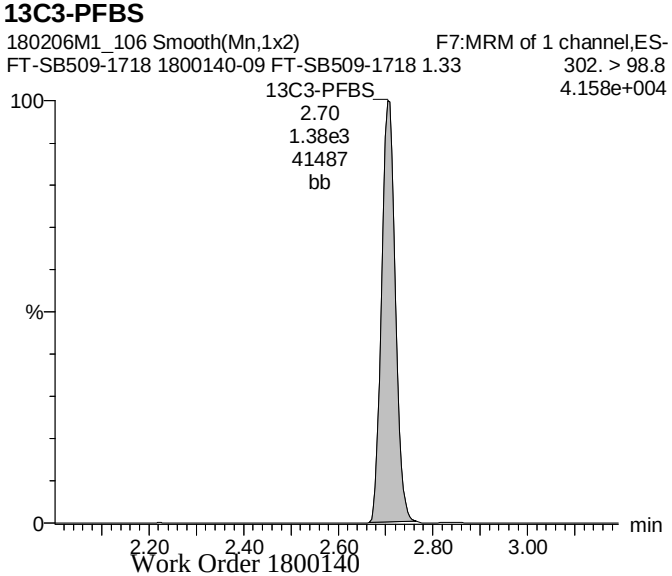


Total PFOS

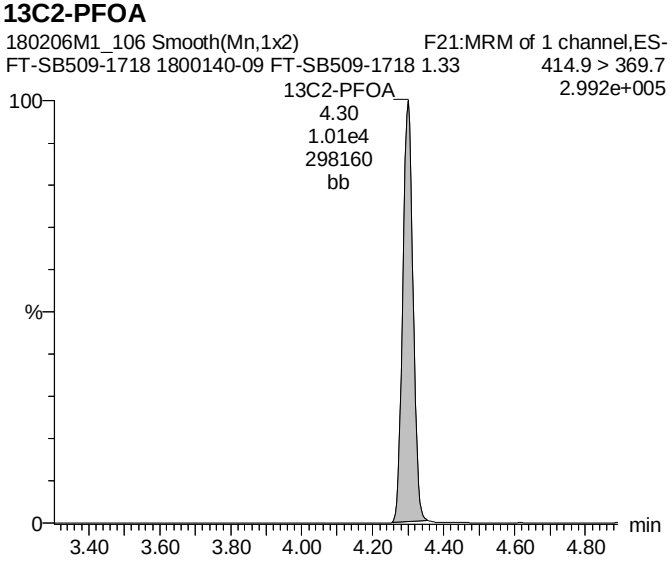




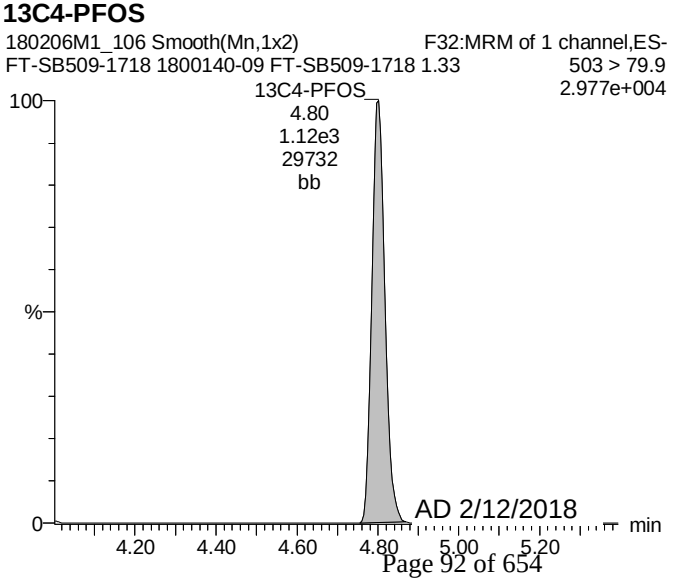
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

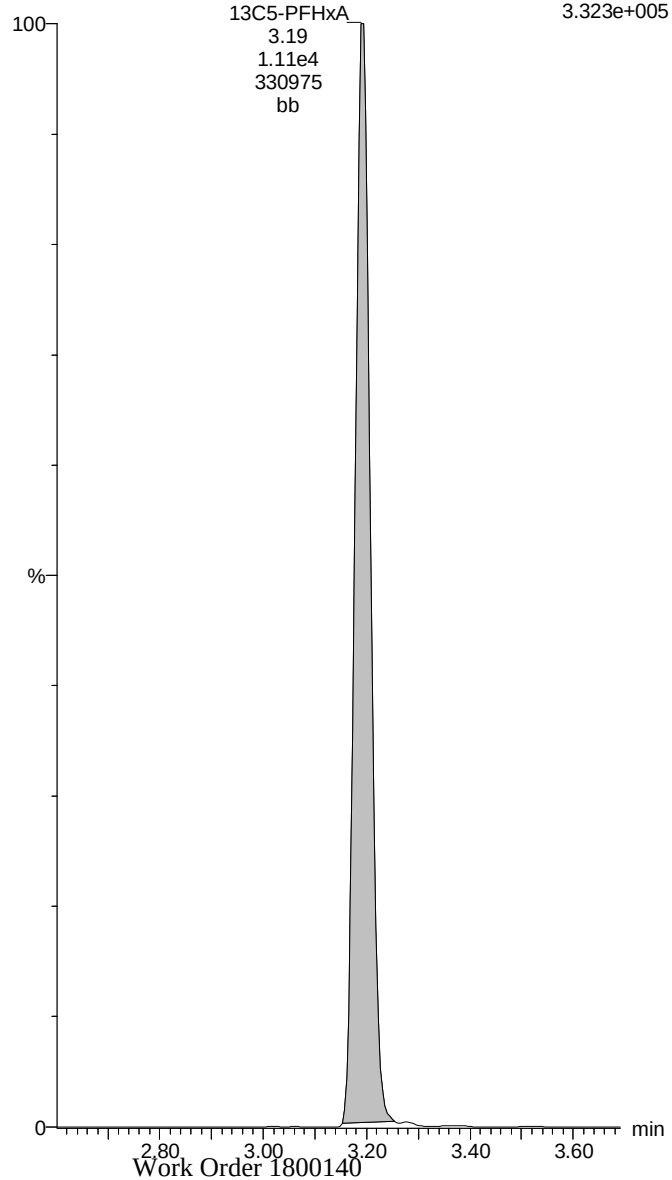
Rev'd: MM 2/12/2018 Rev'd: MM 2/13/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-106.qld

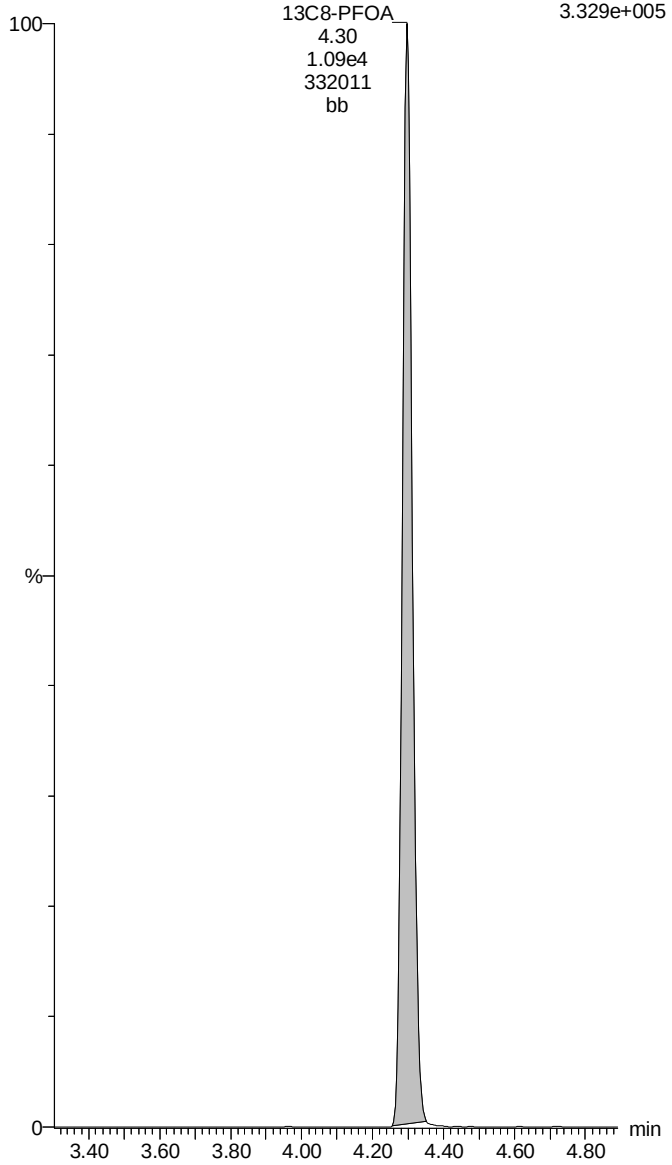
Last Altered: Monday, February 12, 2018 09:52:02 Pacific Standard Time
Printed: Monday, February 12, 2018 09:52:50 Pacific Standard Time

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

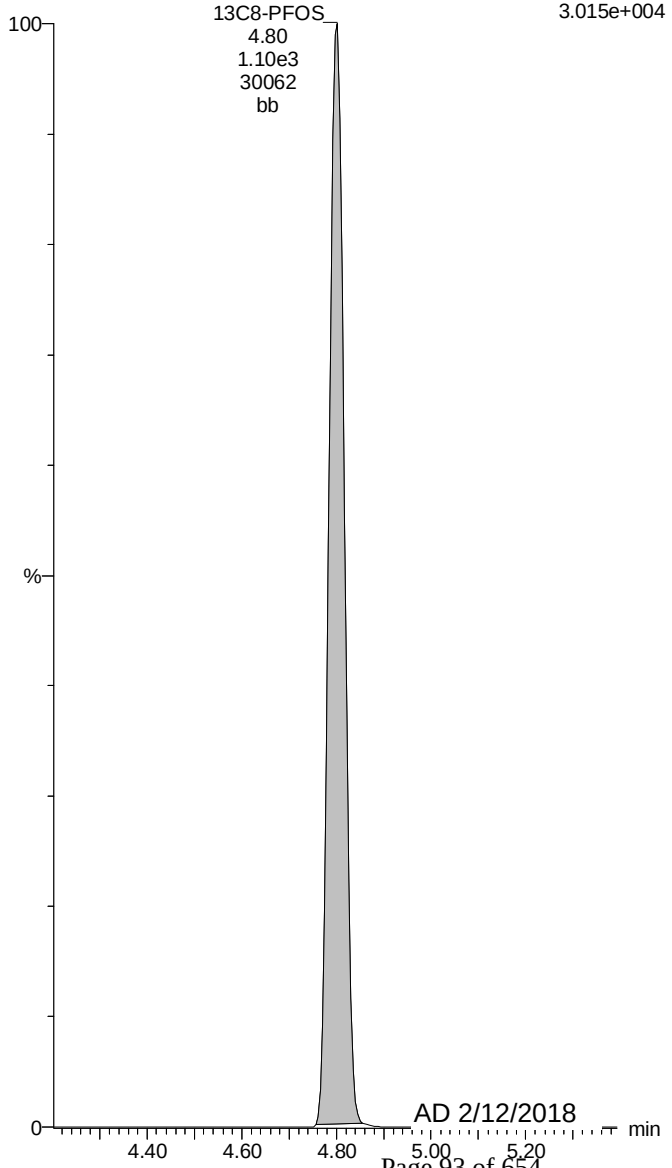
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-107.qld

Last Altered: Monday, February 12, 2018 09:57:03 Pacific Standard Time
Printed: Monday, February 12, 2018 09:57:17 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.38e3	1.0816		2.98				
2	11	L-PFOA	413 > 368.7	1.53e2	1.12e4	1.0816		4.30	4.30	0.171	0.0362	
3	16	L-PFOS	499 > 79.9	1.30e3	2.59e3	1.0816		5.11	4.80	6.25	5.18	
4	36	13C3-PFBS	302. > 98.8	1.38e3	1.35e4	1.0816	0.109	2.98	2.70	1.28	10.8	93.7
5	41	13C2-PFOA	414.9 > 369.7	1.12e4	1.15e4	1.0816	1.069	4.30	4.30	12.2	10.5	91.2
6	44	13C8-PFOS	507.0 > 79.9	2.59e3	2.73e3	1.0816	1.041	5.11	4.80	11.9	10.5	91.2
7	58	13C5-PFHxA	318 > 272.9	1.35e4	1.35e4	1.0816	1.000	3.48	3.19	12.5	11.6	100.0
8	60	13C8-PFOA	421.3 > 376	1.15e4	1.15e4	1.0816	1.000	4.30	4.30	12.5	11.6	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-107.qld

Last Altered: Monday, February 12, 2018 09:57:03 Pacific Standard Time
Printed: Monday, February 12, 2018 09:57:25 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.73e3	2.73e3	1.0816	1.000	5.11	4.80	12.5	11.6	100.0
2	66	Total PFOA	413 > 368.7	1.53e2	1.12e4	1.0816		4.30		0.171	0.0362	
3	67	Total PFOS	499 > 79.9	1.30e3	2.59e3	1.0816		5.11		6.25	5.18	

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Vista Analytical Laboratory

Rev'd: MM 2/12/2018

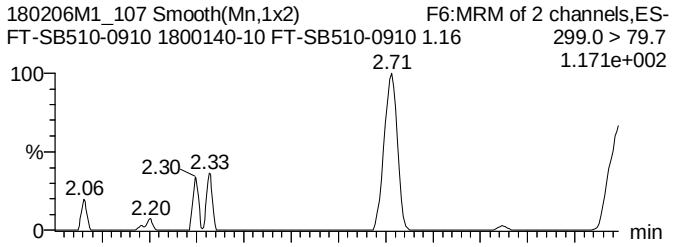
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-107.qld

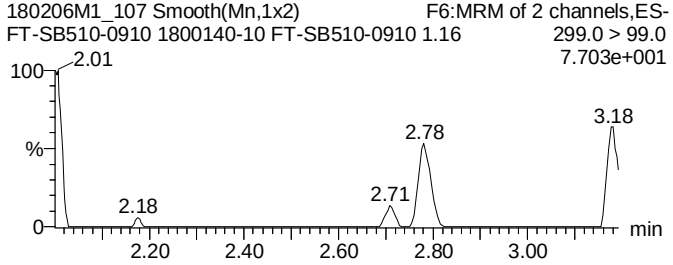
Last Altered: Monday, February 12, 2018 09:57:03 Pacific Standard Time
Printed: Monday, February 12, 2018 09:57:25 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

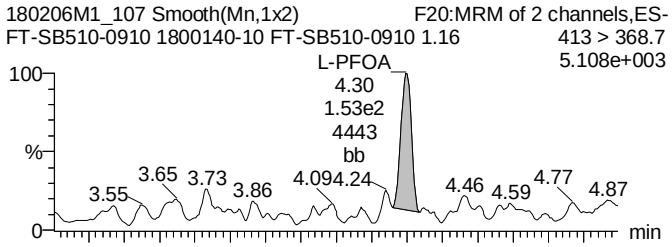
Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

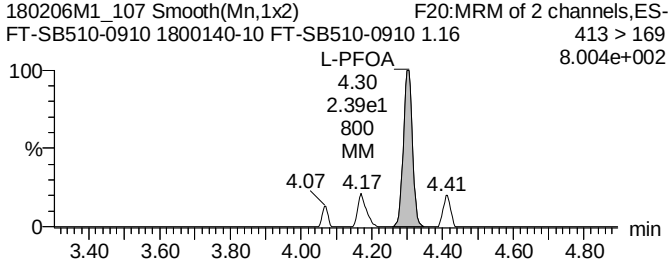
PFBS



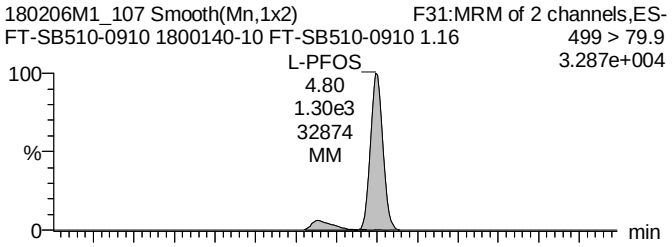


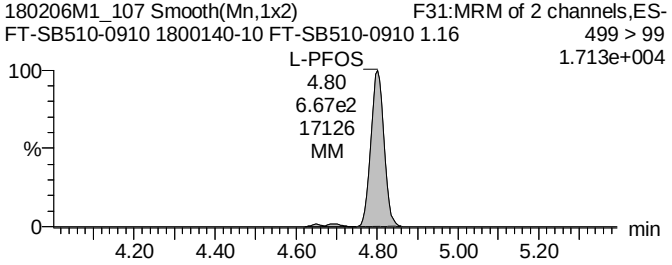
Total PFOA



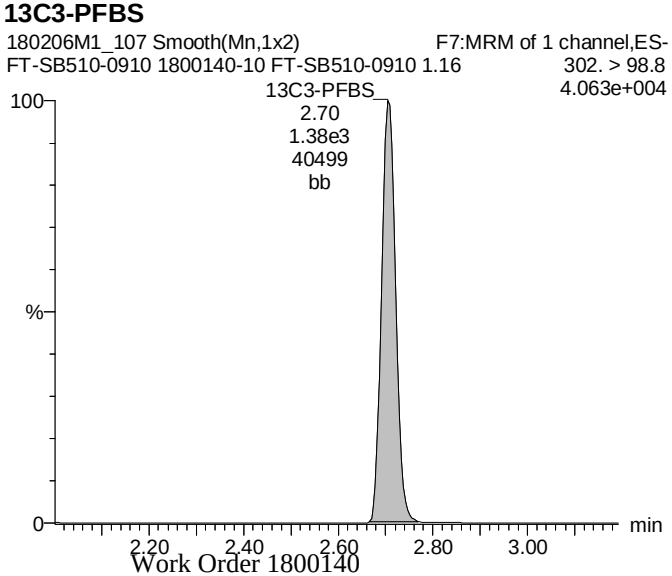


Total PFOS





13C3-PFBS



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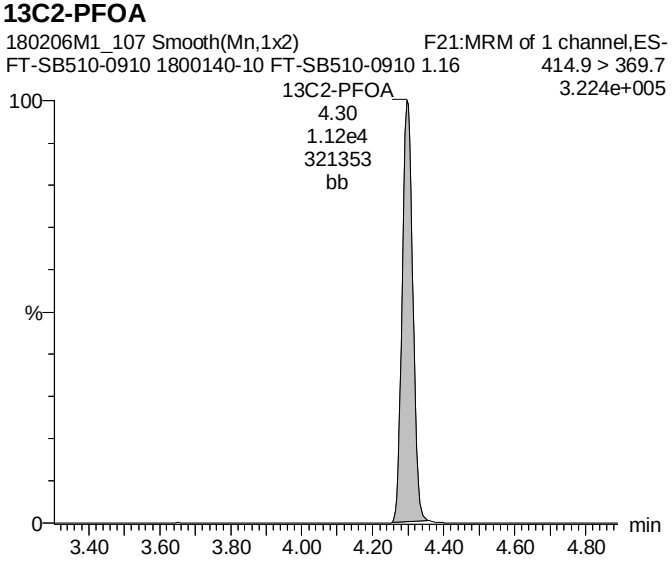
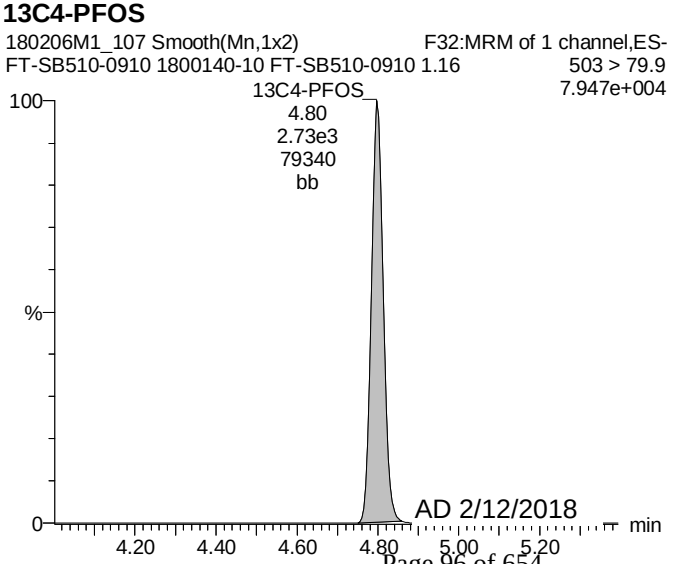


13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

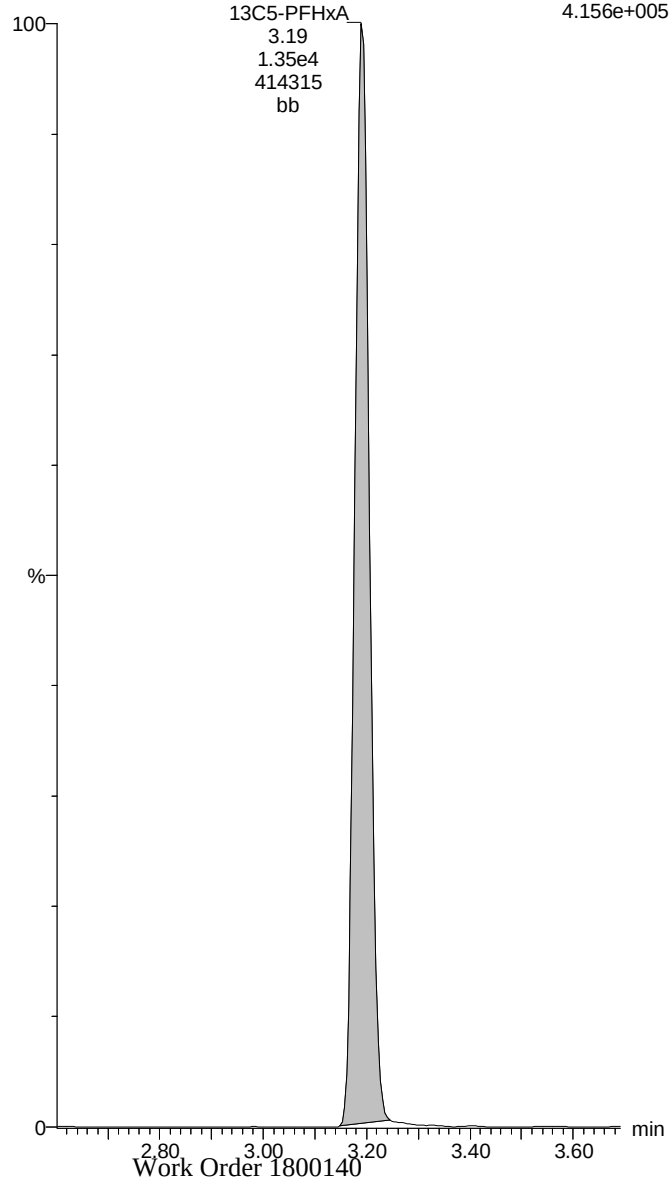
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-107.qld

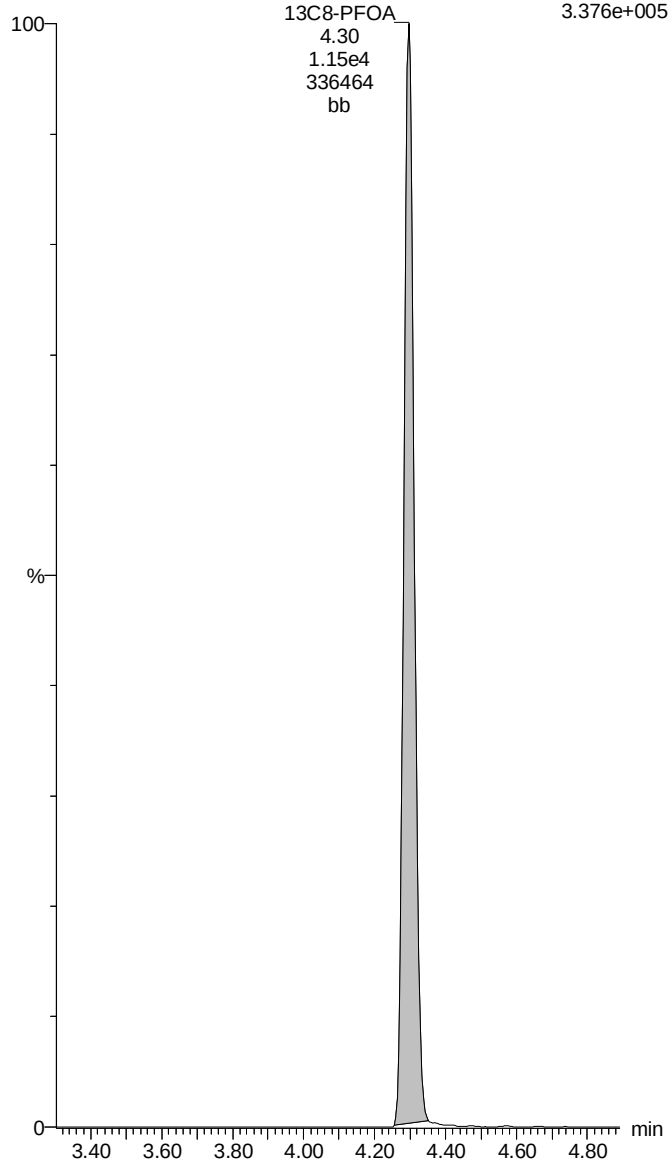
Last Altered: Monday, February 12, 2018 09:57:03 Pacific Standard Time
Printed: Monday, February 12, 2018 09:57:25 Pacific Standard Time

Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

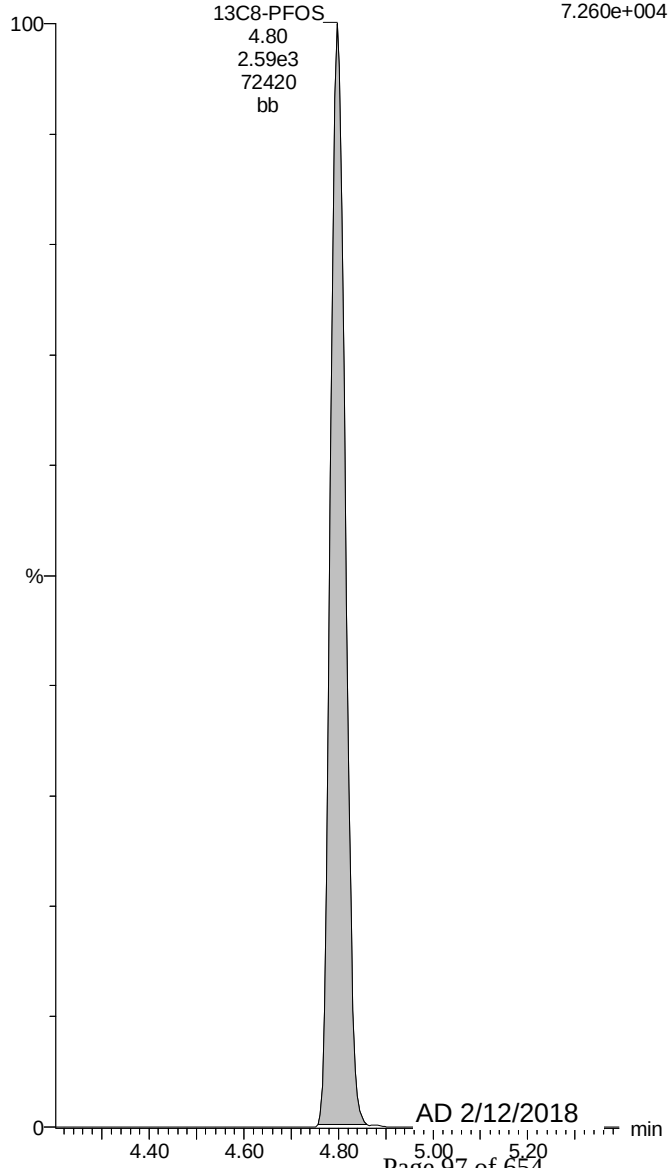
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-111.qld

Last Altered: Tuesday, February 13, 2018 09:24:17 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:24:58 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.33e3	1.1309		2.98				
2	11	L-PFOA	413 > 368.7	2.04e3	1.04e4	1.1309		4.30	4.30	2.45	2.18	
3	16	L-PFOS	499 > 79.9	1.26e2	2.40e3	1.1309		5.11	4.80	0.659	0.579	
4	36	13C3-PFBS	302. > 98.8	1.33e3	1.11e4	1.1309	0.109	2.98	2.70	1.49	12.1	109.2
5	41	13C2-PFOA	414.9 > 369.7	1.04e4	9.05e3	1.1309	1.069	4.30	4.30	14.4	11.9	107.6
6	44	13C8-PFOS	507.0 > 79.9	2.40e3	2.39e3	1.1309	1.041	5.11	4.80	12.6	10.7	96.5
7	58	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	1.1309	1.000	3.48	3.19	12.5	11.1	100.0
8	60	13C8-PFOA	421.3 > 376	9.05e3	9.05e3	1.1309	1.000	4.30	4.30	12.5	11.1	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-111.qld

Last Altered: Tuesday, February 13, 2018 09:24:17 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:25:07 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.39e3	2.39e3	1.1309	1.000	5.11	4.80	12.5	11.1	100.0
2	66	Total PFOA	413 > 368.7	2.38e3	1.04e4	1.1309		4.30		2.85	2.43	
3	67	Total PFOS	499 > 79.9	1.26e2	2.40e3	1.1309		5.11		0.659	0.579	

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

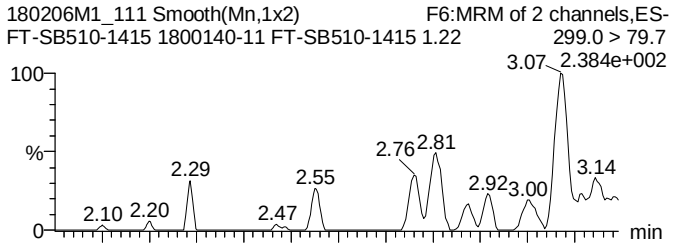
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-111.qld

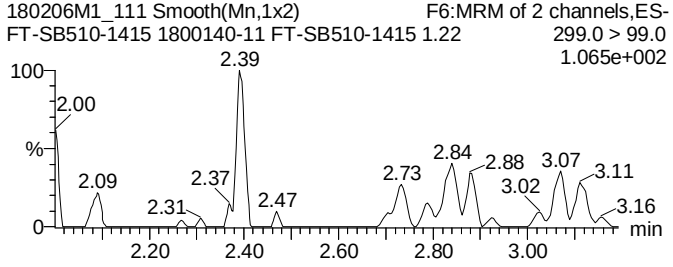
Last Altered: Tuesday, February 13, 2018 09:24:17 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:25:07 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

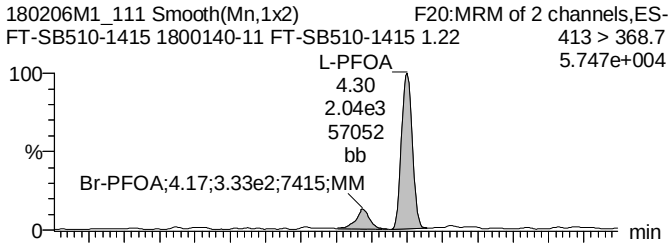
Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

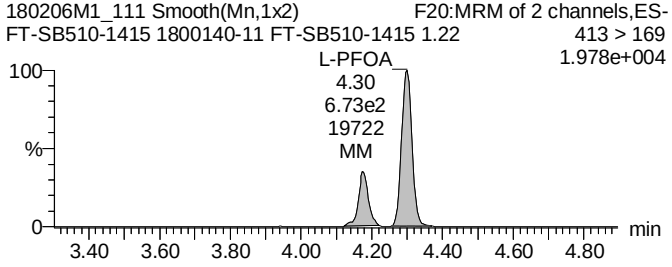
PFBS



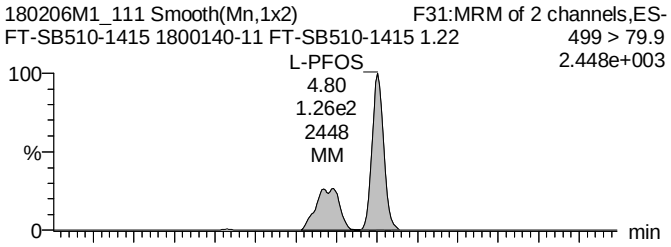


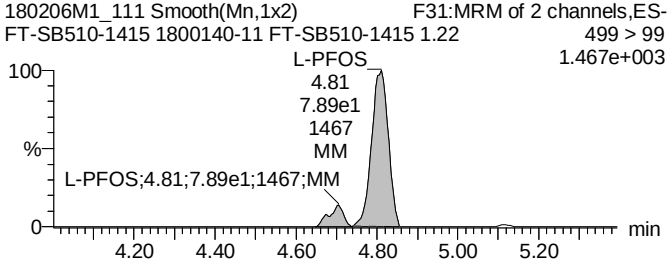
Total PFOA



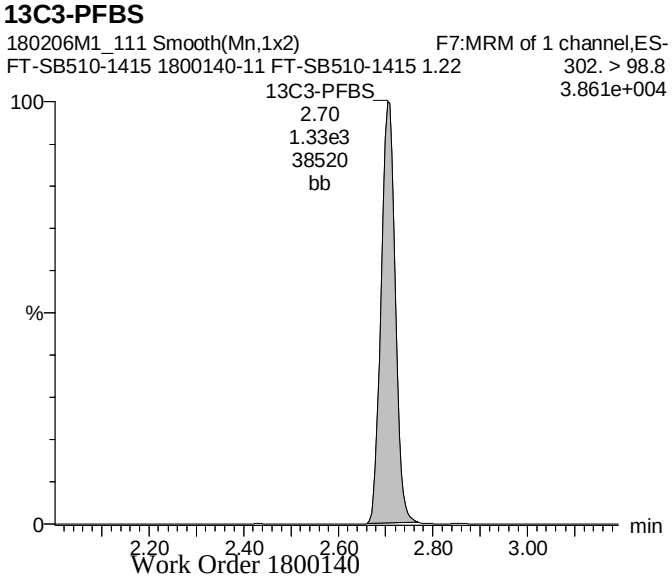


Total PFOS

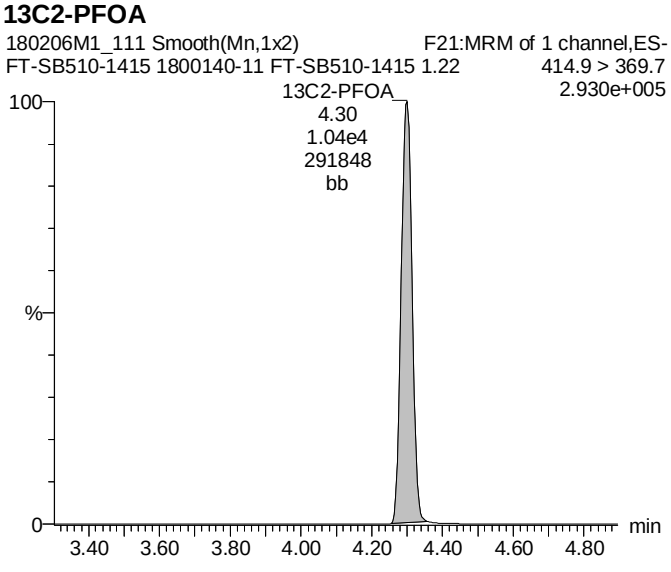




13C3-PFBS



13C2-PFOA



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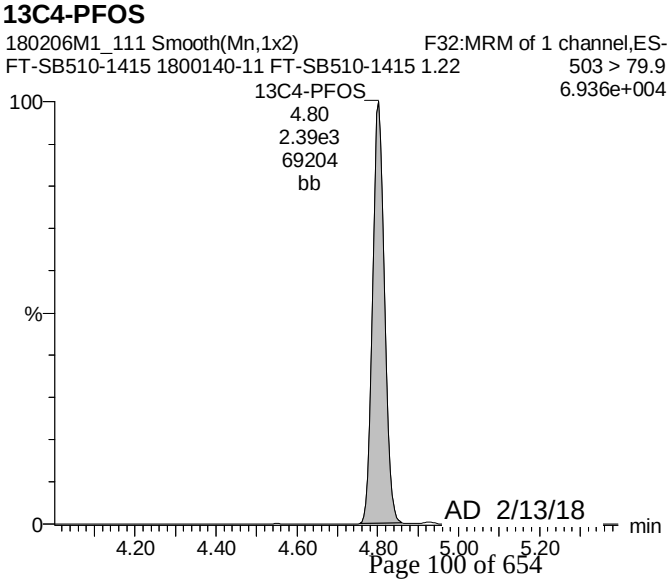


AD 2/13/18

Vista Analytical Laboratory

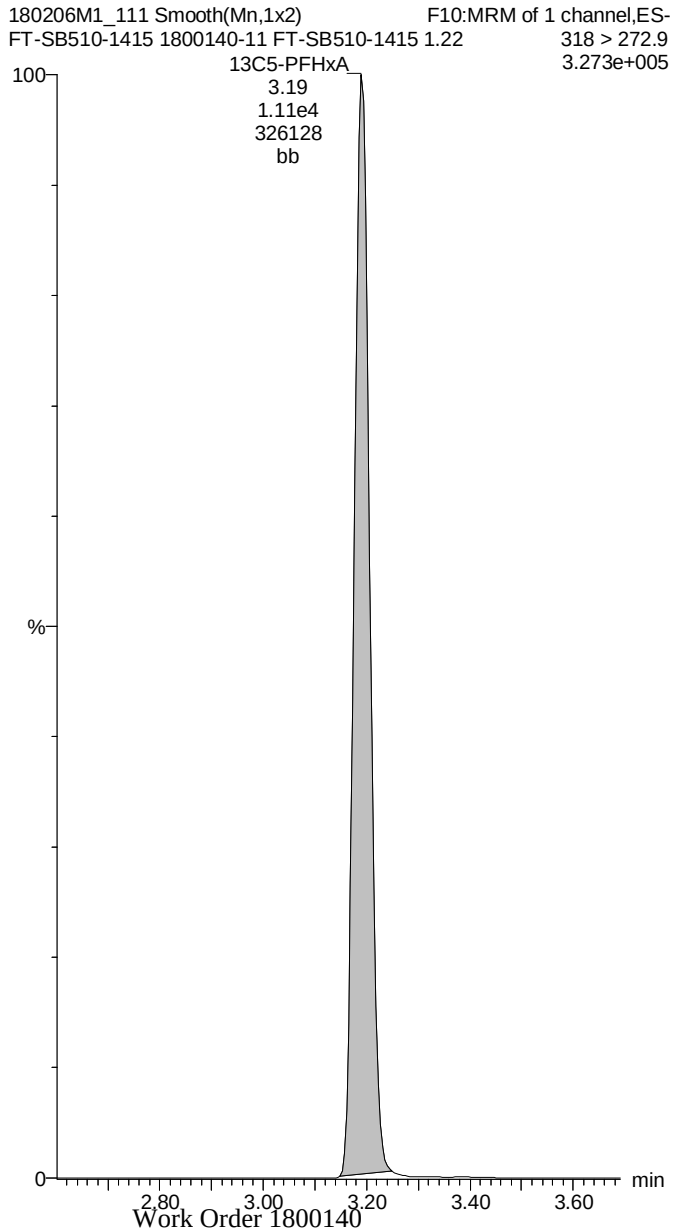
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-111.qld

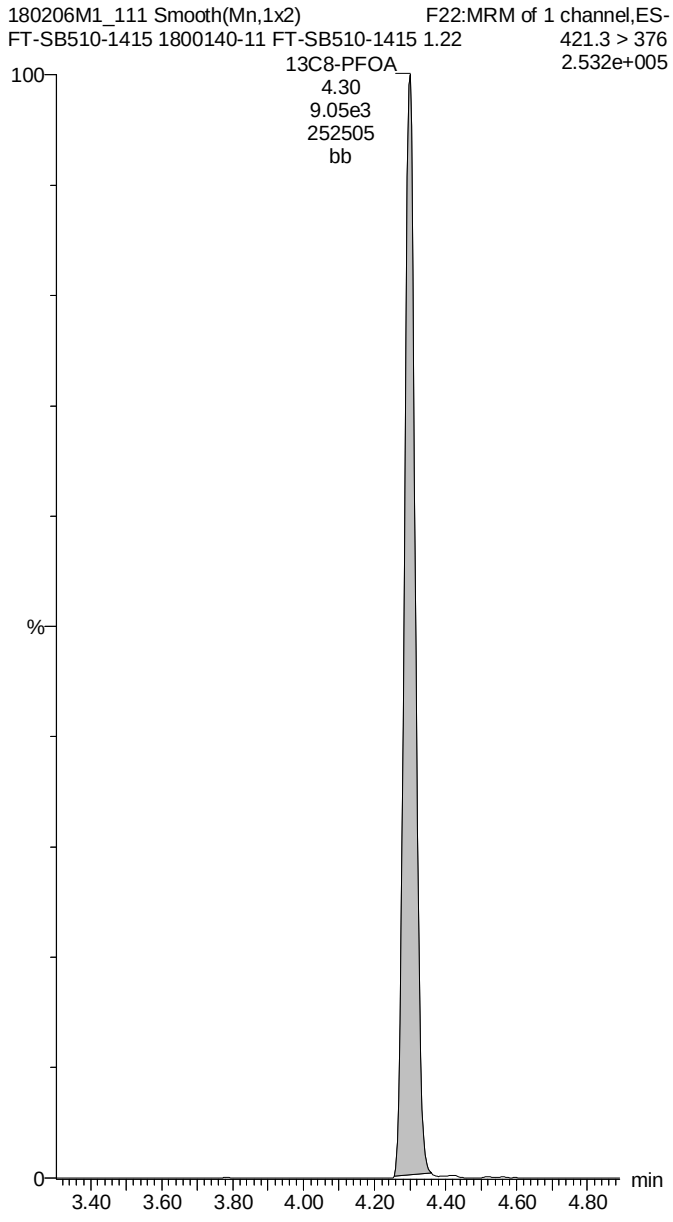
Last Altered: Tuesday, February 13, 2018 09:24:17 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:25:07 Pacific Standard Time

Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

13C5-PFHxA



13C8-PFOA



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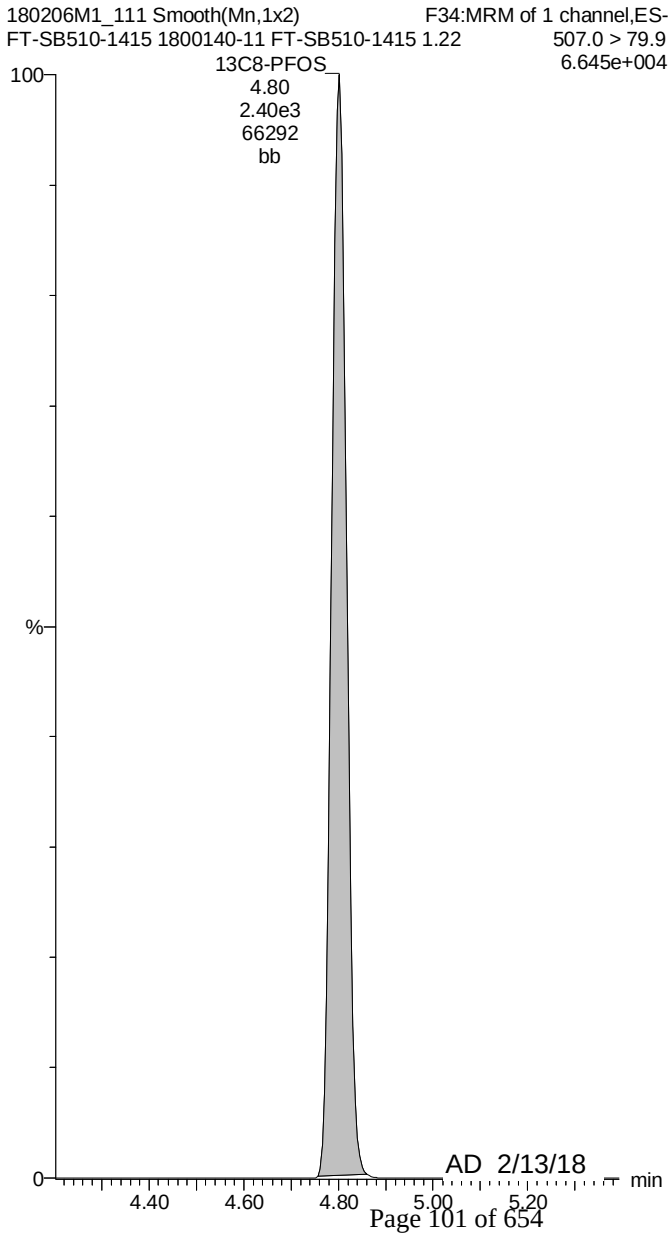

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-112.qld

Last Altered: Tuesday, February 13, 2018 09:36:47 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:39:24 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.30e3	1.0742		2.98				
2	11	L-PFOA	413 > 368.7	2.23e3	1.10e4	1.0742		4.30	4.30	2.53	2.36	
3	16	L-PFOS	499 > 79.9	1.47e2	2.35e3	1.0742		5.11	4.80	0.779	0.708	
4	36	13C3-PFBS	302. > 98.8	1.30e3	1.10e4	1.0742	0.109	2.98	2.70	1.48	12.7	108.8
5	41	13C2-PFOA	414.9 > 369.7	1.10e4	1.00e4	1.0742	1.069	4.30	4.30	13.7	12.0	102.8
6	44	13C8-PFOS	507.0 > 79.9	2.35e3	2.47e3	1.0742	1.041	5.11	4.80	11.9	10.6	91.4
7	58	13C5-PFHxA	318 > 272.9	1.10e4	1.10e4	1.0742	1.000	3.48	3.19	12.5	11.6	100.0
8	60	13C8-PFOA	421.3 > 376	1.00e4	1.00e4	1.0742	1.000	4.30	4.30	12.5	11.6	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-112.qld

Last Altered: Tuesday, February 13, 2018 09:36:47 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:39:38 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.47e3	2.47e3	1.0742	1.000	5.11	4.80	12.5	11.6	100.0
2	66	Total PFOA	413 > 368.7	2.49e3	1.10e4	1.0742		4.30		2.83	2.53	
3	67	Total PFOS	499 > 79.9	1.47e2	2.35e3	1.0742		5.11		0.779	0.708	

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-112.qld

Last Altered: Tuesday, February 13, 2018 09:36:47 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:39:38 Pacific Standard Time

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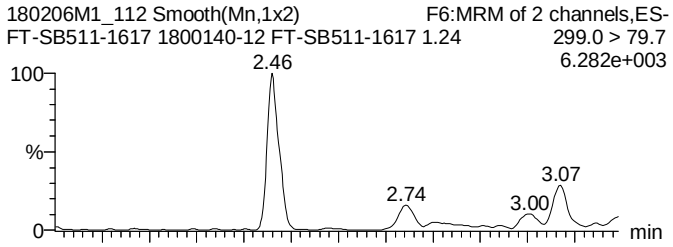
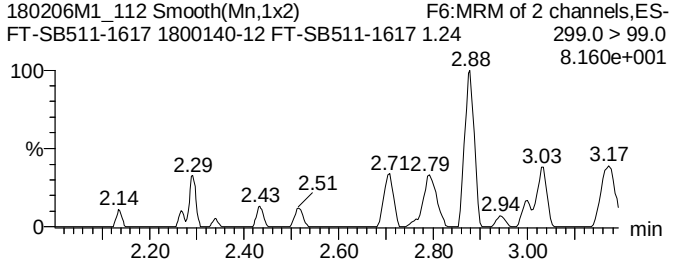
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

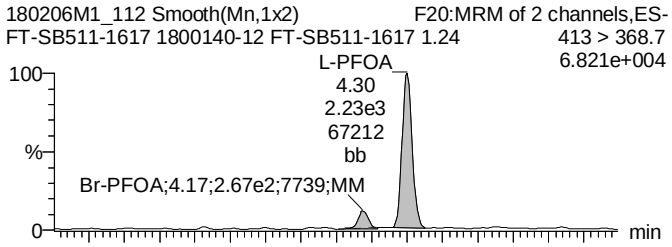
Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

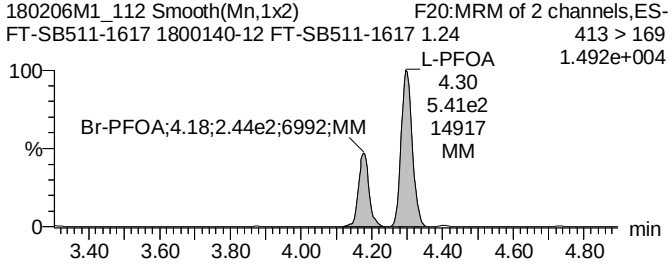
PFBS



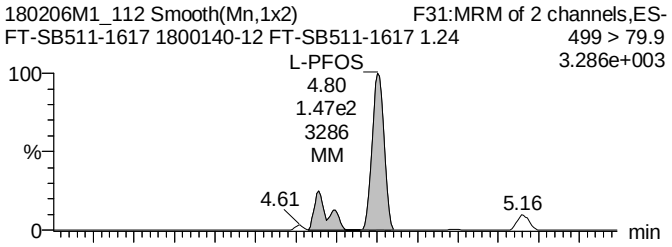


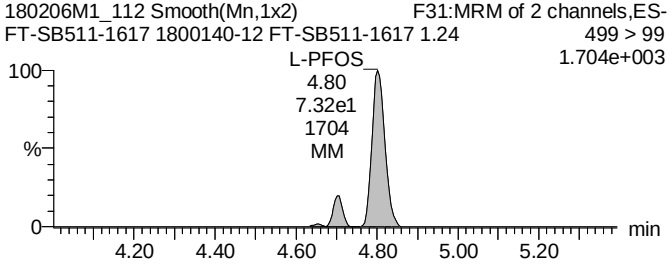
Total PFOA



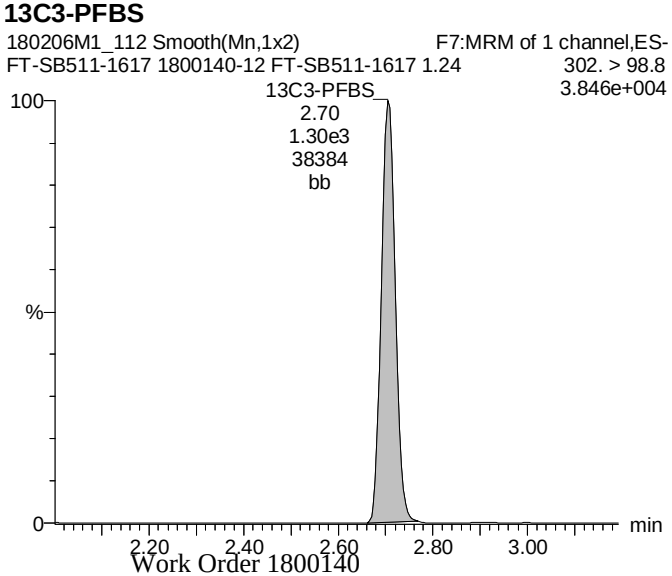


Total PFOS

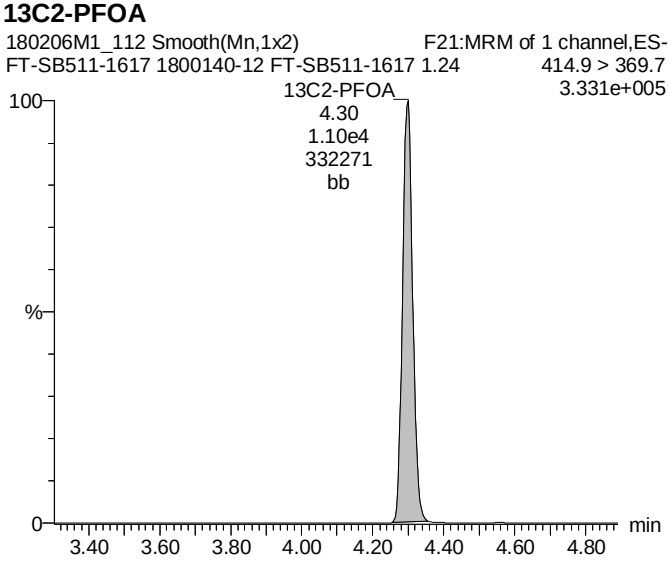




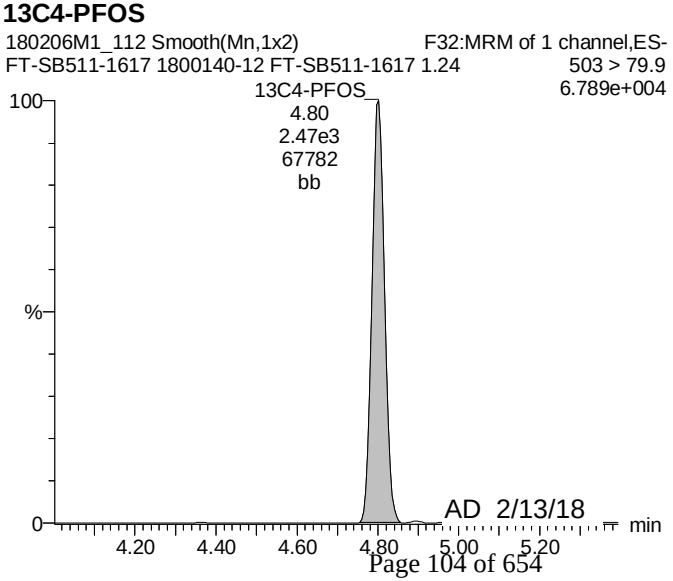
13C3-PFBS



13C2-PFOA



13C4-PFOS



Vista Analytical Laboratory

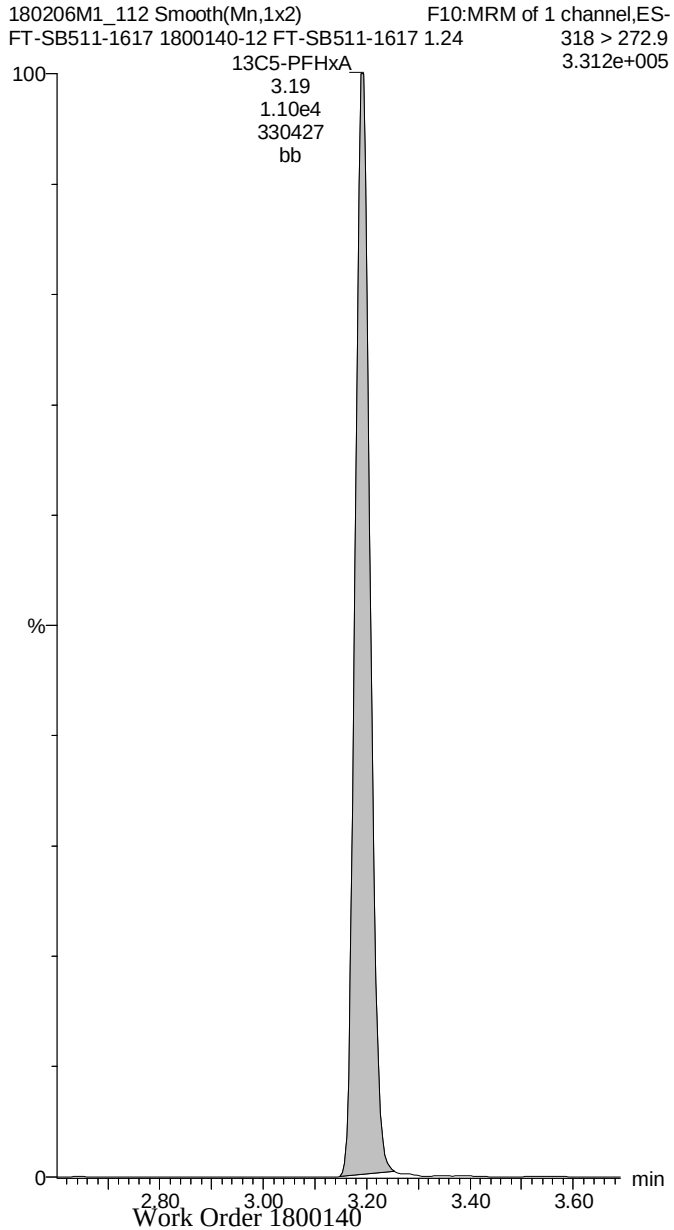
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-112.qld

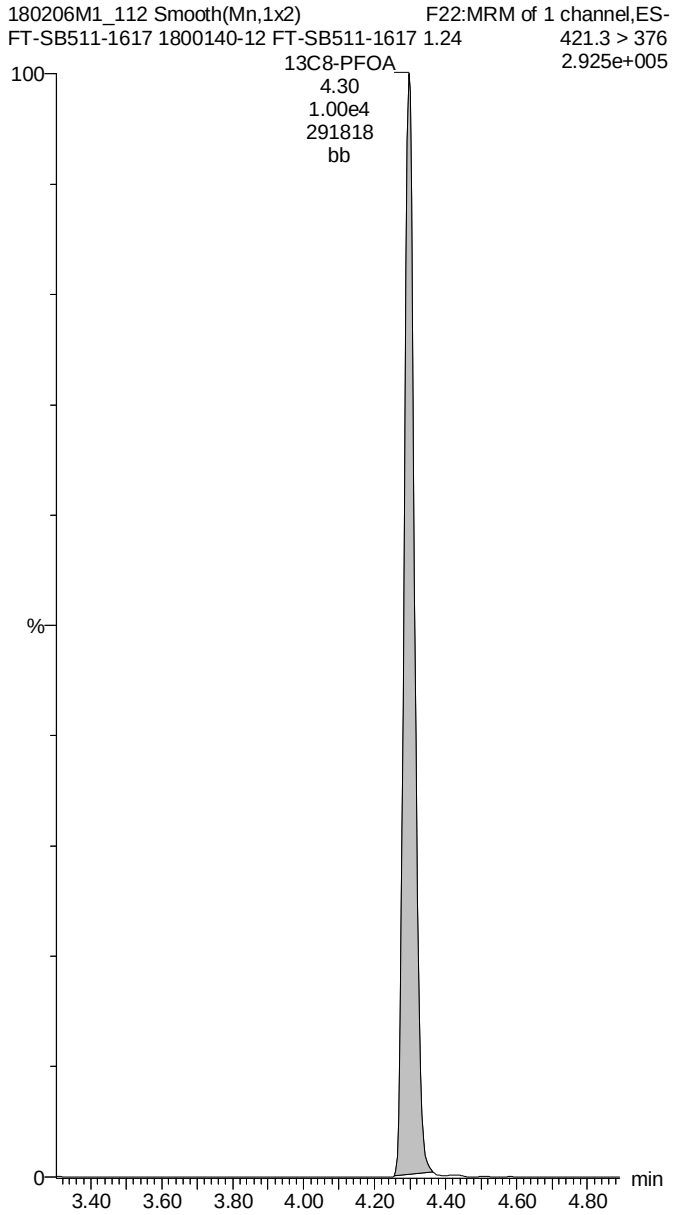
Last Altered: Tuesday, February 13, 2018 09:36:47 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:39:38 Pacific Standard Time

Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

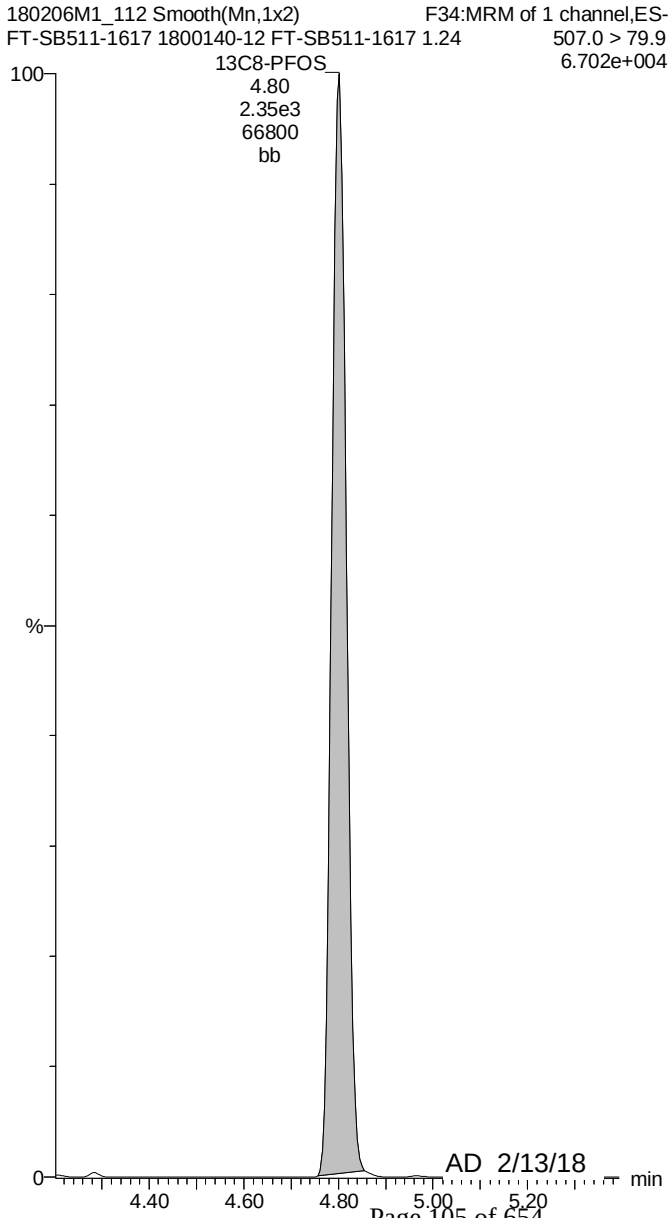
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-113.qld

Last Altered: Monday, February 12, 2018 10:59:03 Pacific Standard Time
Printed: Monday, February 12, 2018 10:59:37 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.30e3	1.0542		2.98				
2	11	L-PFOA	413 > 368.7	4.46e2	8.71e3	1.0542		4.30	4.30	0.640	0.510	
3	16	L-PFOS	499 > 79.9	2.15e2	1.56e3	1.0542		5.11	4.80	1.73	1.52	
4	36	13C3-PFBS	302. > 98.8	1.30e3	9.91e3	1.0542	0.109	2.98	2.70	1.65	14.3	120.6
5	41	13C2-PFOA	414.9 > 369.7	8.71e3	8.25e3	1.0542	1.069	4.30	4.30	13.2	11.7	98.7
6	44	13C8-PFOS	507.0 > 79.9	1.56e3	1.84e3	1.0542	1.041	5.11	4.80	10.6	9.63	81.2
7	58	13C5-PFHxA	318 > 272.9	9.91e3	9.91e3	1.0542	1.000	3.48	3.19	12.5	11.9	100.0
8	60	13C8-PFOA	421.3 > 376	8.25e3	8.25e3	1.0542	1.000	4.30	4.30	12.5	11.9	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-113.qld

Last Altered: Monday, February 12, 2018 10:59:03 Pacific Standard Time
Printed: Monday, February 12, 2018 10:59:43 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.84e3	1.84e3	1.0542	1.000	5.11	4.80	12.5	11.9	100.0
2	66	Total PFOA	413 > 368.7	4.46e2	8.71e3	1.0542		4.30		0.640	0.510	
3	67	Total PFOS	499 > 79.9	2.15e2	1.56e3	1.0542		5.11		1.73	1.52	

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

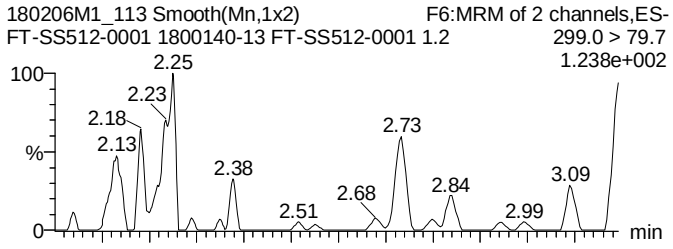
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-113.qld

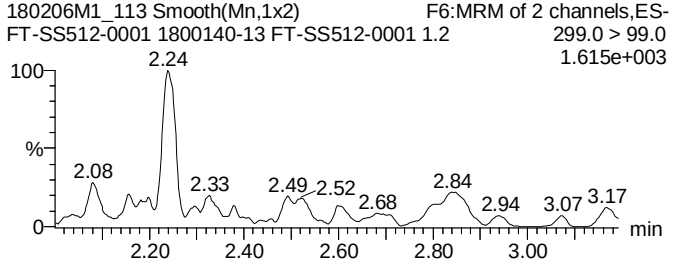
Last Altered: Monday, February 12, 2018 10:59:03 Pacific Standard Time
Printed: Monday, February 12, 2018 10:59:43 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

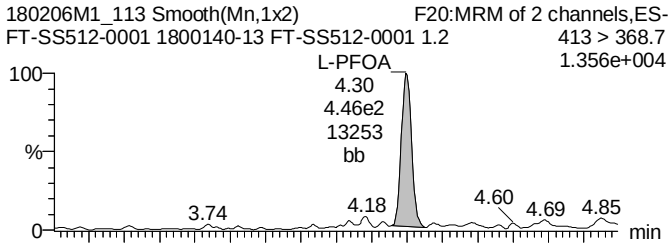
Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

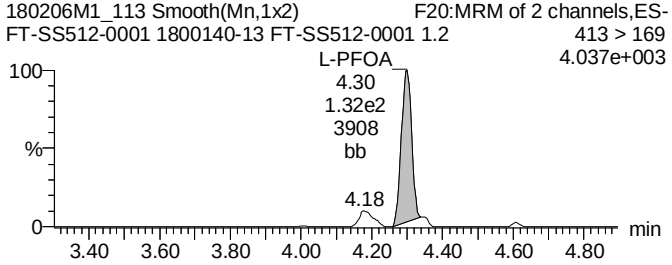
PFBS



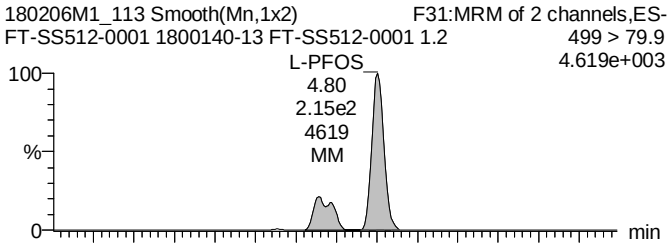


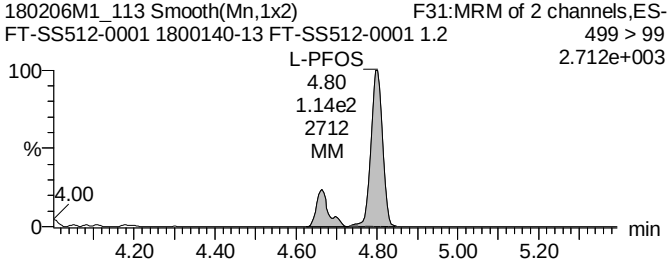
Total PFOA



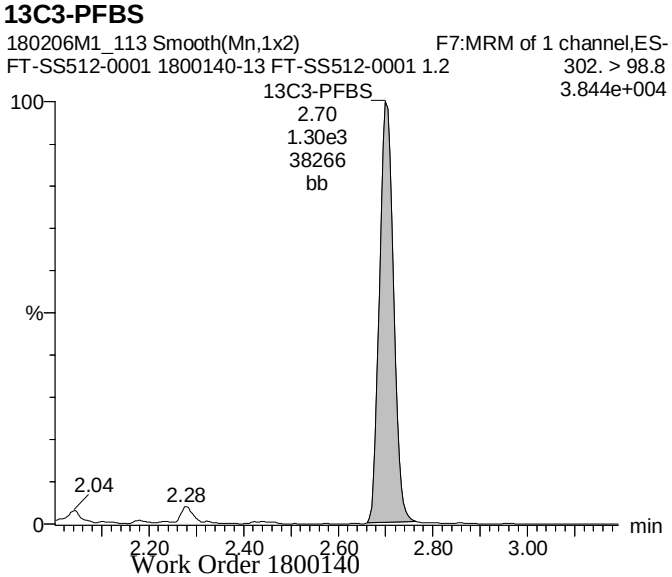


Total PFOS

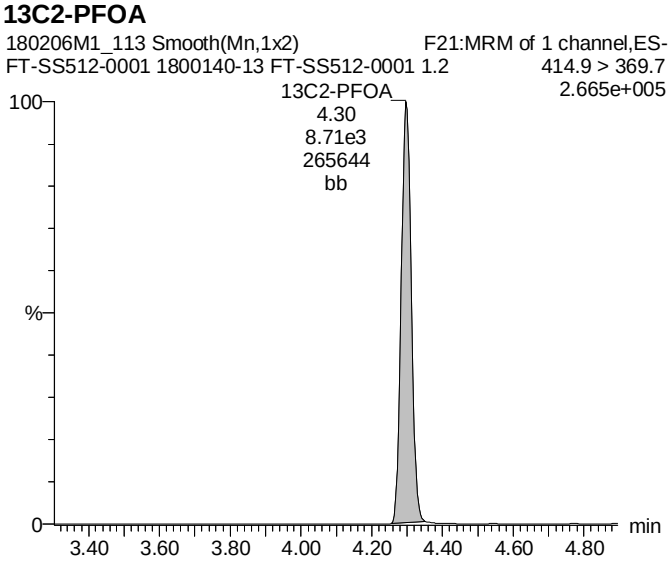




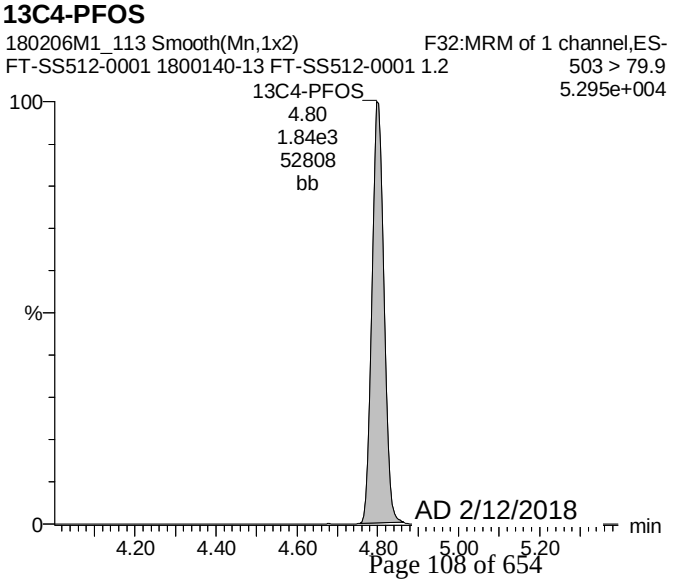
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

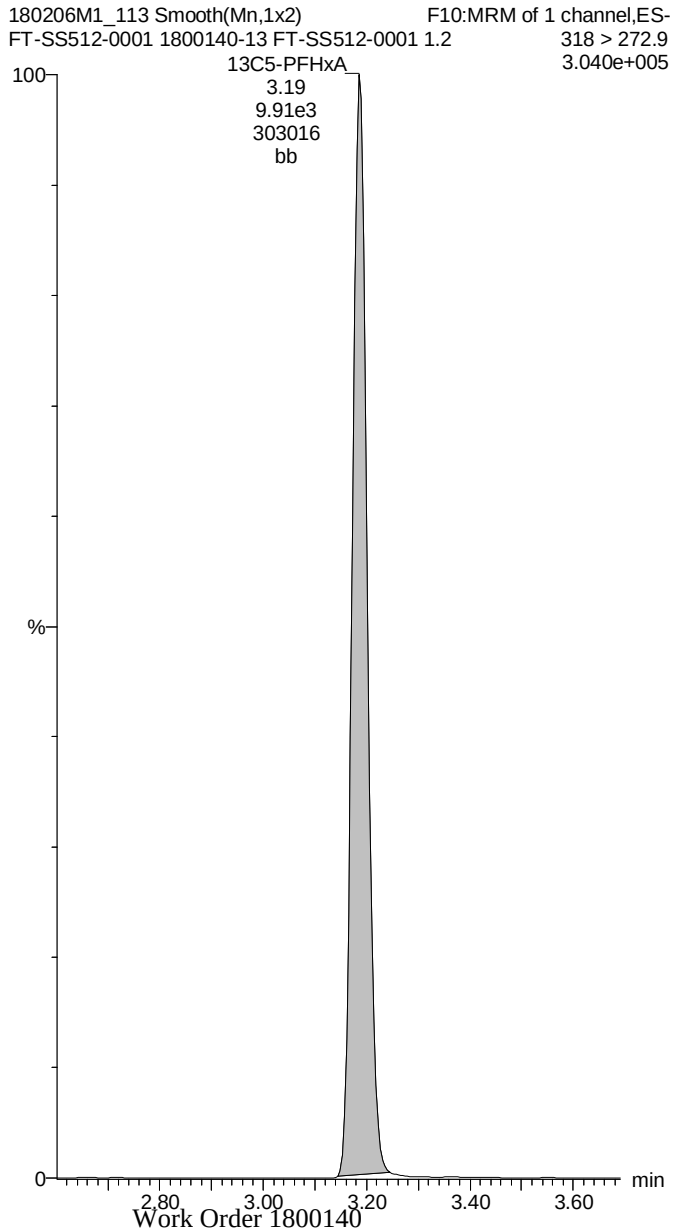
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-113.qld

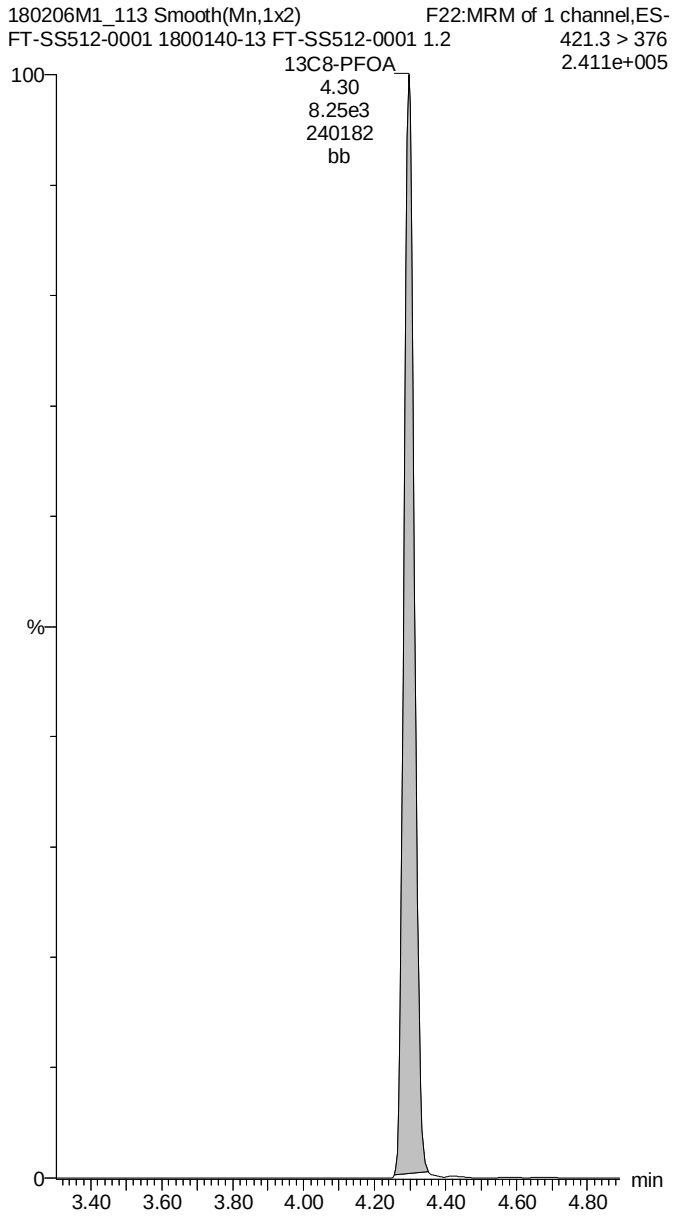
Last Altered: Monday, February 12, 2018 10:59:03 Pacific Standard Time
Printed: Monday, February 12, 2018 10:59:43 Pacific Standard Time

Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

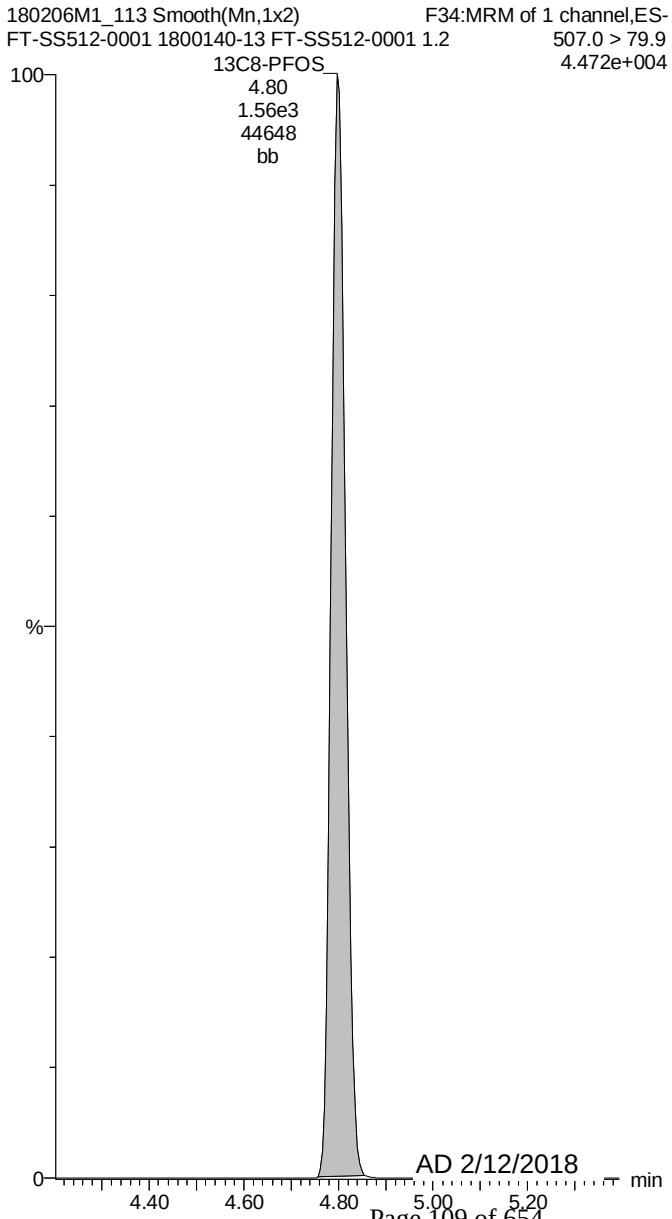
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-114.qld

Last Altered: Monday, February 12, 2018 11:03:06 Pacific Standard Time
Printed: Monday, February 12, 2018 11:03:52 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.30e3	1.1525		2.98				
2	11	L-PFOA	413 > 368.7		9.15e3	1.1525		4.45				
3	16	L-PFOS	499 > 79.9		1.06e3	1.1525		5.11				
4	36	13C3-PFBS	302. > 98.8	1.30e3	9.95e3	1.1525	0.109	2.98	2.70	1.63	12.9	119.2
5	41	13C2-PFOA	414.9 > 369.7	9.15e3	9.88e3	1.1525	1.069	4.61	4.30	11.6	9.39	86.6
6	44	13C8-PFOS	507.0 > 79.9	1.06e3	1.23e3	1.1525	1.041	5.11	4.80	10.8	8.99	82.9
7	58	13C5-PFHxA	318 > 272.9	9.95e3	9.95e3	1.1525	1.000	3.48	3.19	12.5	10.8	100.0
8	60	13C8-PFOA	421.3 > 376	9.88e3	9.88e3	1.1525	1.000	4.61	4.30	12.5	10.8	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-114.qld

Last Altered: Monday, February 12, 2018 11:03:06 Pacific Standard Time
Printed: Monday, February 12, 2018 11:03:58 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.23e3	1.23e3	1.1525	1.000	5.11	4.80	12.5	10.8	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	9.15e3	1.1525		4.61		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.06e3	1.1525		5.11		0.000		

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

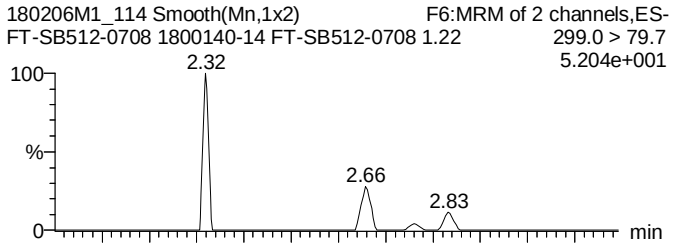
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-114.qld

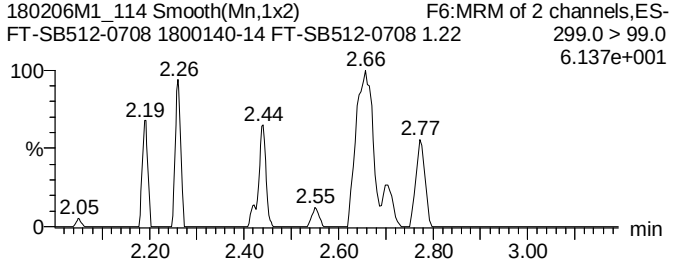
Last Altered: Monday, February 12, 2018 11:03:06 Pacific Standard Time
Printed: Monday, February 12, 2018 11:03:58 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

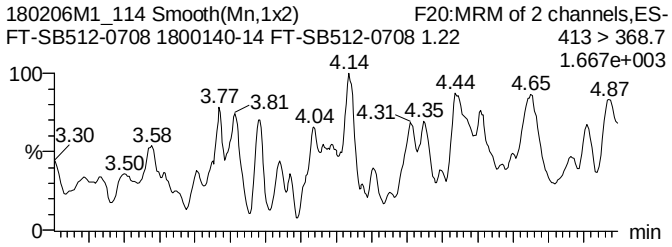
Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

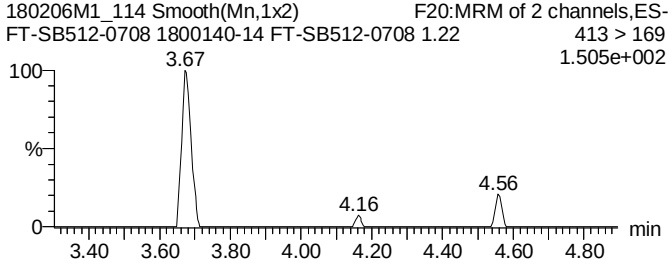
PFBS



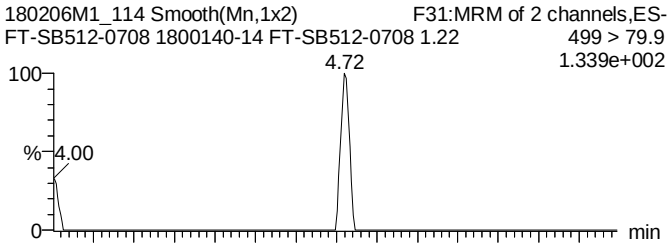


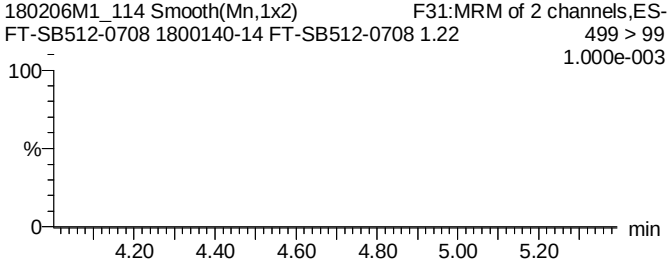
Total PFOA



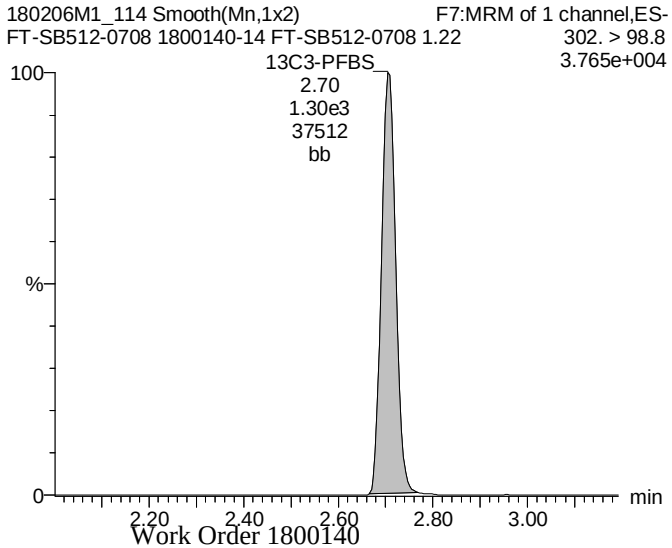


Total PFOS

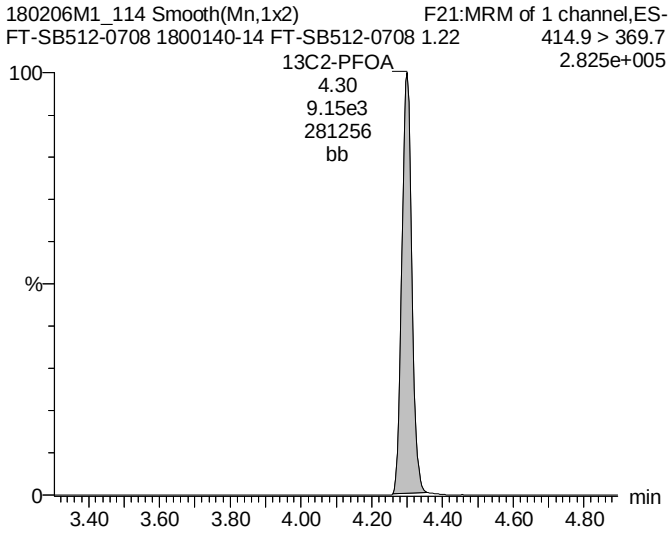




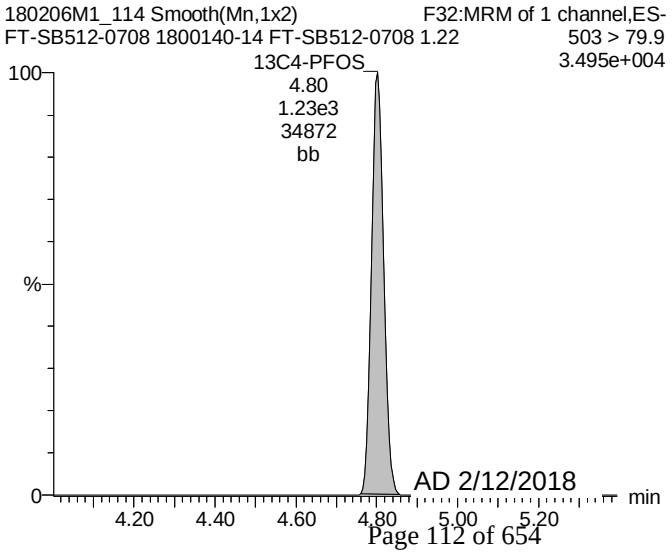
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

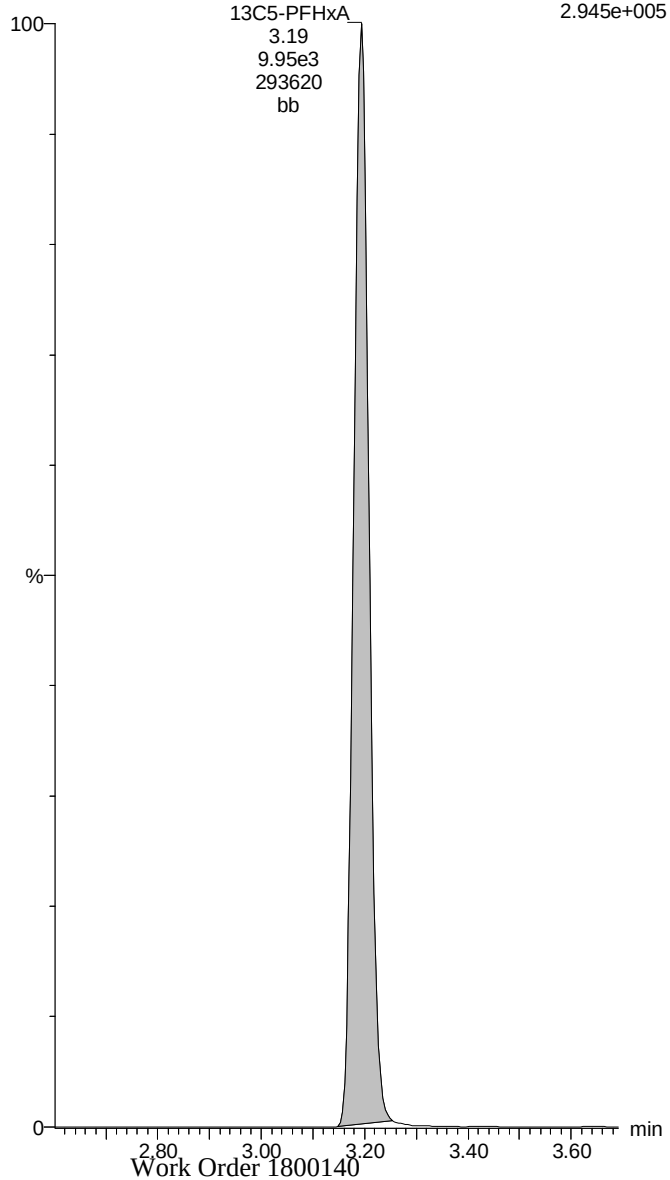
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-114.qld

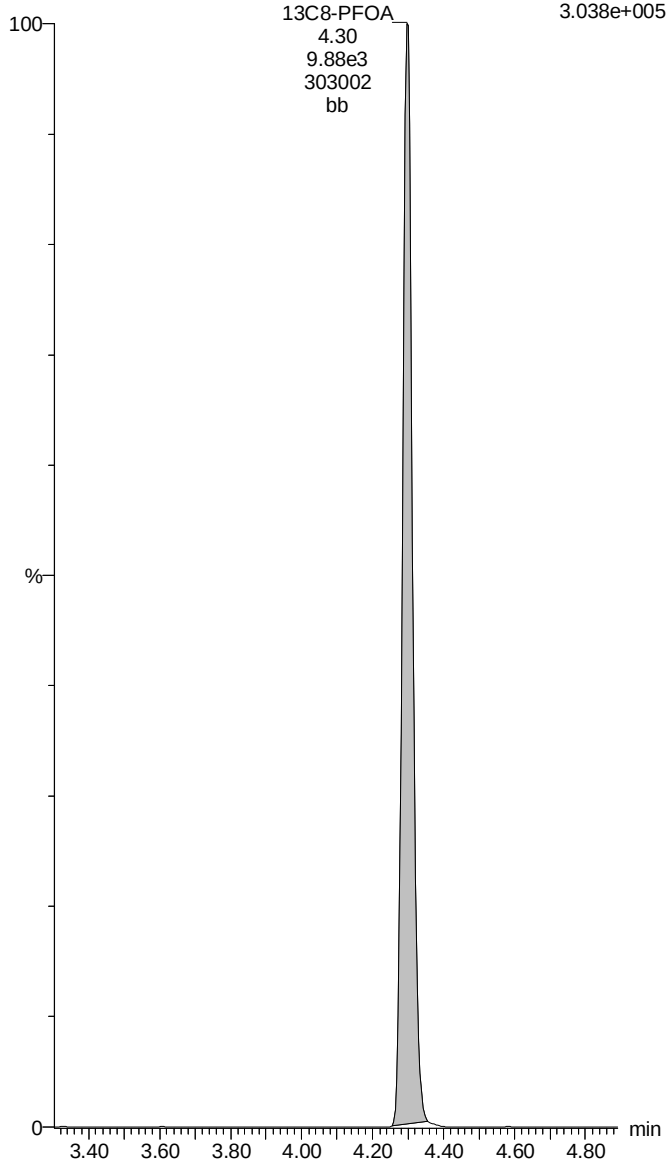
Last Altered: Monday, February 12, 2018 11:03:06 Pacific Standard Time
Printed: Monday, February 12, 2018 11:03:58 Pacific Standard Time

Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

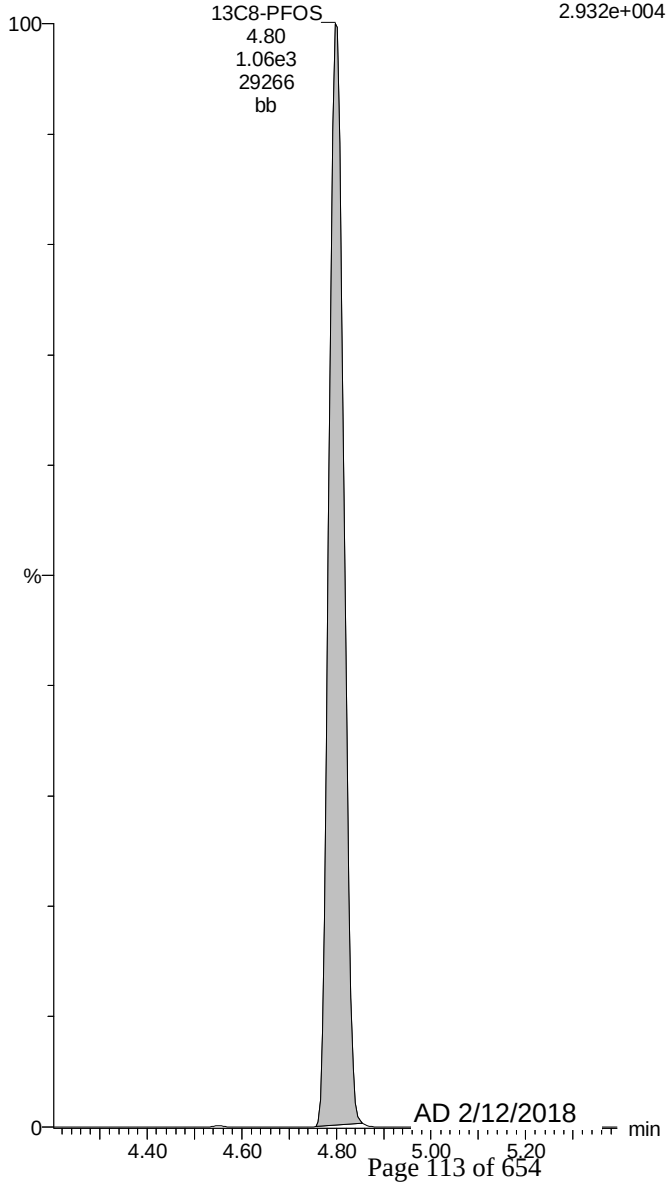
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-115.qld

Last Altered: Monday, February 12, 2018 11:05:28 Pacific Standard Time
Printed: Monday, February 12, 2018 11:06:10 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.26e3	1.0220		2.98				
2	11	L-PFOA	413 > 368.7		9.23e3	1.0220		4.45				
3	16	L-PFOS	499 > 79.9		9.71e2	1.0220		5.11				
4	36	13C3-PFBS	302. > 98.8	1.26e3	1.22e4	1.0220	0.109	2.98	2.70	1.30	11.6	95.0
5	41	13C2-PFOA	414.9 > 369.7	9.23e3	9.53e3	1.0220	1.069	4.61	4.30	12.1	11.1	90.5
6	44	13C8-PFOS	507.0 > 79.9	9.71e2	1.04e3	1.0220	1.041	5.11	4.80	11.7	11.0	89.9
7	58	13C5-PFHxA	318 > 272.9	1.22e4	1.22e4	1.0220	1.000	3.48	3.19	12.5	12.2	100.0
8	60	13C8-PFOA	421.3 > 376	9.53e3	9.53e3	1.0220	1.000	4.61	4.30	12.5	12.2	100.0

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-115.qld

Last Altered: Monday, February 12, 2018 11:05:28 Pacific Standard Time
Printed: Monday, February 12, 2018 11:06:19 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.04e3	1.04e3	1.0220	1.000	5.11	4.80	12.5	12.2	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	9.23e3	1.0220		4.61		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	9.71e2	1.0220		5.11		0.000		

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

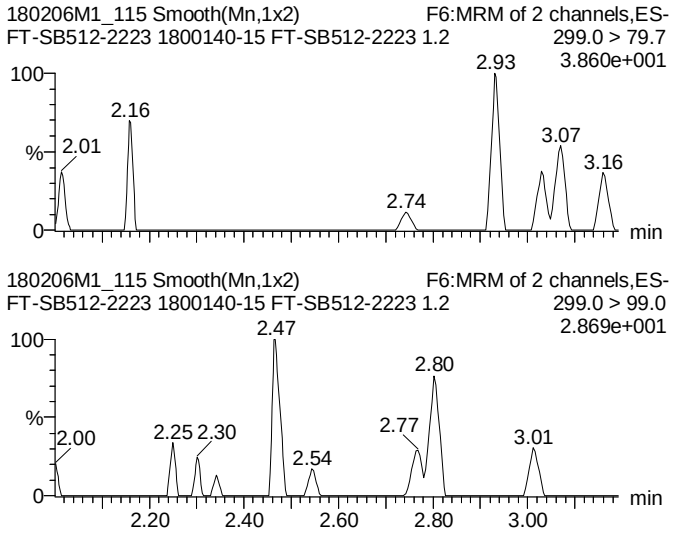
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-115.qld

Last Altered: Monday, February 12, 2018 11:05:28 Pacific Standard Time
Printed: Monday, February 12, 2018 11:06:19 Pacific Standard Time

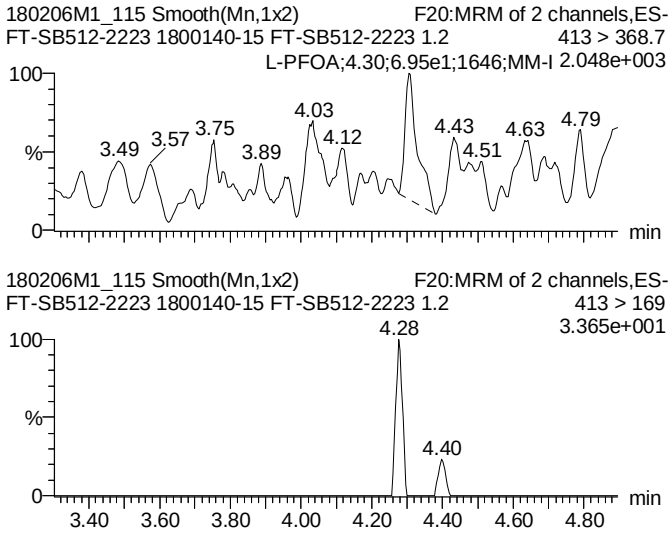
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

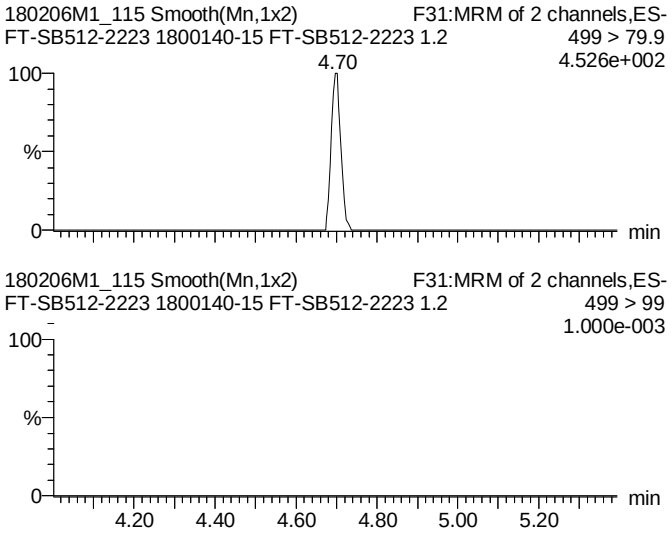
PFBS



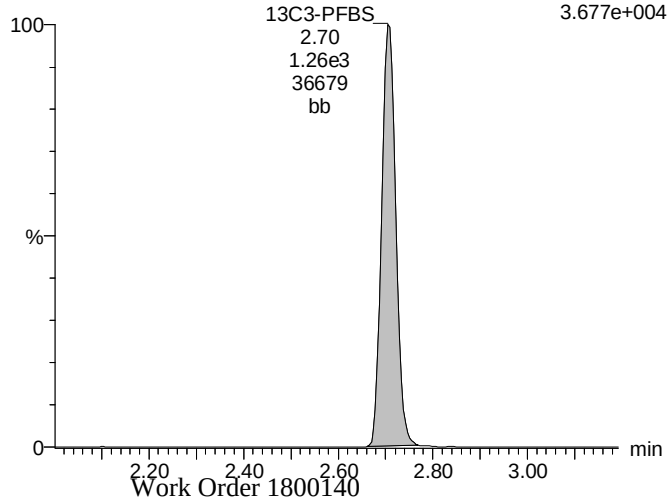
Total PFOA



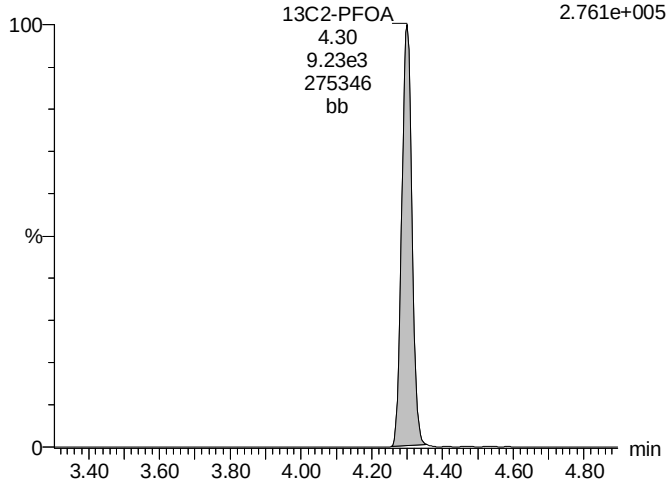
Total PFOS



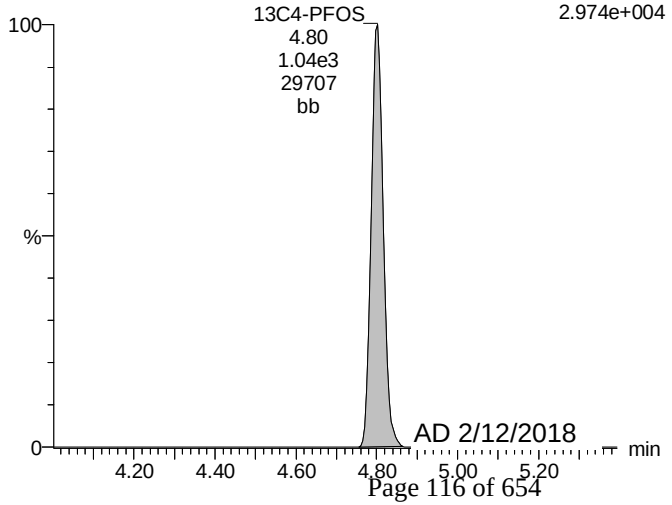
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

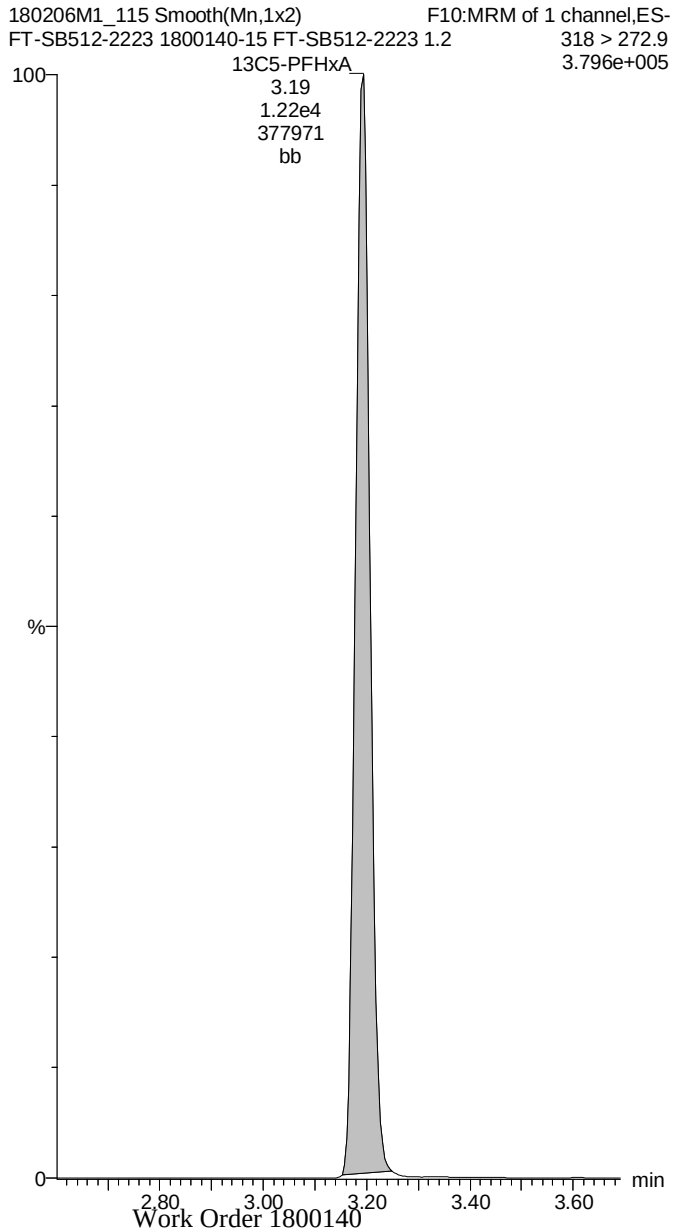
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-115.qld

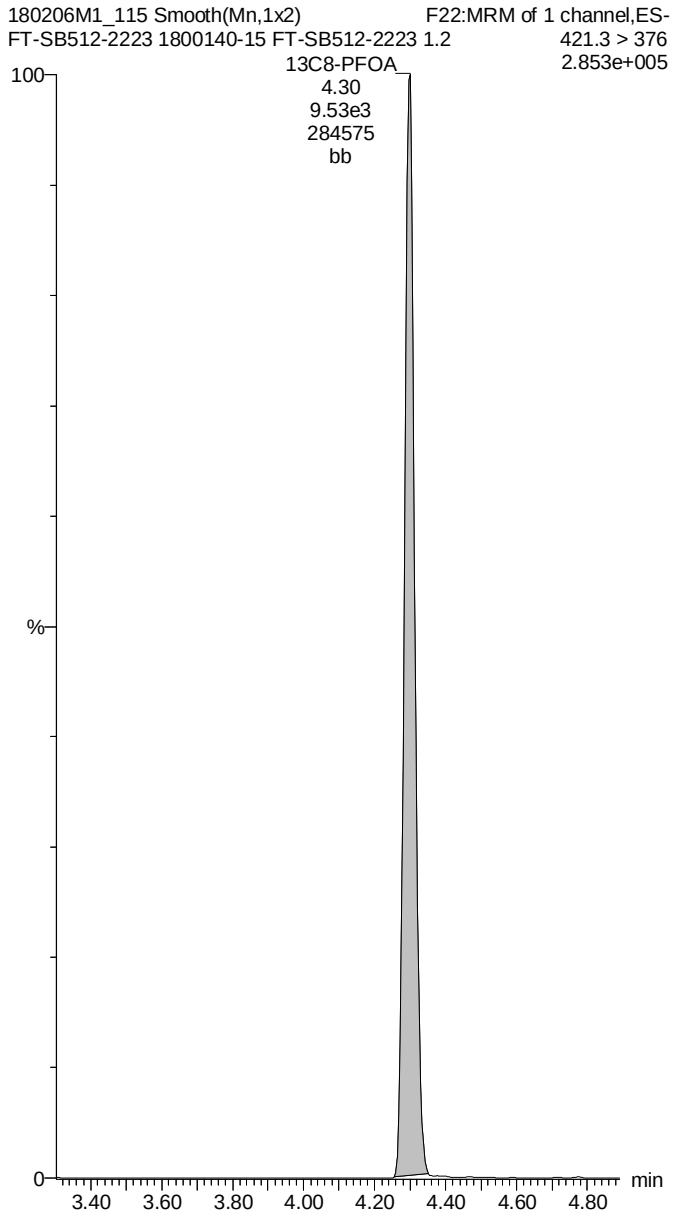
Last Altered: Monday, February 12, 2018 11:05:28 Pacific Standard Time
Printed: Monday, February 12, 2018 11:06:19 Pacific Standard Time

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

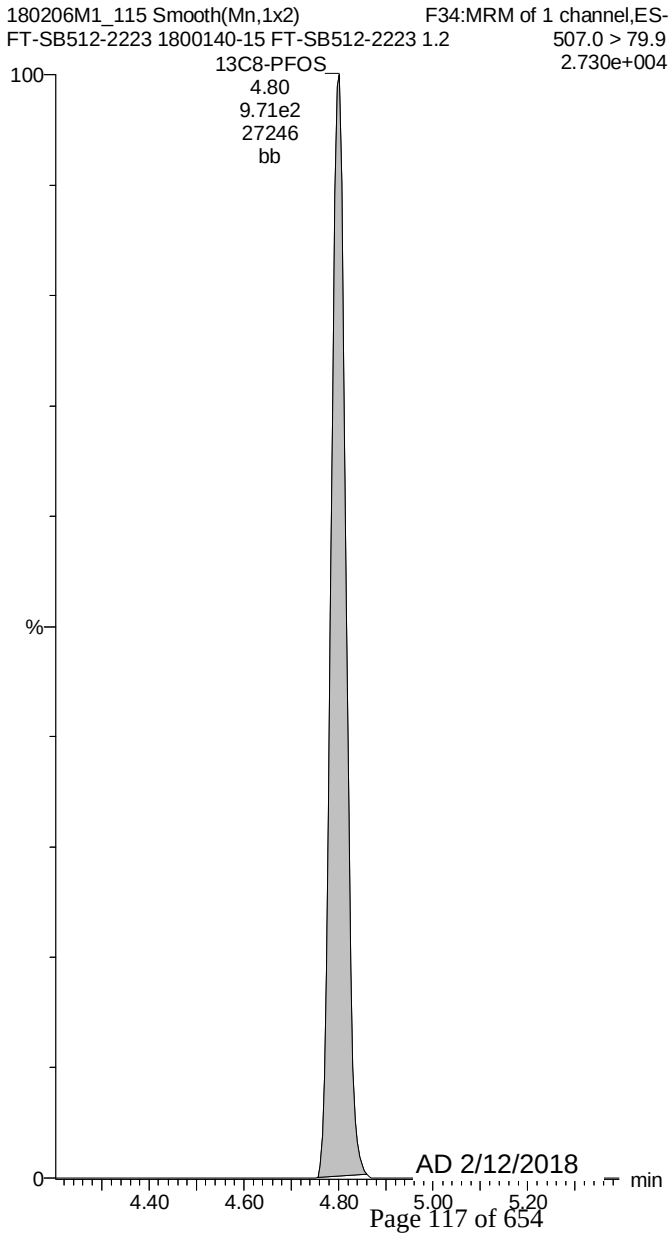
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-116.qld

Last Altered: Tuesday, February 13, 2018 13:38:58 Pacific Standard Time
Printed: Tuesday, February 13, 2018 13:40:38 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.39e3	0.9554		2.98				
2	11	L-PFOA	413 > 368.7	3.01e2	1.02e4	0.9554		4.30	4.29	0.367	0.259	
3	16	L-PFOS	499 > 79.9	6.79e1	2.99e3	0.9554		5.11	4.79	0.284	0.338	
4	36	13C3-PFBS	302. > 98.8	1.39e3	9.42e3	0.9554	0.109	2.98	2.70	1.84	17.6	134.8
5	41	13C2-PFOA	414.9 > 369.7	1.02e4	9.52e3	0.9554	1.069	4.30	4.29	13.4	13.2	100.6
6	44	13C8-PFOS	507.0 > 79.9	2.99e3	3.28e3	0.9554	1.041	5.11	4.79	11.4	11.4	87.4
7	58	13C5-PFHxA	318 > 272.9	9.42e3	9.42e3	0.9554	1.000	3.48	3.18	12.5	13.1	100.0
8	60	13C8-PFOA	421.3 > 376	9.52e3	9.52e3	0.9554	1.000	4.30	4.29	12.5	13.1	100.0

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-116.qld

Last Altered: Tuesday, February 13, 2018 13:38:58 Pacific Standard Time
Printed: Tuesday, February 13, 2018 13:40:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	3.28e3	3.28e3	0.9554	1.000	5.11	4.79	12.5	13.1	100.0
2	66	Total PFOA	413 > 368.7	3.01e2	1.02e4	0.9554		4.30		0.367	0.259	
3	67	Total PFOS	499 > 79.9	6.79e1	2.99e3	0.9554		5.11		0.284	0.338	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

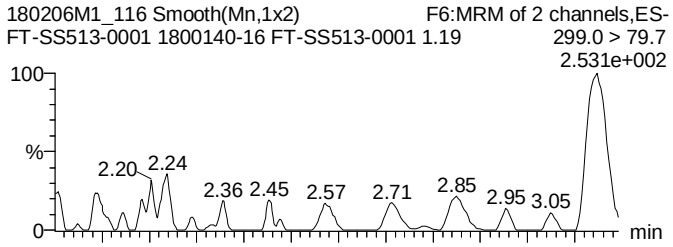
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-116.qld

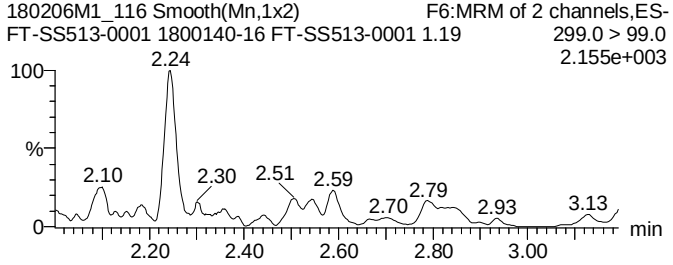
Last Altered: Tuesday, February 13, 2018 13:38:58 Pacific Standard Time
Printed: Tuesday, February 13, 2018 13:40:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

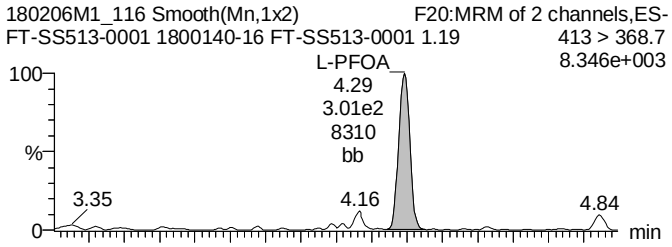
Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

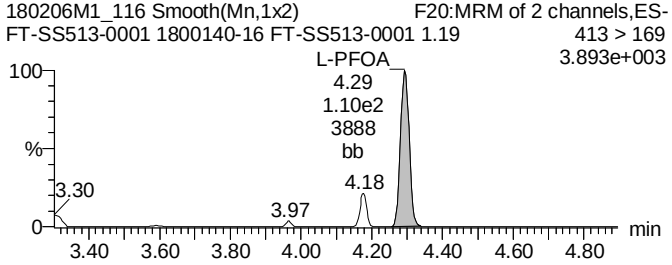
PFBS



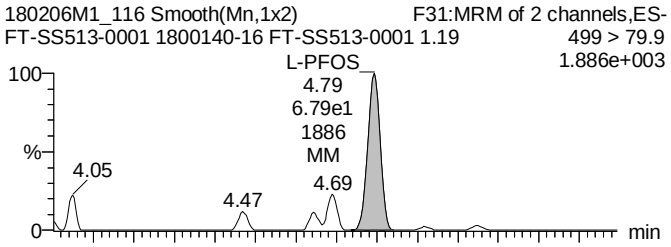


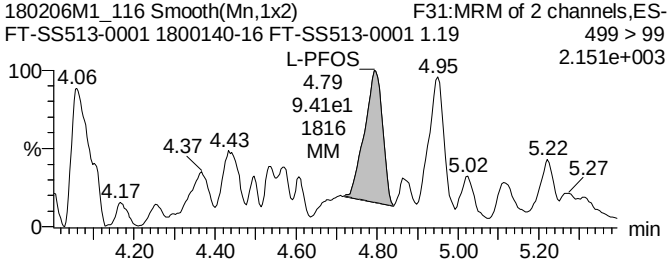
Total PFOA



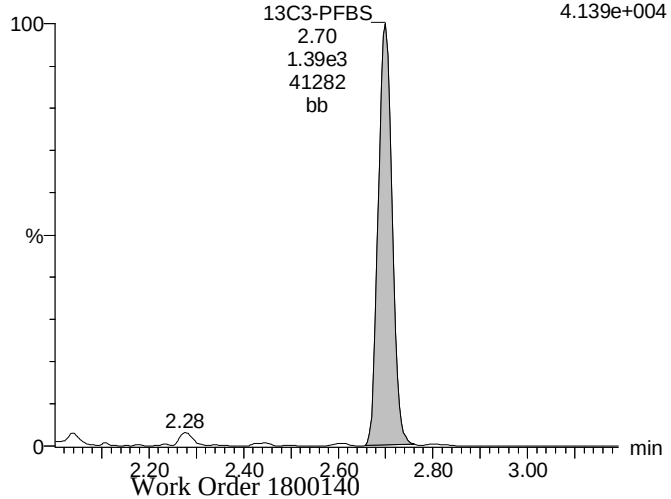


Total PFOS

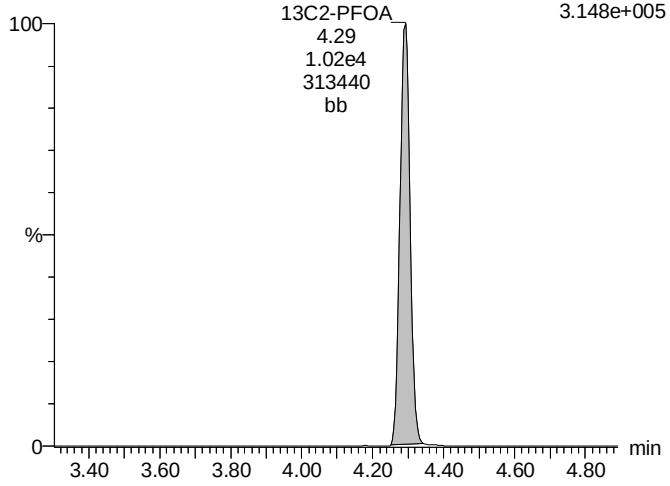




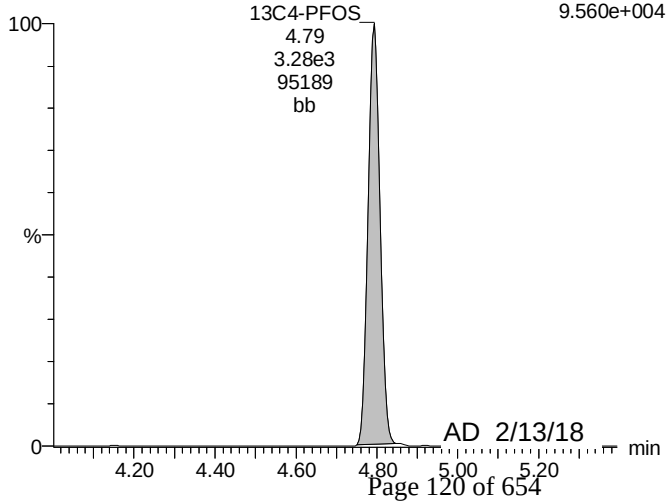
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/13/18

Vista Analytical Laboratory

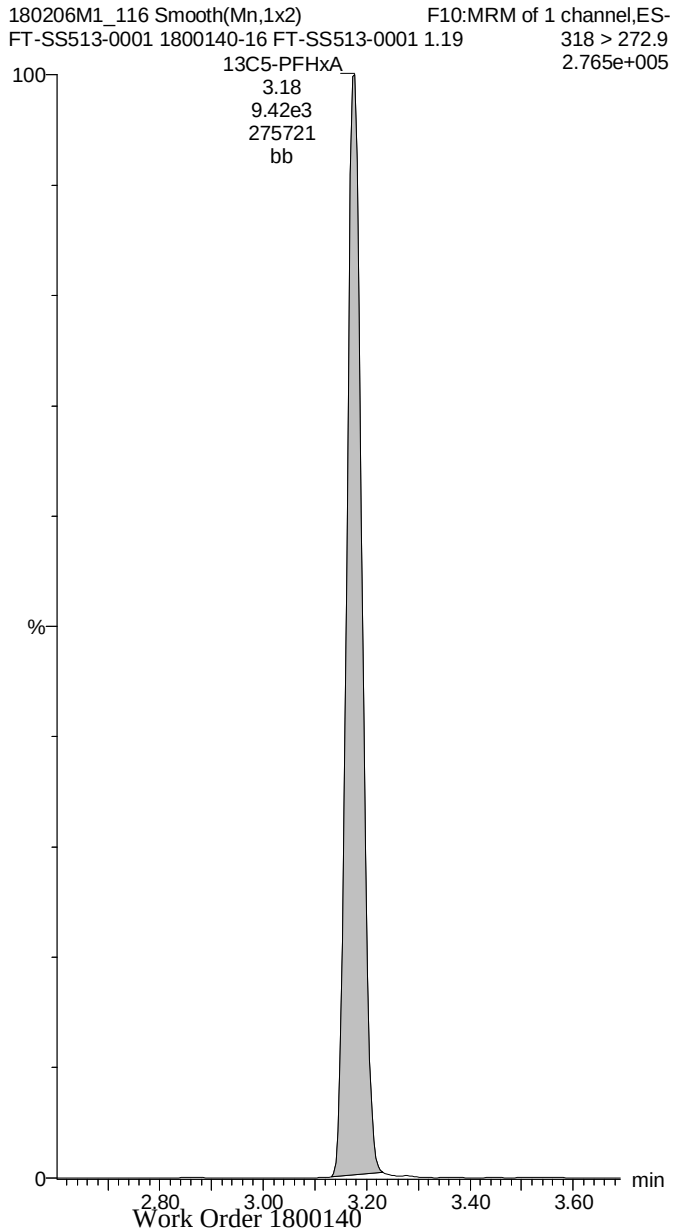
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-116.qld

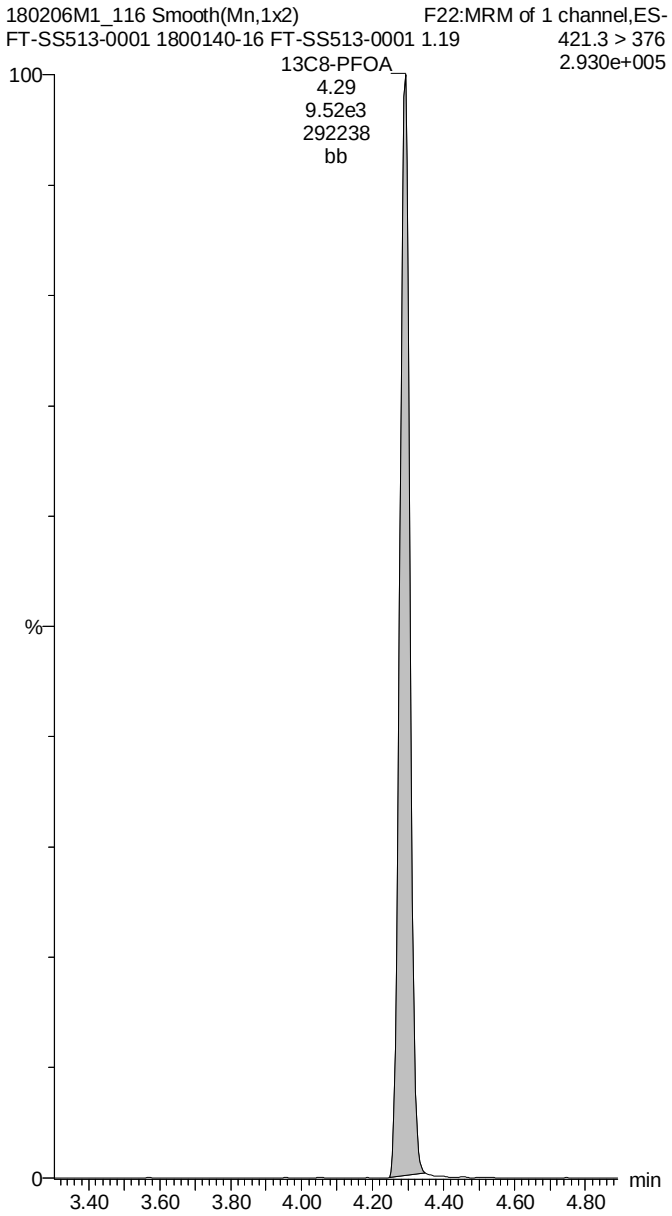
Last Altered: Tuesday, February 13, 2018 13:38:58 Pacific Standard Time
Printed: Tuesday, February 13, 2018 13:40:46 Pacific Standard Time

Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

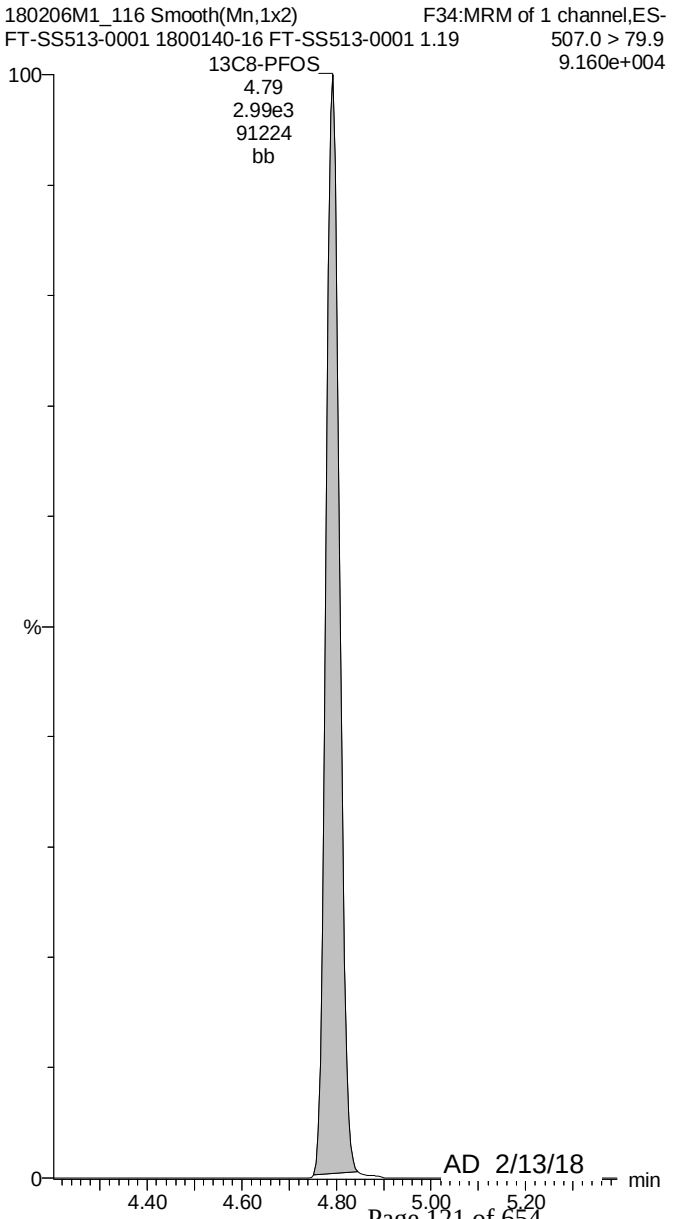
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-117.qld

Last Altered: Monday, February 12, 2018 11:11:15 Pacific Standard Time
Printed: Monday, February 12, 2018 11:12:11 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.38e3	1.1551		2.98				
2	11	L-PFOA	413 > 368.7		9.15e3	1.1551		4.45				
3	16	L-PFOS	499 > 79.9		7.44e2	1.1551		5.11				
4	36	13C3-PFBS	302. > 98.8	1.38e3	1.15e4	1.1551	0.109	2.98	2.70	1.50	11.9	109.6
5	41	13C2-PFOA	414.9 > 369.7	9.15e3	9.90e3	1.1551	1.069	4.61	4.30	11.6	9.36	86.5
6	44	13C8-PFOS	507.0 > 79.9	7.44e2	6.79e2	1.1551	1.041	5.11	4.80	13.7	11.4	105.2
7	58	13C5-PFHxA	318 > 272.9	1.15e4	1.15e4	1.1551	1.000	3.48	3.19	12.5	10.8	100.0
8	60	13C8-PFOA	421.3 > 376	9.90e3	9.90e3	1.1551	1.000	4.61	4.30	12.5	10.8	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-117.qld

Last Altered: Monday, February 12, 2018 11:11:15 Pacific Standard Time
Printed: Monday, February 12, 2018 11:12:17 Pacific Standard Time

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Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	6.79e2	6.79e2	1.1551	1.000	5.11	4.80	12.5	10.8	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	9.15e3	1.1551		4.61		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	7.44e2	1.1551		5.11		0.000		

AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-117.qld

Last Altered: Monday, February 12, 2018 11:11:15 Pacific Standard Time
Printed: Monday, February 12, 2018 11:12:17 Pacific Standard Time

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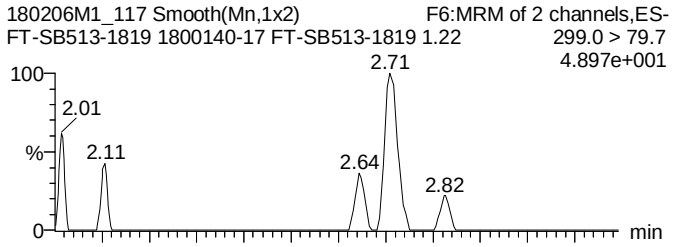
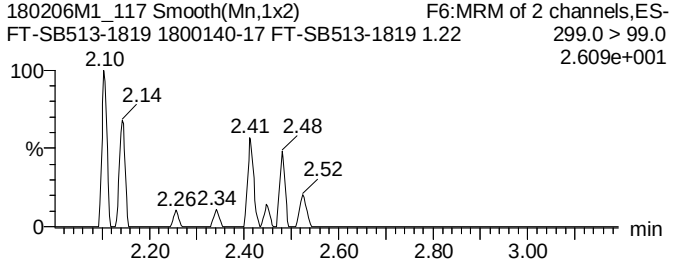
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

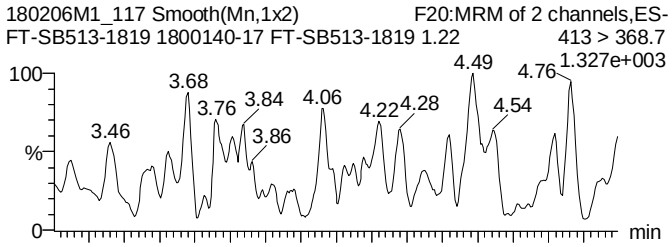
Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

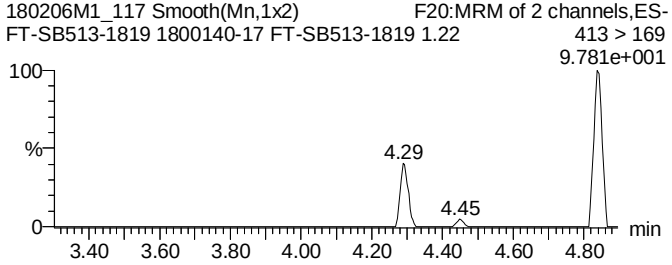
PFBS



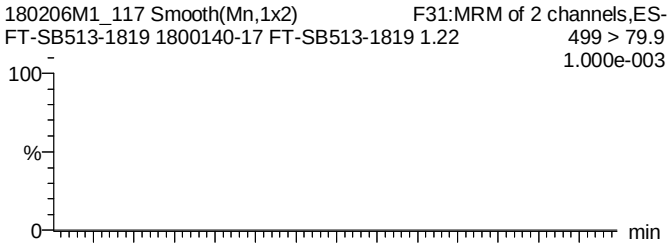


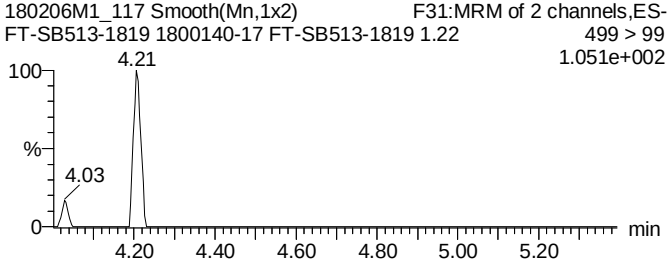
Total PFOA



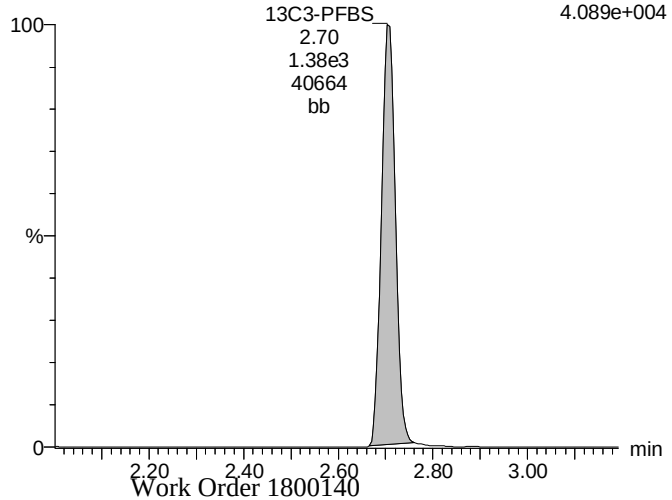


Total PFOS

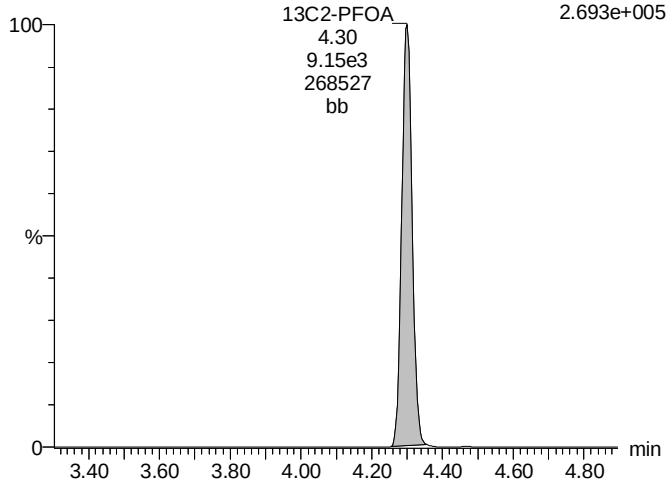




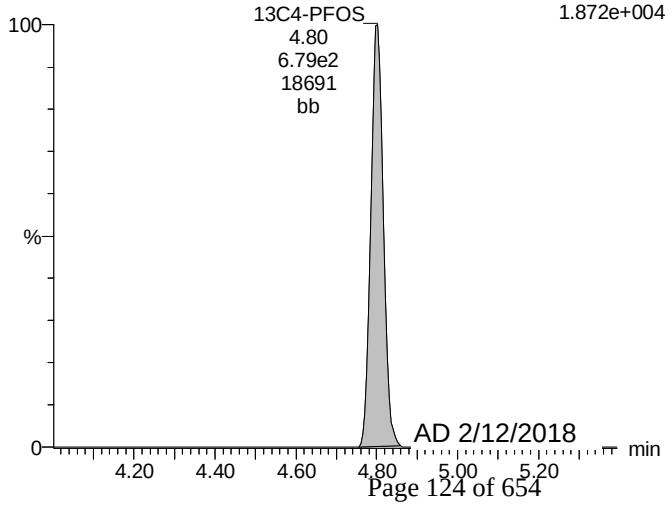
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/12/2018

Vista Analytical Laboratory

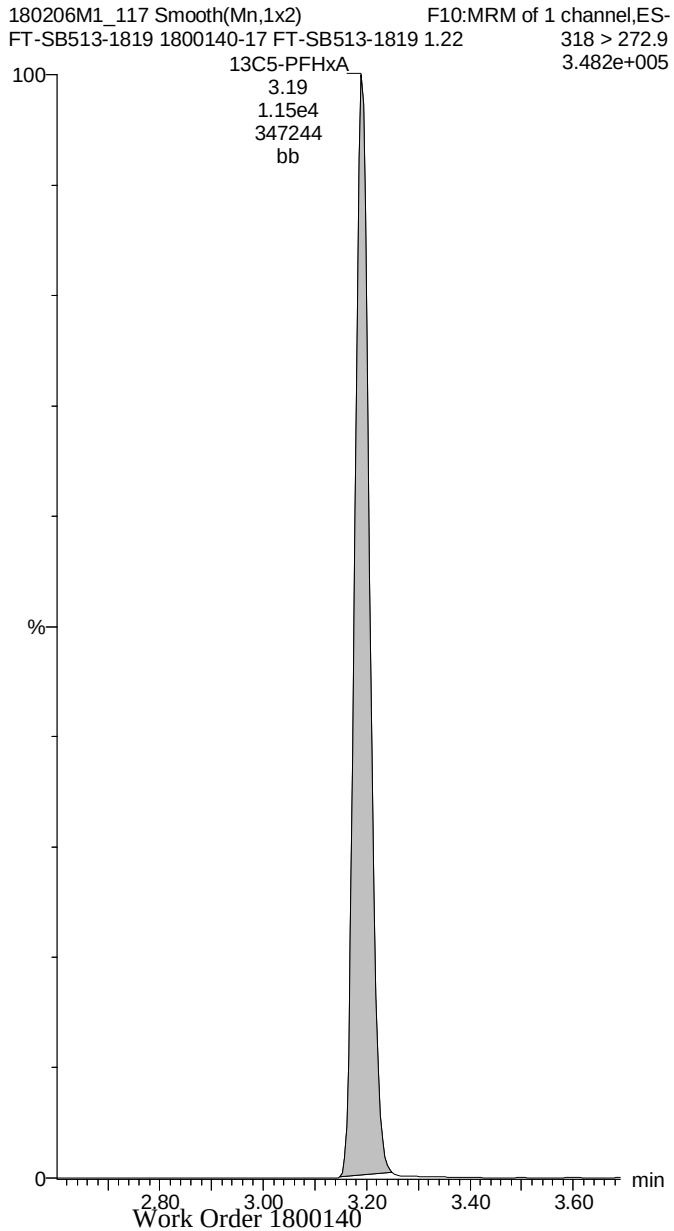
Rev'd: MM 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-117.qld

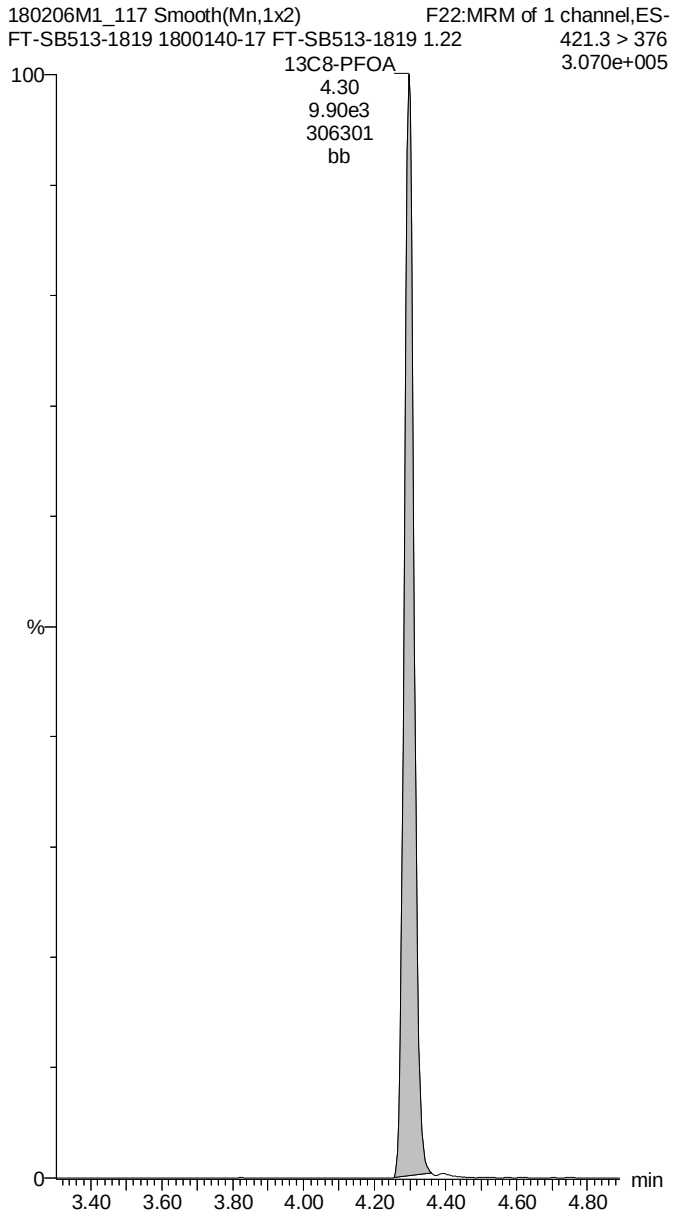
Last Altered: Monday, February 12, 2018 11:11:15 Pacific Standard Time
Printed: Monday, February 12, 2018 11:12:17 Pacific Standard Time

Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

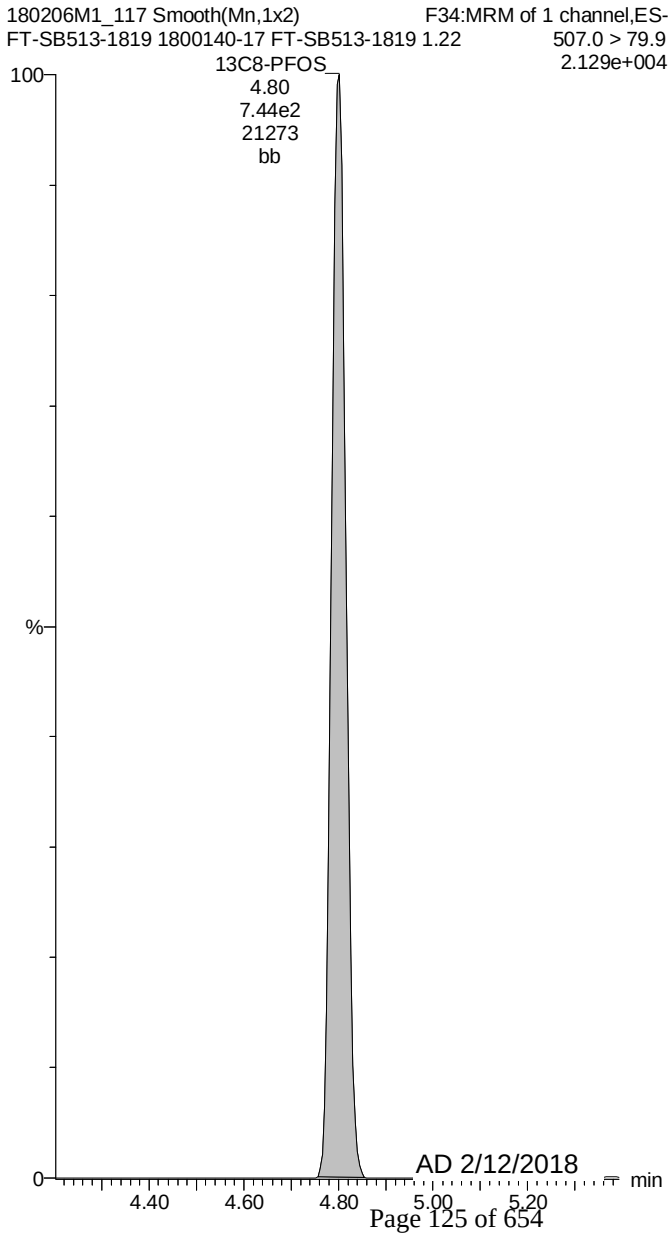
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/12/2018

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-118.qld

Last Altered: Tuesday, February 13, 2018 09:42:31 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:43:38 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.23e3	1.1408		2.98				
2	11	L-PFOA	413 > 368.7	4.96e2	9.66e3	1.1408		4.30	4.30	0.642	0.472	
3	16	L-PFOS	499 > 79.9	4.33e-1	1.42e3	1.1408		4.70	4.70	0.00380	0.0655	
4	36	13C3-PFBS	302. > 98.8	1.23e3	1.10e4	1.1408	0.109	2.98	2.71	1.40	11.2	102.3
5	41	13C2-PFOA	414.9 > 369.7	9.66e3	1.08e4	1.1408	1.069	4.30	4.30	11.2	9.14	83.4
6	44	13C8-PFOS	507.0 > 79.9	1.42e3	1.63e3	1.1408	1.041	4.70	4.80	10.9	9.16	83.6
7	58	13C5-PFHxA	318 > 272.9	1.10e4	1.10e4	1.1408	1.000	3.48	3.19	12.5	11.0	100.0
8	60	13C8-PFOA	421.3 > 376	1.08e4	1.08e4	1.1408	1.000	4.30	4.30	12.5	11.0	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-118.qld

Last Altered: Tuesday, February 13, 2018 09:42:31 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:43:53 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.63e3	1.63e3	1.1408	1.000	4.70	4.80	12.5	11.0	100.0
2	66	Total PFOA	413 > 368.7	6.70e2	9.66e3	1.1408		4.30		0.867	0.557	
3	67	Total PFOS	499 > 79.9	4.33e-1	1.42e3	1.1408		4.70		0.00380	0.0655	

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

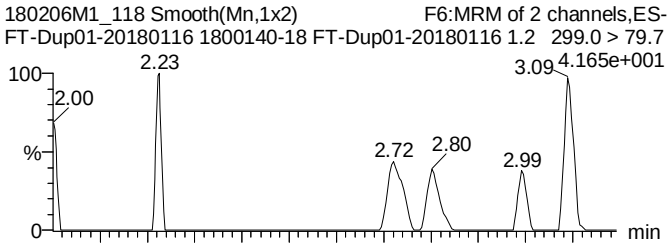
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-118.qld

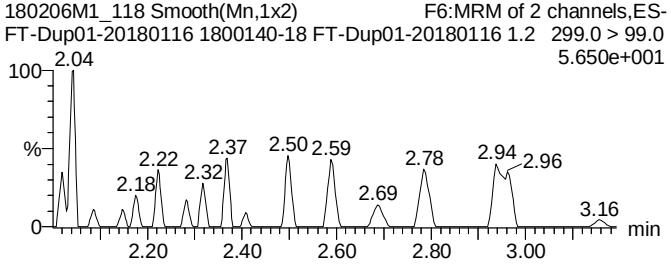
Last Altered: Tuesday, February 13, 2018 09:42:31 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:43:53 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

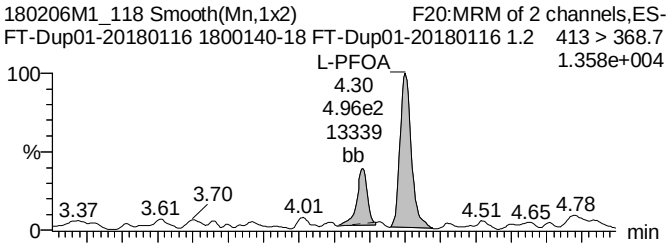
Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

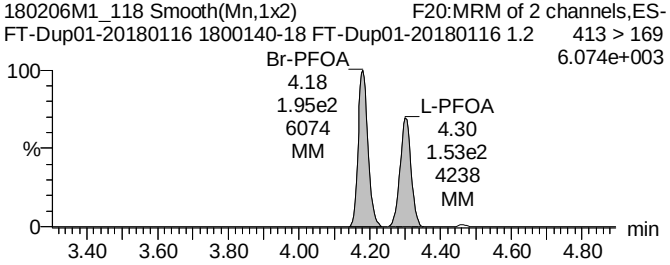
PFBS



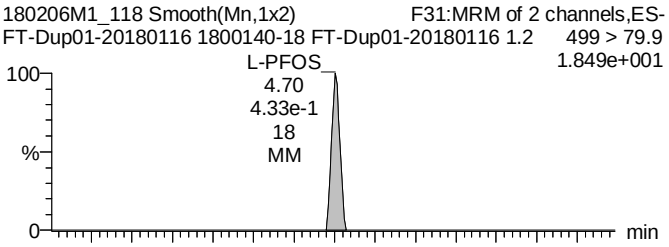


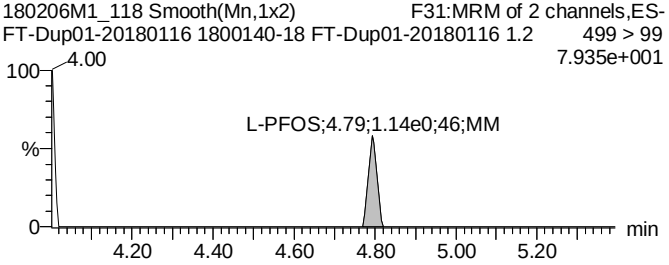
Total PFOA



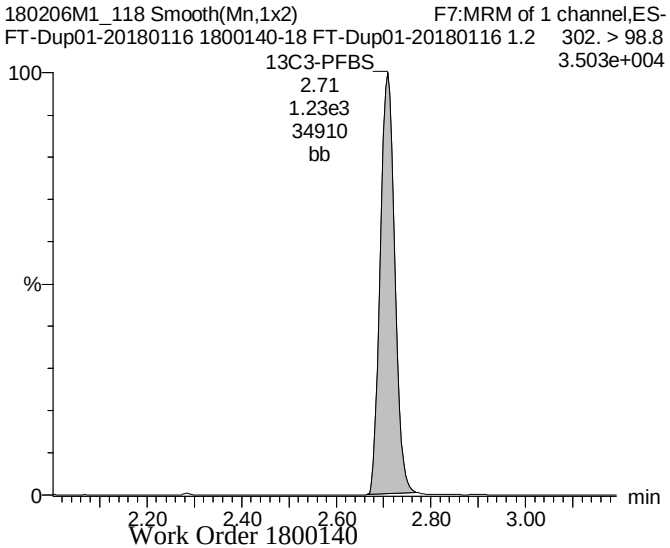


Total PFOS

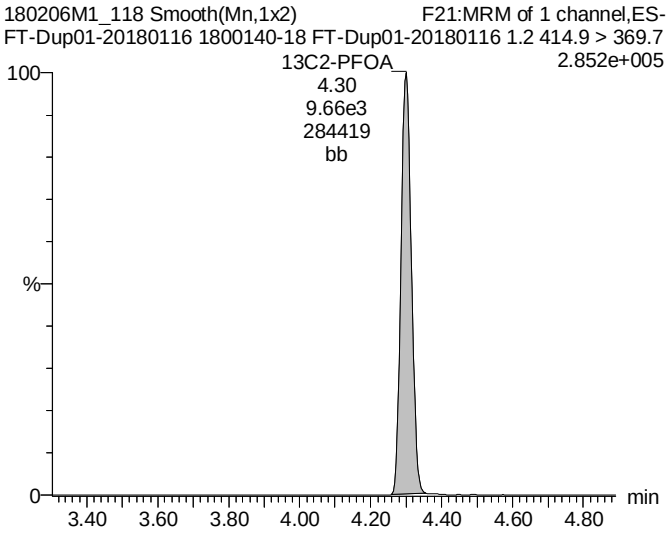




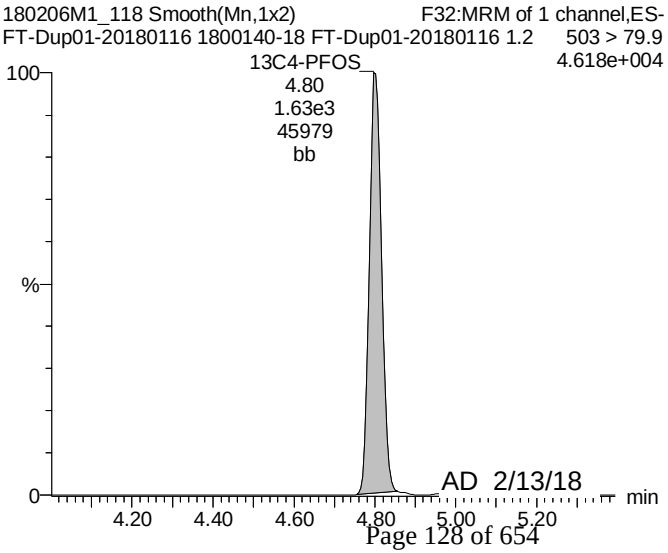
13C3-PFBS



13C2-PFOA



13C4-PFOS



Vista Analytical Laboratory

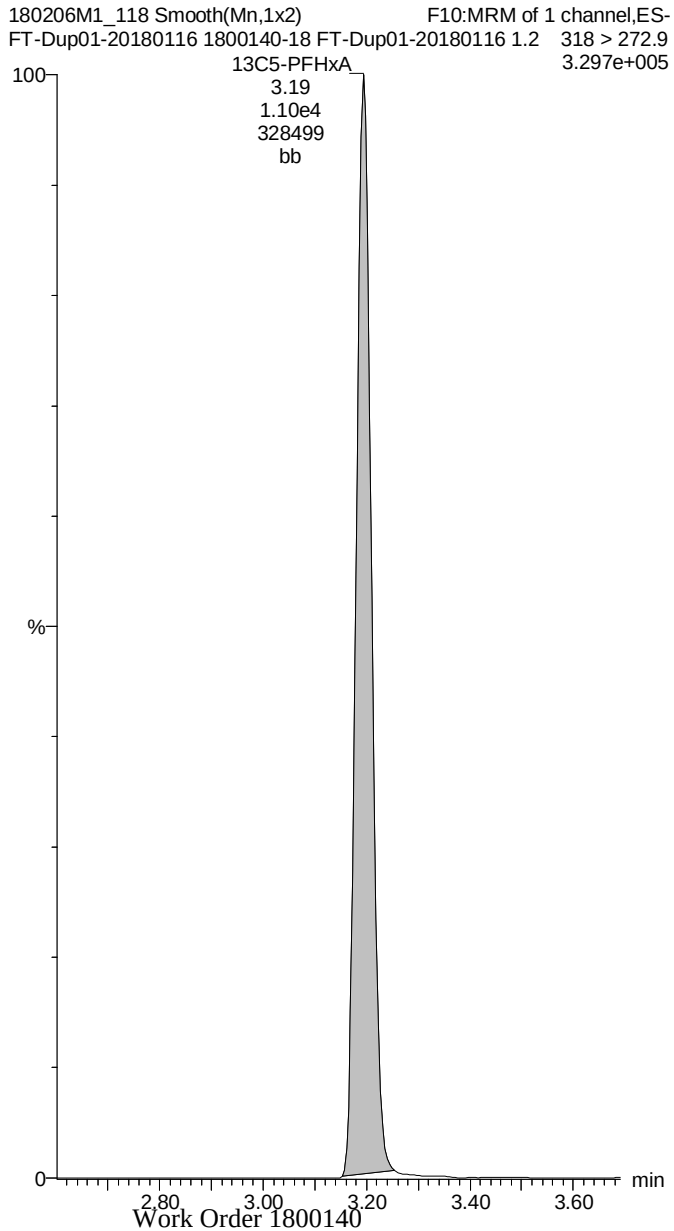
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-118.qld

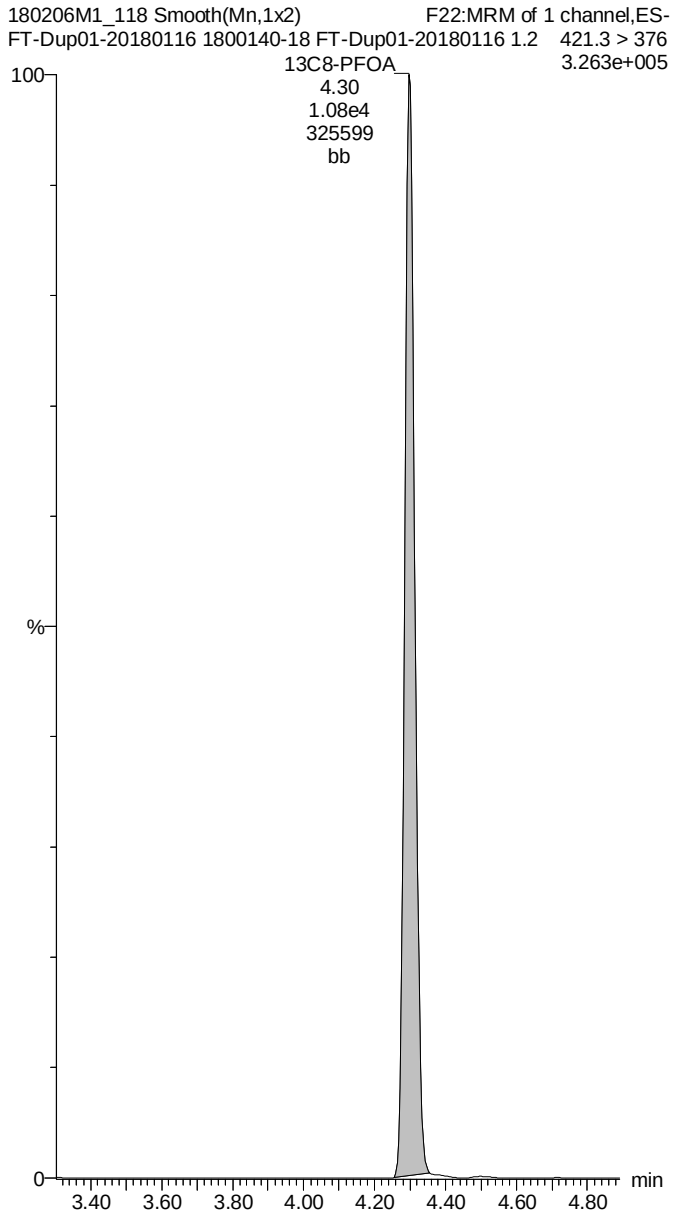
Last Altered: Tuesday, February 13, 2018 09:42:31 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:43:53 Pacific Standard Time

Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

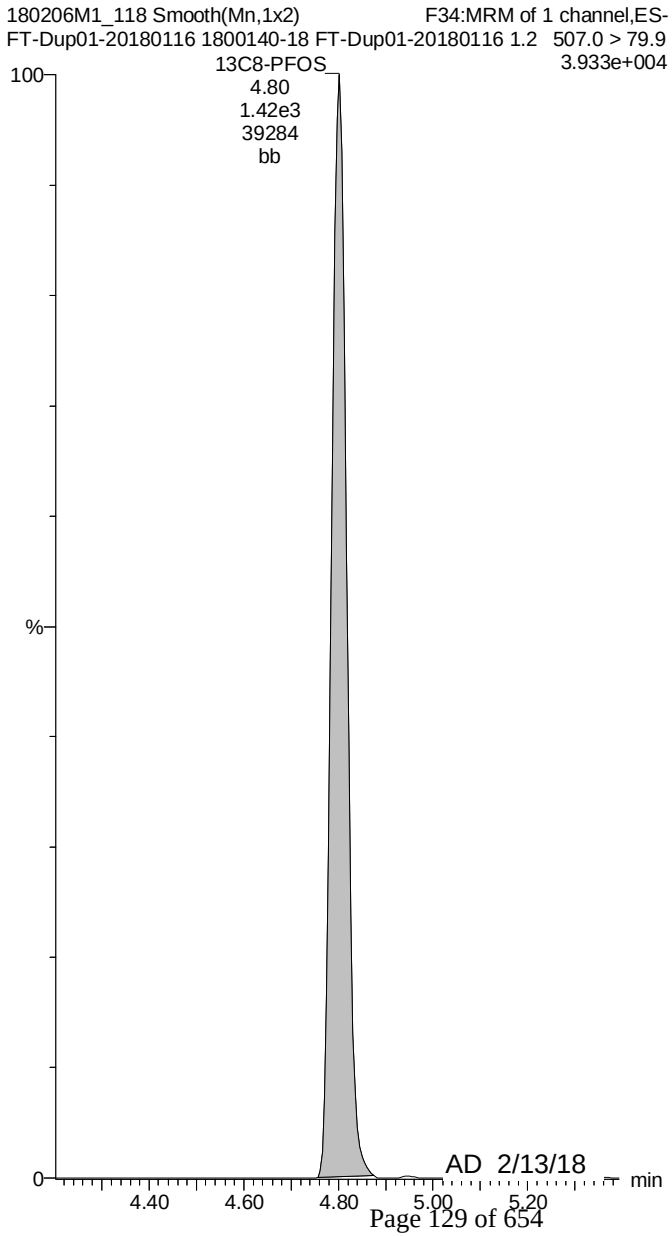
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-119.qld

Last Altered: Tuesday, February 13, 2018 09:49:12 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:50:22 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.46e3	1.1149		2.98				
2	11	L-PFOA	413 > 368.7	2.08e3	1.14e4	1.1149		4.30	4.29	2.28	2.04	
3	16	L-PFOS	499 > 79.9	2.09e2	2.28e3	1.1149		5.11	4.79	1.15	0.975	
4	36	13C3-PFBS	302. > 98.8	1.46e3	1.38e4	1.1149	0.109	2.98	2.70	1.33	10.9	97.3
5	41	13C2-PFOA	414.9 > 369.7	1.14e4	1.17e4	1.1149	1.069	4.30	4.29	12.2	10.2	91.3
6	44	13C8-PFOS	507.0 > 79.9	2.28e3	2.27e3	1.1149	1.041	5.11	4.79	12.5	10.8	96.3
7	58	13C5-PFHxA	318 > 272.9	1.38e4	1.38e4	1.1149	1.000	3.48	3.19	12.5	11.2	100.0
8	60	13C8-PFOA	421.3 > 376	1.17e4	1.17e4	1.1149	1.000	4.30	4.29	12.5	11.2	100.0

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Vista Analytical Laboratory

Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-119.qld

Last Altered: Tuesday, February 13, 2018 09:49:12 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:50:34 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.27e3	2.27e3	1.1149	1.000	5.11	4.80	12.5	11.2	100.0
2	66	Total PFOA	413 > 368.7	2.39e3	1.14e4	1.1149		4.30		2.62	2.24	
3	67	Total PFOS	499 > 79.9	2.09e2	2.28e3	1.1149		5.11		1.15	0.975	

AD 2/13/18

Vista Analytical Laboratory

Rev'd: MM 2/13/2018

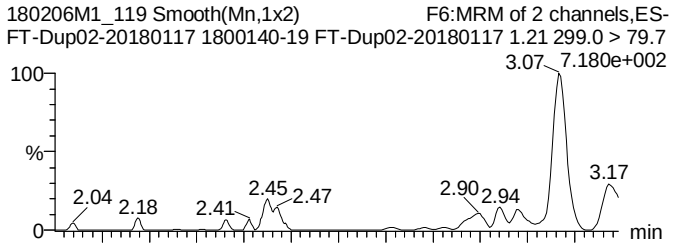
Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-119.qld

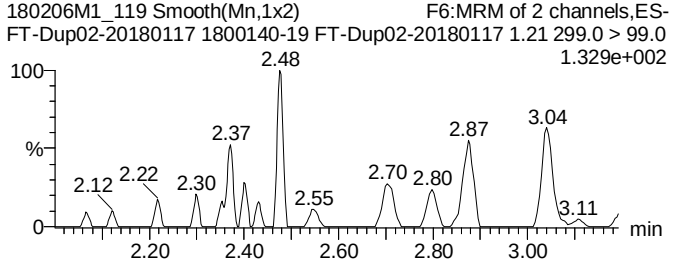
Last Altered: Tuesday, February 13, 2018 09:49:12 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:50:34 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

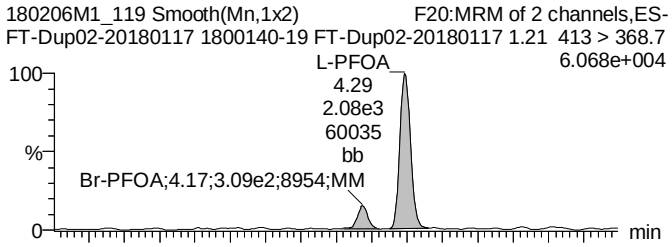
Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

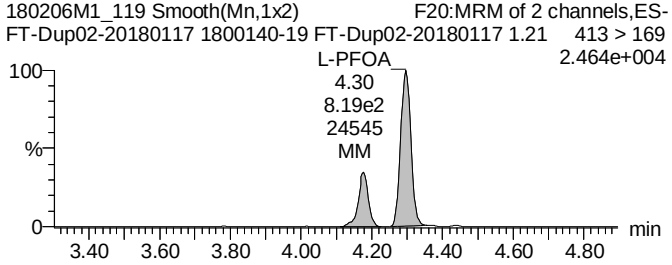
PFBS



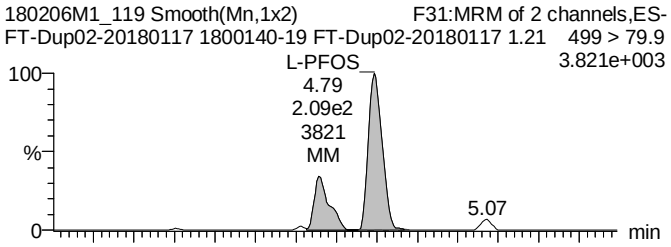


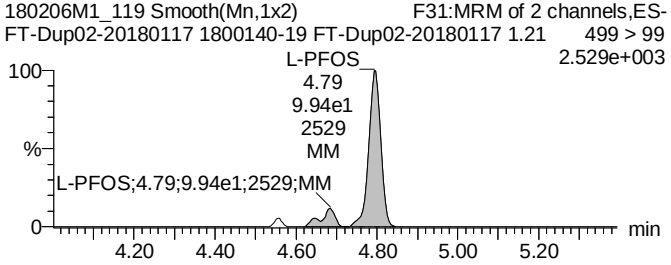
Total PFOA



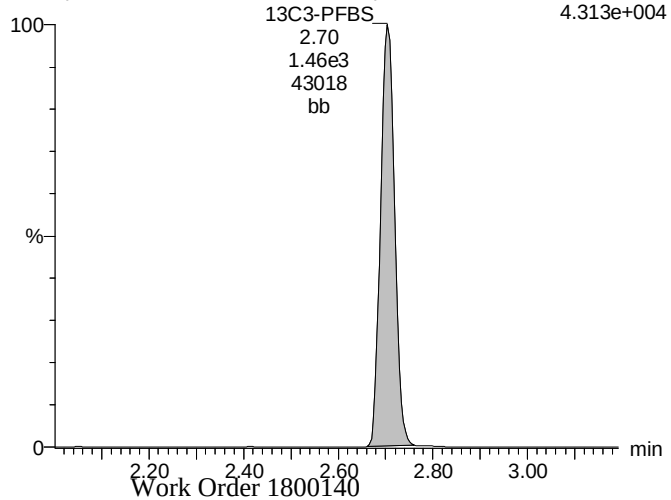


Total PFOS

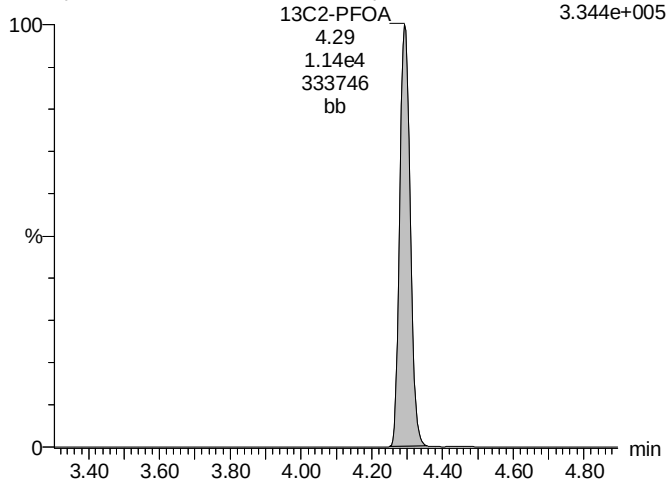




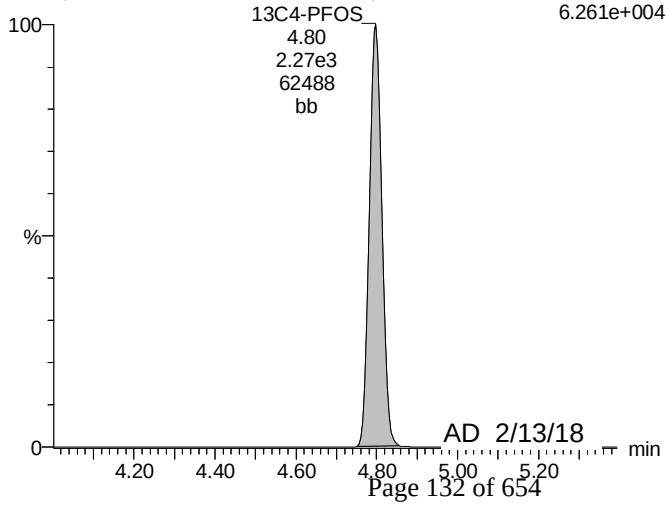
13C3-PFBS



13C2-PFOA



13C4-PFOS



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Vista Analytical Laboratory

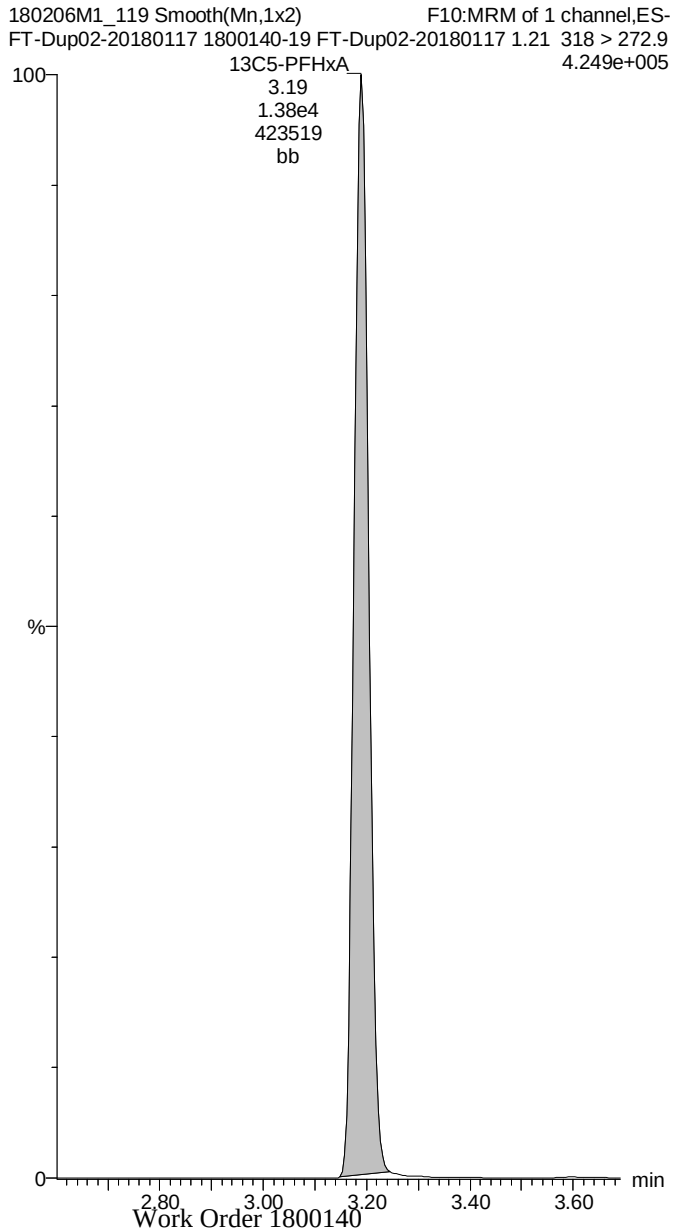
Rev'd: MM 2/13/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180206M1\180206M1-119.qld

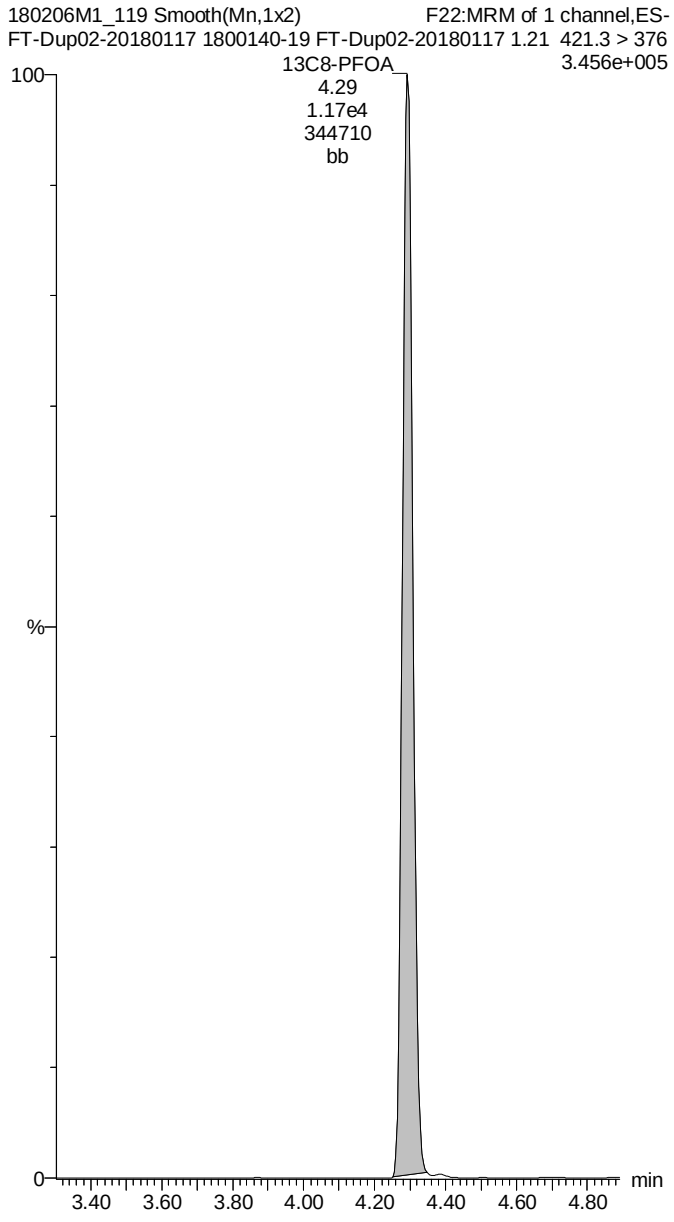
Last Altered: Tuesday, February 13, 2018 09:49:12 Pacific Standard Time
Printed: Tuesday, February 13, 2018 09:50:34 Pacific Standard Time

Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

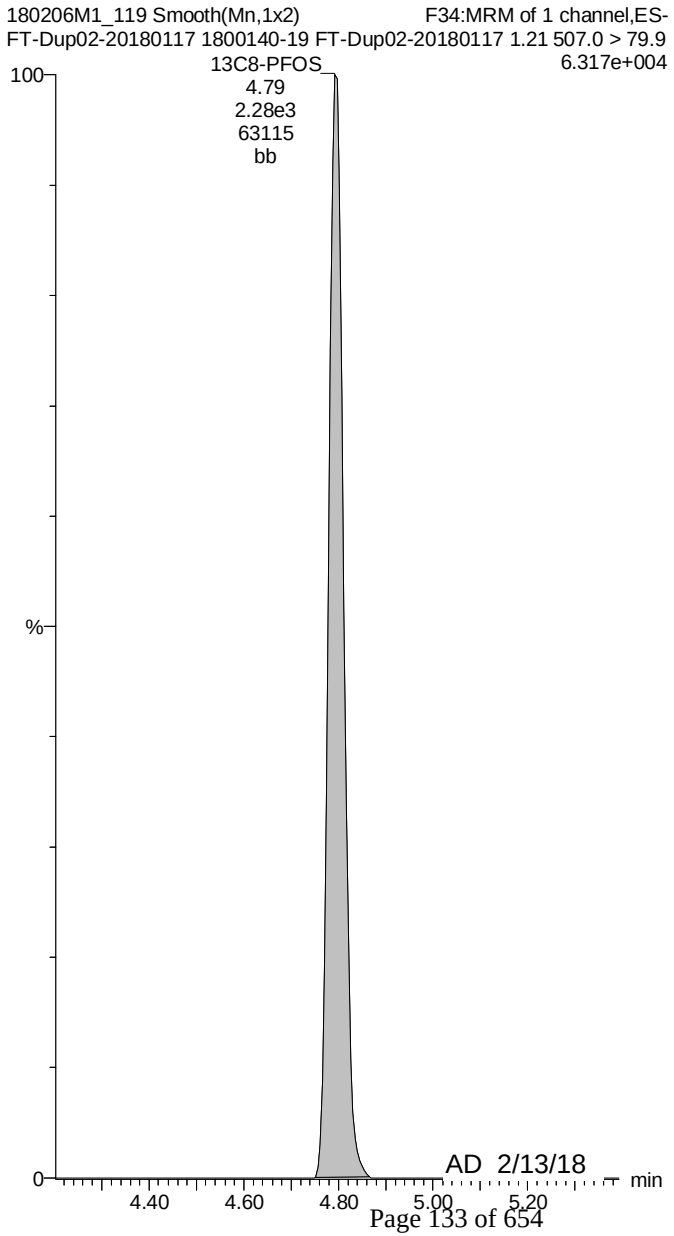
13C5-PFHxA



13C8-PFOA



13C8-PFOS



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UNREPORTED RUNS

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:15:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:15:55 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_69, Date: 08-Feb-2018, Time: 00:39:03, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	2.26e3	1.40e3	1.0000		2.69	2.61	20.1	10.6	106.3
2	11	L-PFOA	413 > 368.7	9.49e3	1.02e4	1.0000		4.33	4.23	11.6	12.2	121.8
3	16	L-PFOS	499 > 79.9	7.81e2	1.11e3	1.0000		4.84	4.74	8.77	7.86	78.6
4	36	13C3-PFBS	302. > 98.8	1.40e3	1.16e4	1.0000	0.109	2.69	2.61	1.51	13.8	110.5
5	41	13C2-PFOA	414.9 > 369.7	1.02e4	1.04e4	1.0000	1.069	4.33	4.23	12.3	11.5	92.1
6	44	13C8-PFOS	507.0 > 79.9	1.11e3	1.24e3	1.0000	1.041	4.84	4.74	11.2	10.8	86.4
7	58	13C5-PFHxA	318 > 272.9	1.16e4	1.16e4	1.0000	1.000	3.19	3.10	12.5	12.5	100.0
8	60	13C8-PFOA	421.3 > 376	1.04e4	1.04e4	1.0000	1.000	4.33	4.23	12.5	12.5	100.0

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:15:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:16:11 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_69, Date: 08-Feb-2018, Time: 00:39:03, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.24e3	1.24e3	1.0000	1.000	4.84	4.74	12.5	12.5	100.0
2	66	Total PFOA	413 > 368.7	9.49e3	1.02e4	1.0000		4.33		11.6	12.2	
3	67	Total PFOS	499 > 79.9	7.81e2	1.11e3	1.0000		4.84		8.77	7.86	

Vista Analytical Laboratory

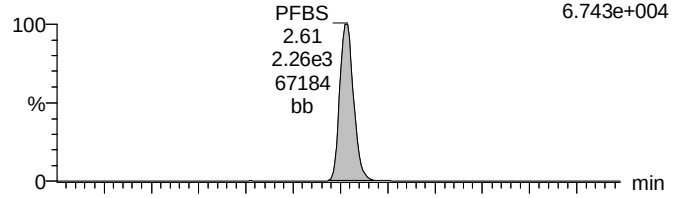
Dataset: Untitled

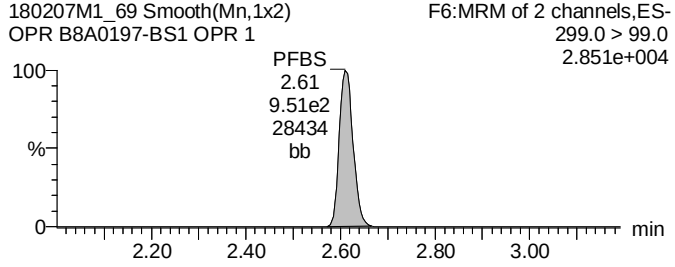
Last Altered: Wednesday, February 14, 2018 13:15:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:16:11 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

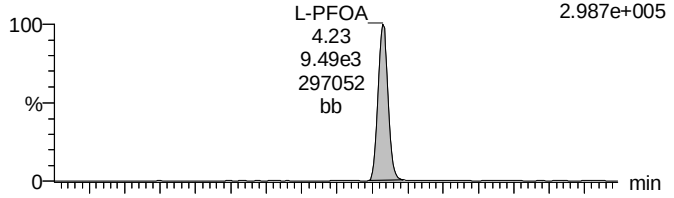
Name: 180207M1_69, Date: 08-Feb-2018, Time: 00:39:03, ID: B8A0197-BS1 OPR 1, Description: OPR

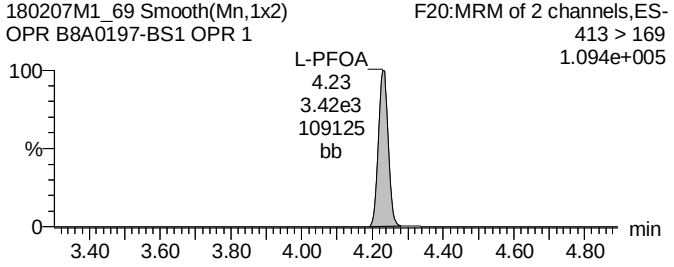
PFBS



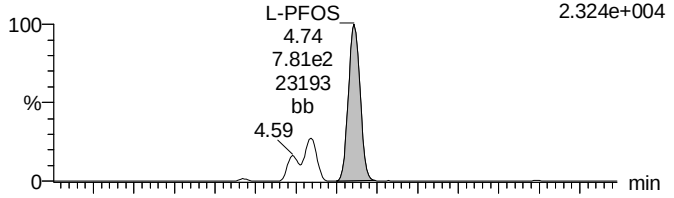


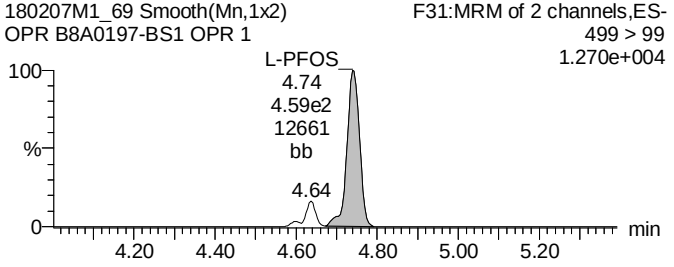
Total PFOA



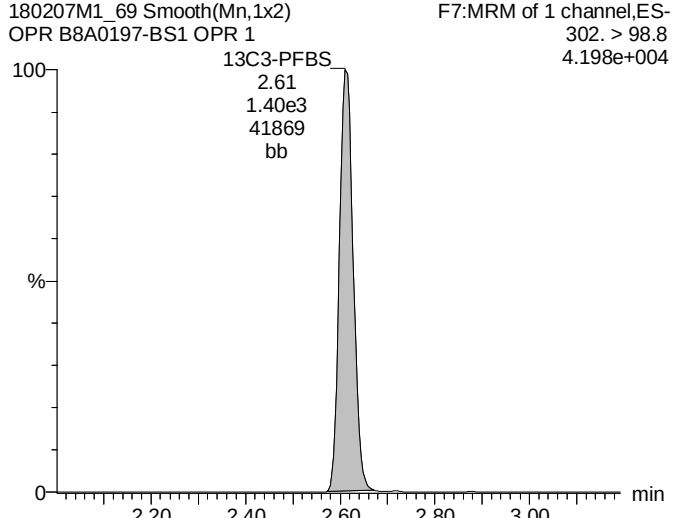


Total PFOS

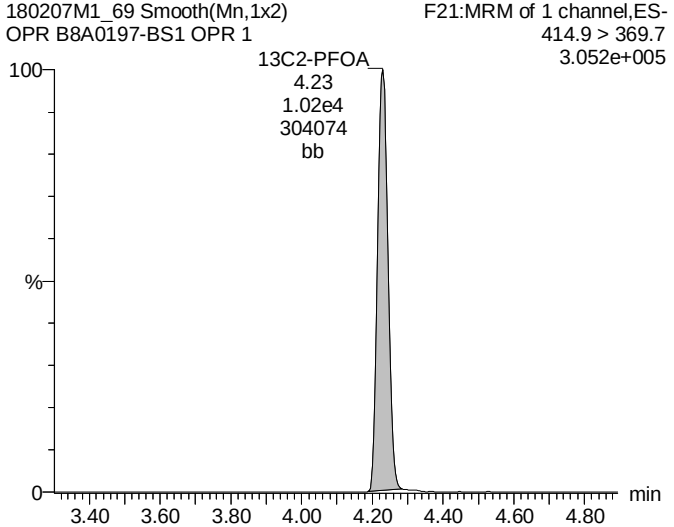




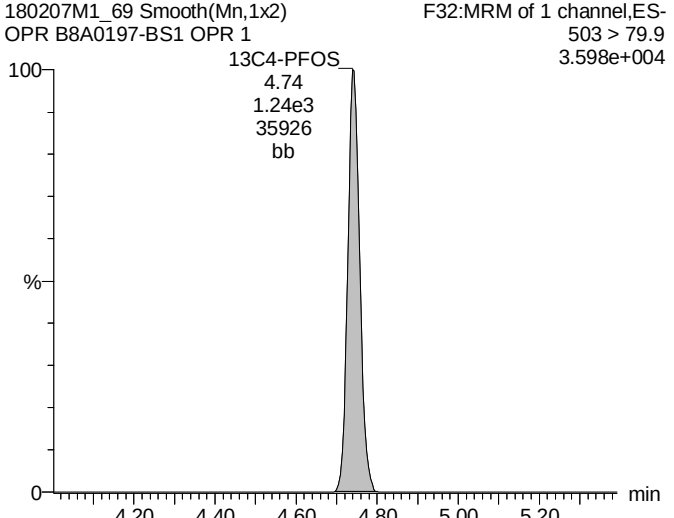
13C3-PFBS



13C2-PFOA



13C4-PFOS



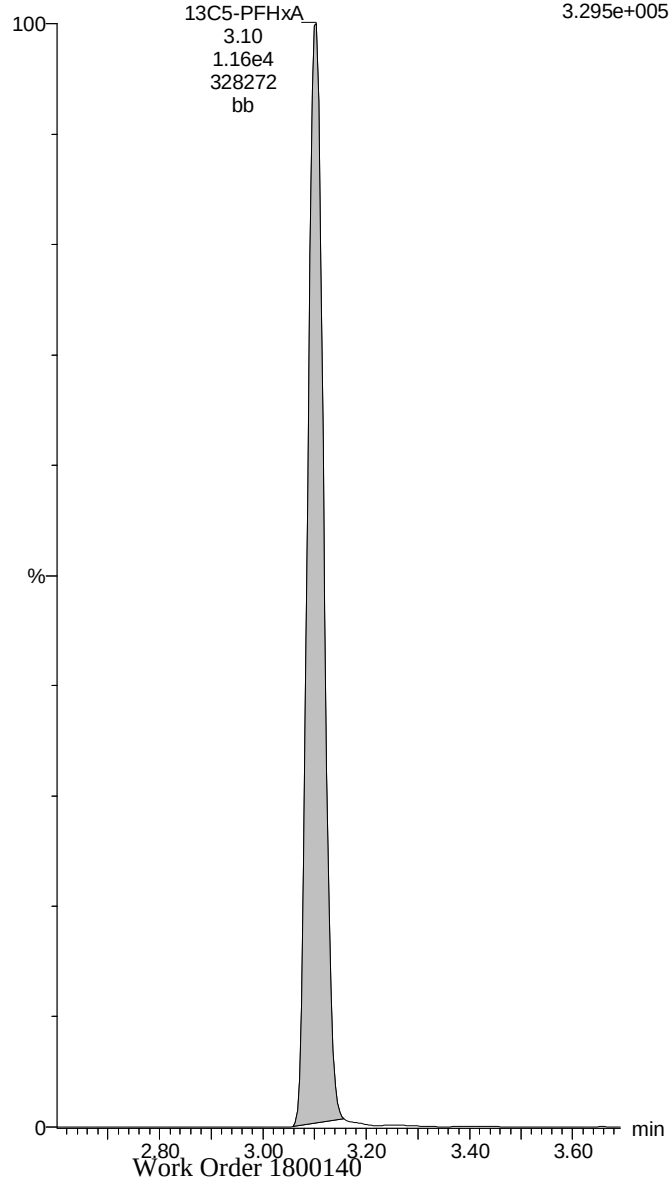
Vista Analytical Laboratory

Dataset: Untitled

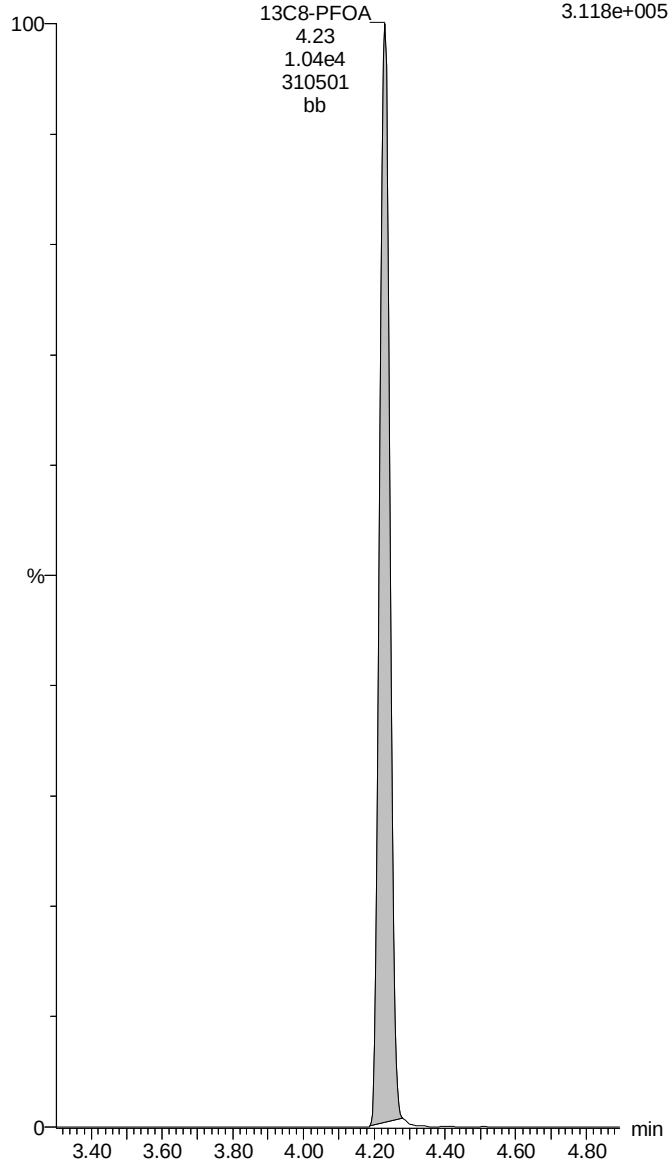
Last Altered: Wednesday, February 14, 2018 13:15:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:16:11 Pacific Standard Time

Name: 180207M1_69, Date: 08-Feb-2018, Time: 00:39:03, ID: B8A0197-BS1 OPR 1, Description: OPR

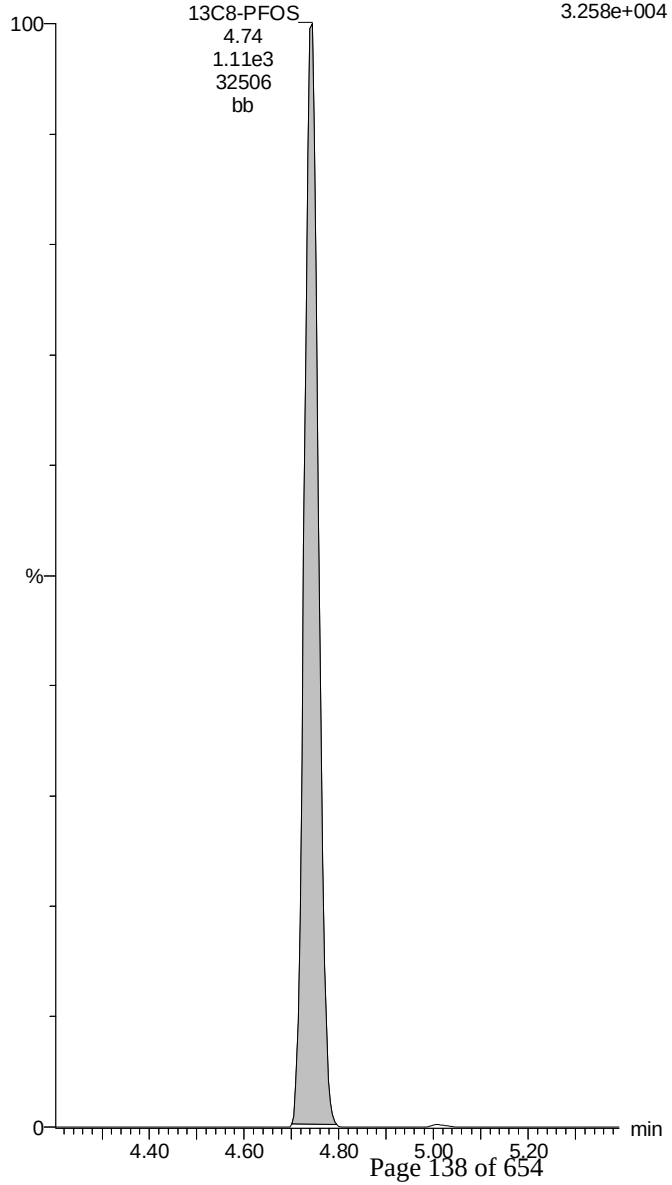
13C5-PFHxA



13C8-PFOA



13C8-PFOS



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 12:58:15 Pacific Standard Time
Printed: Wednesday, February 14, 2018 12:58:42 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_72, Date: 08-Feb-2018, Time: 01:13:31, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.43e3	1.1432		2.69				
2	11	L-PFOA	413 > 368.7	4.54e2	1.21e4	1.1432		4.33	4.23	0.468	0.310	
3	16	L-PFOS	499 > 79.9	1.09e2	1.46e3	1.1432		4.84	4.60	0.931	0.783	
4	36	13C3-PFBS	302. > 98.8	1.43e3	1.26e4	1.1432	0.109	2.69	2.61	1.42	11.4	104.1
5	41	13C2-PFOA	414.9 > 369.7	1.21e4	1.19e4	1.1432	1.069	4.33	4.23	12.7	10.4	95.0
6	44	13C8-PFOS	507.0 > 79.9	1.46e3	1.53e3	1.1432	1.041	4.84	4.74	11.9	10.0	91.4
7	58	13C5-PFHxA	318 > 272.9	1.26e4	1.26e4	1.1432	1.000	3.19	3.10	12.5	10.9	100.0
8	60	13C8-PFOA	421.3 > 376	1.19e4	1.19e4	1.1432	1.000	4.33	4.23	12.5	10.9	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 12:58:15 Pacific Standard Time
Printed: Wednesday, February 14, 2018 12:58:54 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_72, Date: 08-Feb-2018, Time: 01:13:31, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.53e3	1.53e3	1.1432	1.000	4.84	4.74	12.5	10.9	100.0
2	66	Total PFOA	413 > 368.7	4.54e2	1.21e4	1.1432		4.33		0.468	0.310	
3	67	Total PFOS	499 > 79.9	1.09e2	1.46e3	1.1432		4.84		0.931	0.783	

AD 2/14/2018

Vista Analytical Laboratory

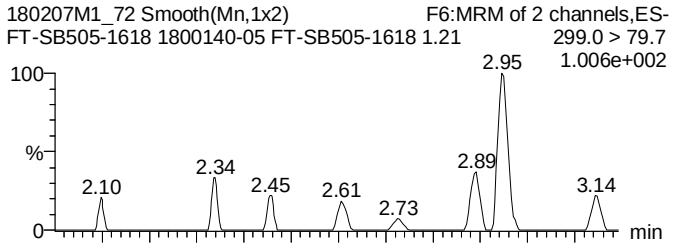
Dataset: Untitled

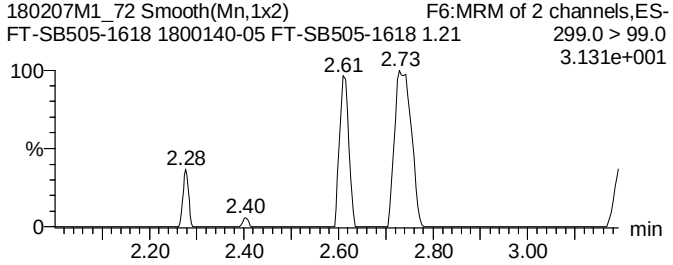
Last Altered: Wednesday, February 14, 2018 12:58:15 Pacific Standard Time
Printed: Wednesday, February 14, 2018 12:58:54 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

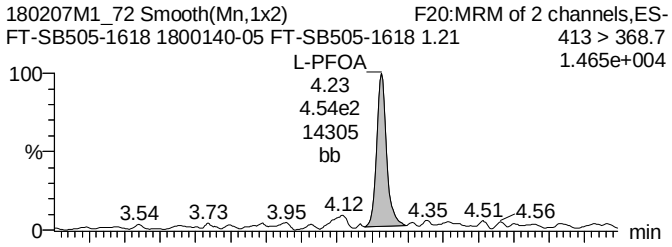
Name: 180207M1_72, Date: 08-Feb-2018, Time: 01:13:31, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

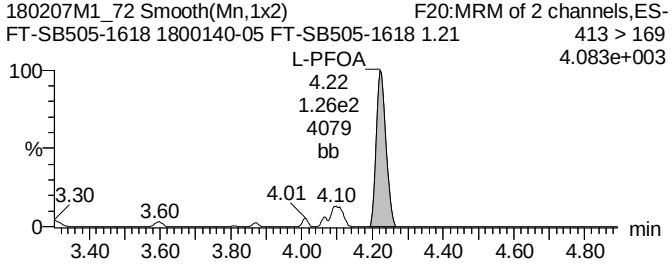
PFBS



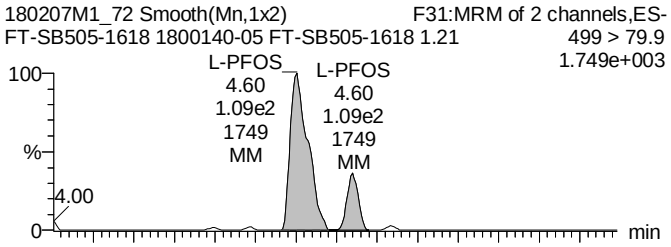


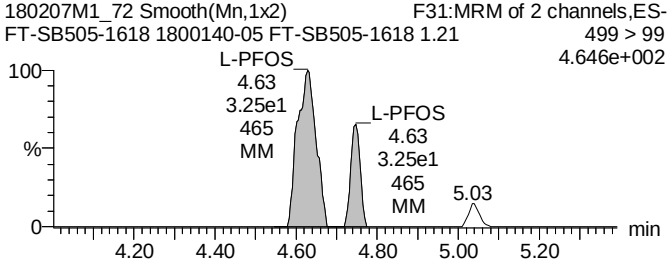
Total PFOA



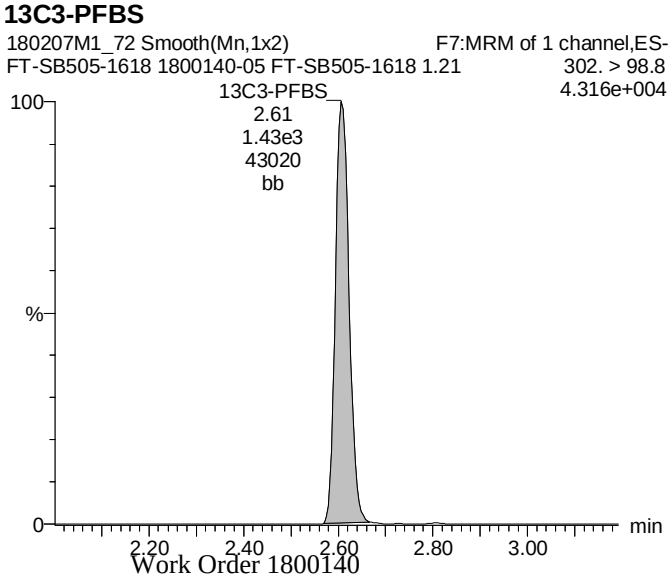


Total PFOS

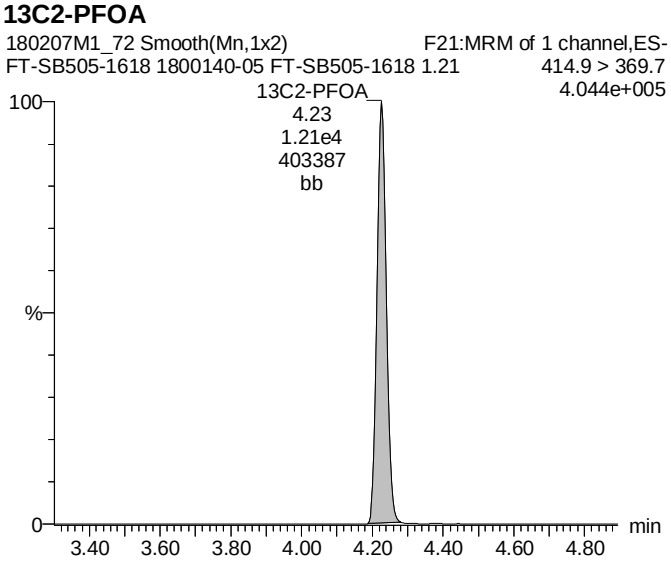




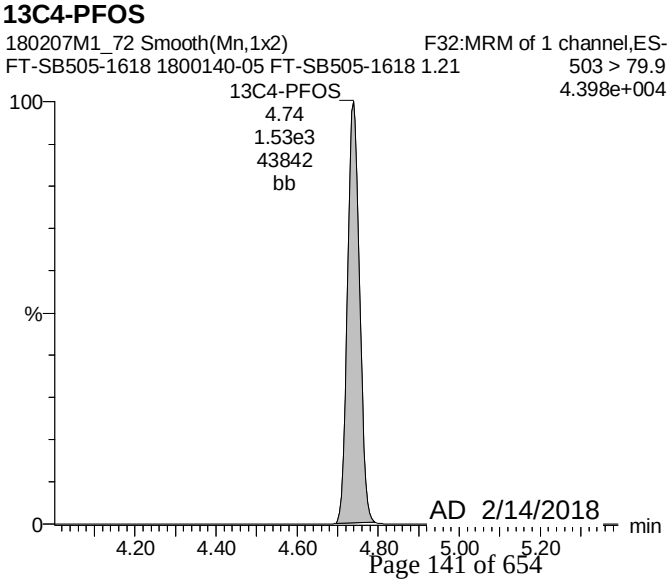
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

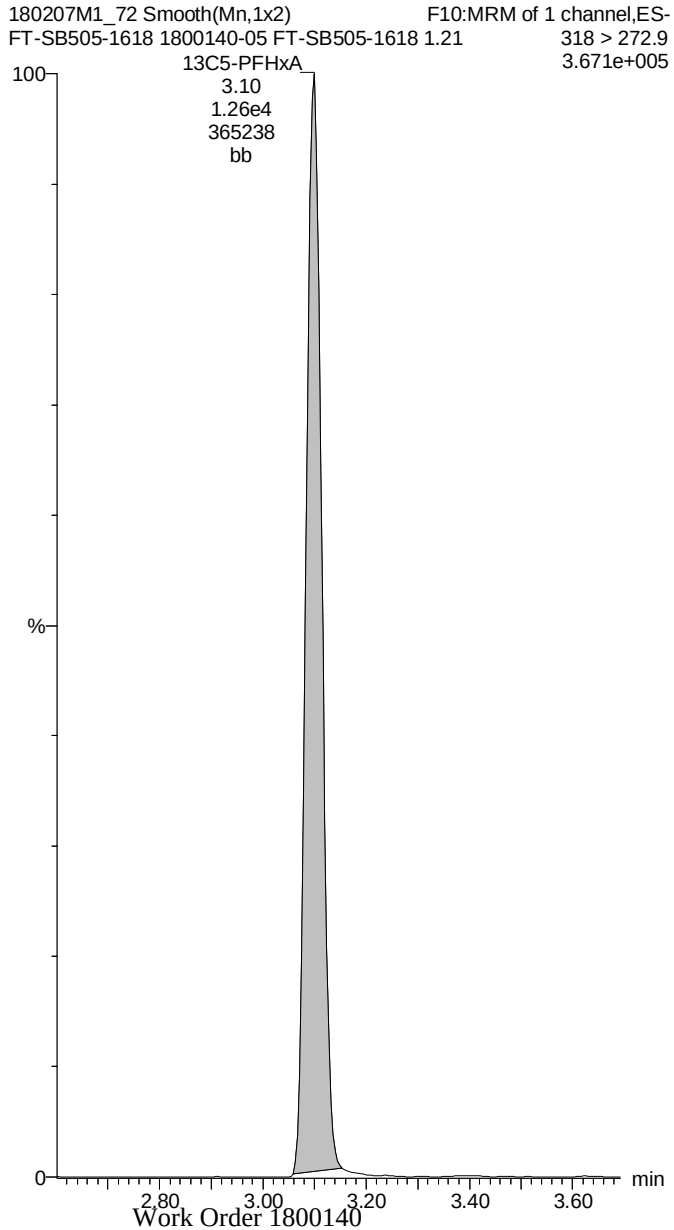
Vista Analytical Laboratory

Dataset: Untitled

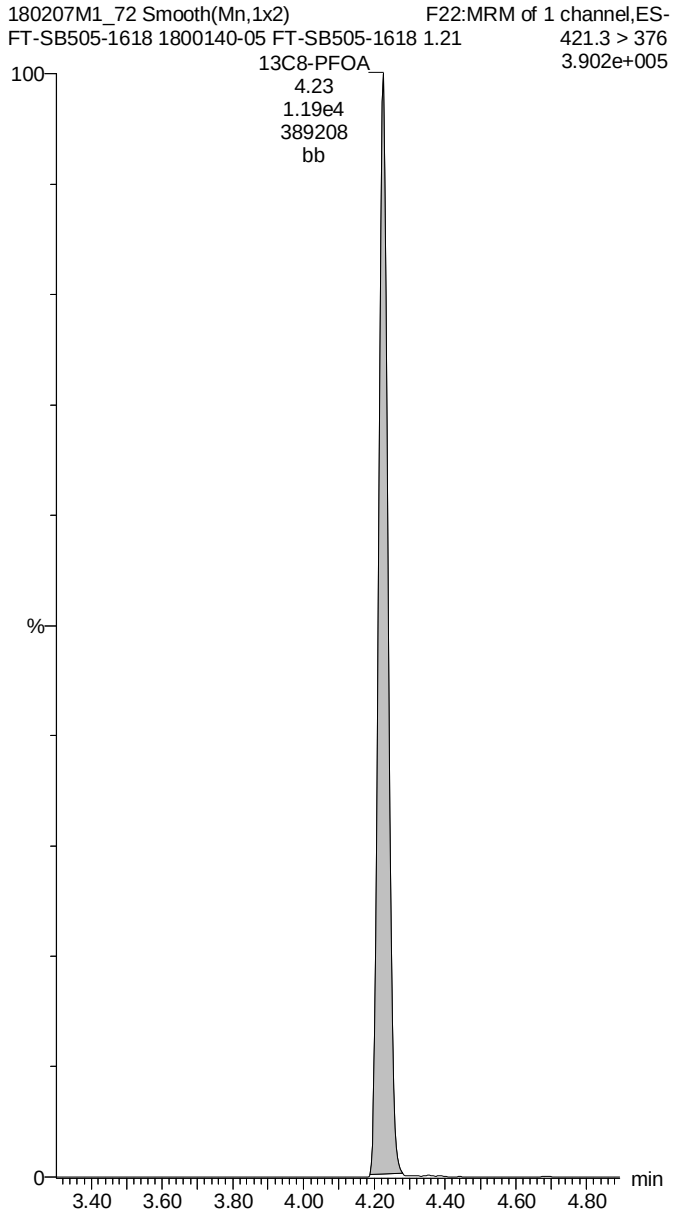
Last Altered: Wednesday, February 14, 2018 12:58:15 Pacific Standard Time
Printed: Wednesday, February 14, 2018 12:58:54 Pacific Standard Time

Name: 180207M1_72, Date: 08-Feb-2018, Time: 01:13:31, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

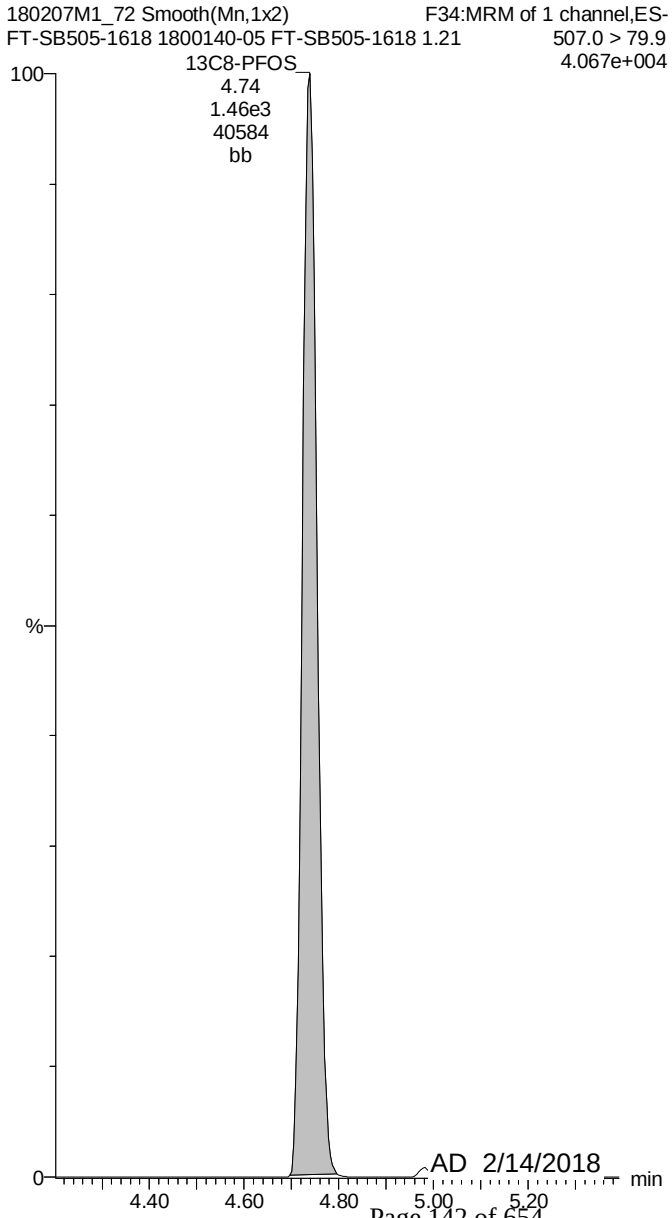
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:17:27 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:17:40 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_70, Date: 08-Feb-2018, Time: 00:50:32, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	2.15e3	1.24e3	1.2700		2.69	2.61	21.7	9.04	
2	11	L-PFOA	413 > 368.7	1.10e4	1.16e4	1.2700		4.33	4.23	11.9	9.82	
3	16	L-PFOS	499 > 79.9	1.34e3	1.65e3	1.2700		4.84	4.74	10.2	7.16	
4	36	13C3-PFBS	302. > 98.8	1.24e3	1.33e4	1.2700	0.109	2.69	2.61	1.17	8.42	85.6
5	41	13C2-PFOA	414.9 > 369.7	1.16e4	1.17e4	1.2700	1.069	4.33	4.23	12.4	9.11	92.6
6	44	13C8-PFOS	507.0 > 79.9	1.65e3	1.62e3	1.2700	1.041	4.84	4.74	12.7	9.64	97.9
7	58	13C5-PFHxA	318 > 272.9	1.33e4	1.33e4	1.2700	1.000	3.19	3.10	12.5	9.84	100.0
8	60	13C8-PFOA	421.3 > 376	1.17e4	1.17e4	1.2700	1.000	4.33	4.23	12.5	9.84	100.0

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Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:17:27 Pacific Standard Time
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Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_70, Date: 08-Feb-2018, Time: 00:50:32, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.62e3	1.62e3	1.2700	1.000	4.84	4.74	12.5	9.84	100.0
2	66	Total PFOA	413 > 368.7	1.10e4	1.16e4	1.2700		4.33		11.9	9.82	
3	67	Total PFOS	499 > 79.9	1.34e3	1.65e3	1.2700		4.84		10.2	7.16	

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:17:27 Pacific Standard Time
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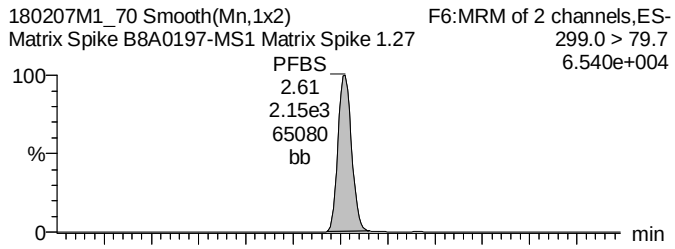
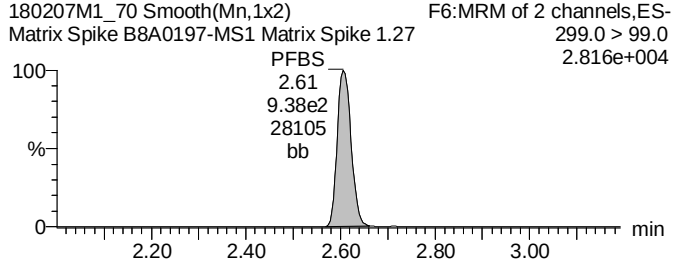
Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

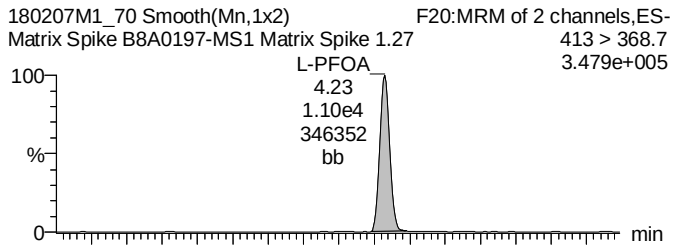
Name: 180207M1_70, Date: 08-Feb-2018, Time: 00:50:32, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

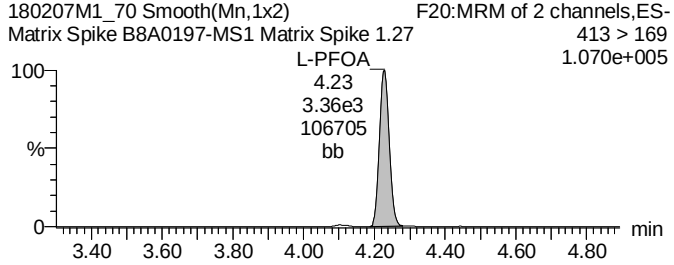
PFBS



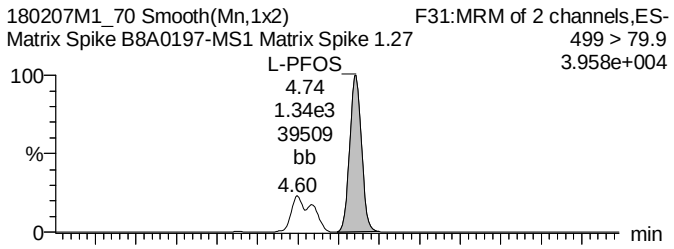


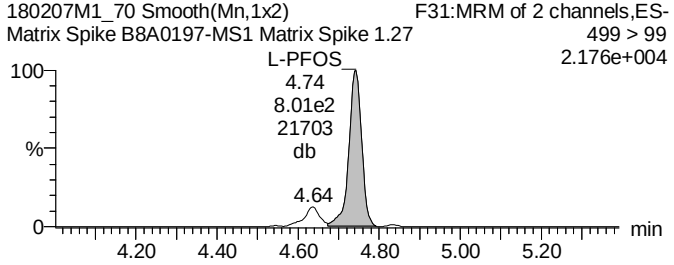
Total PFOA



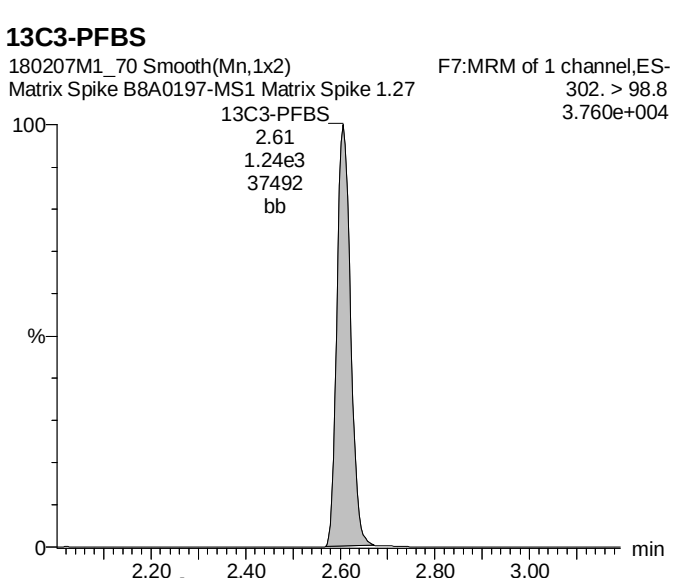


Total PFOS

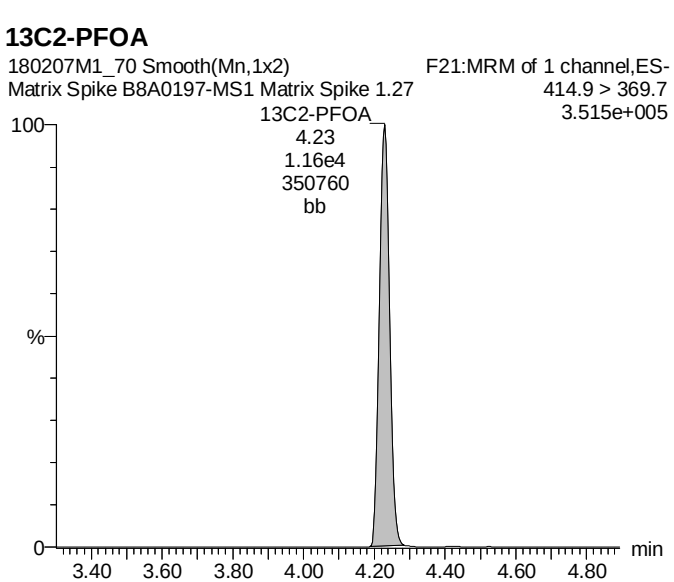




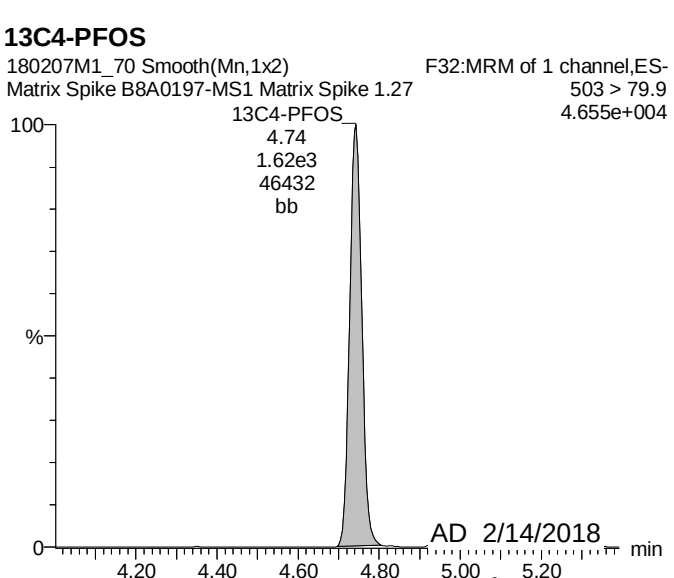
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

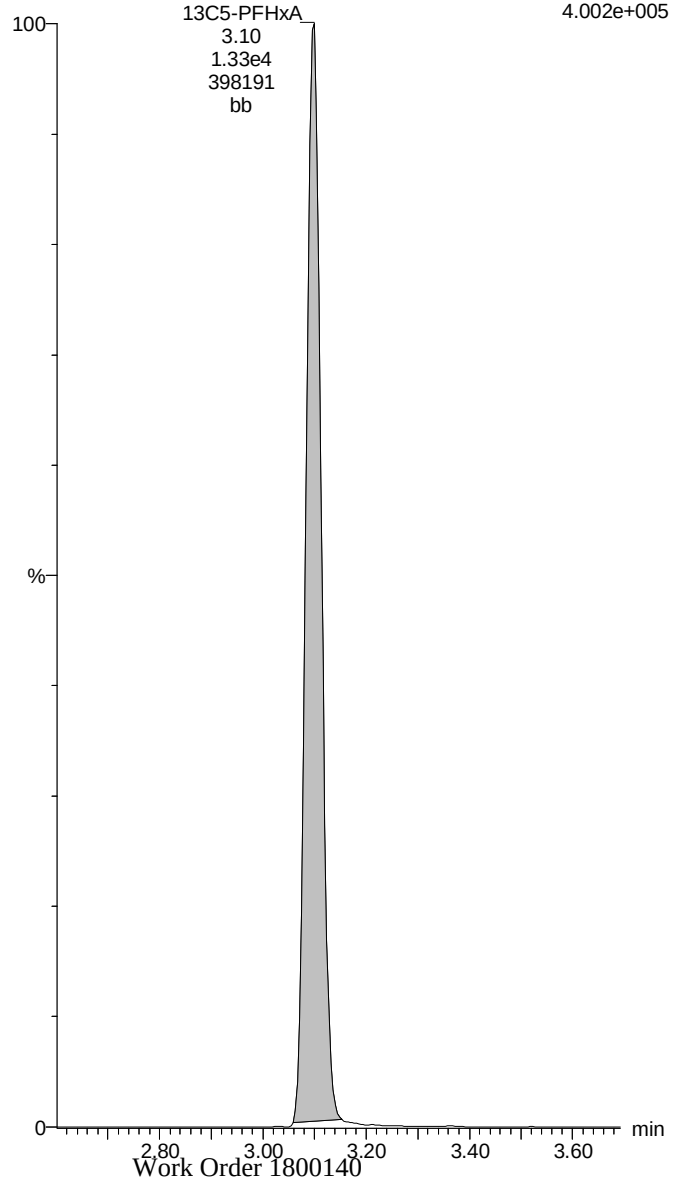
Vista Analytical Laboratory

Dataset: Untitled

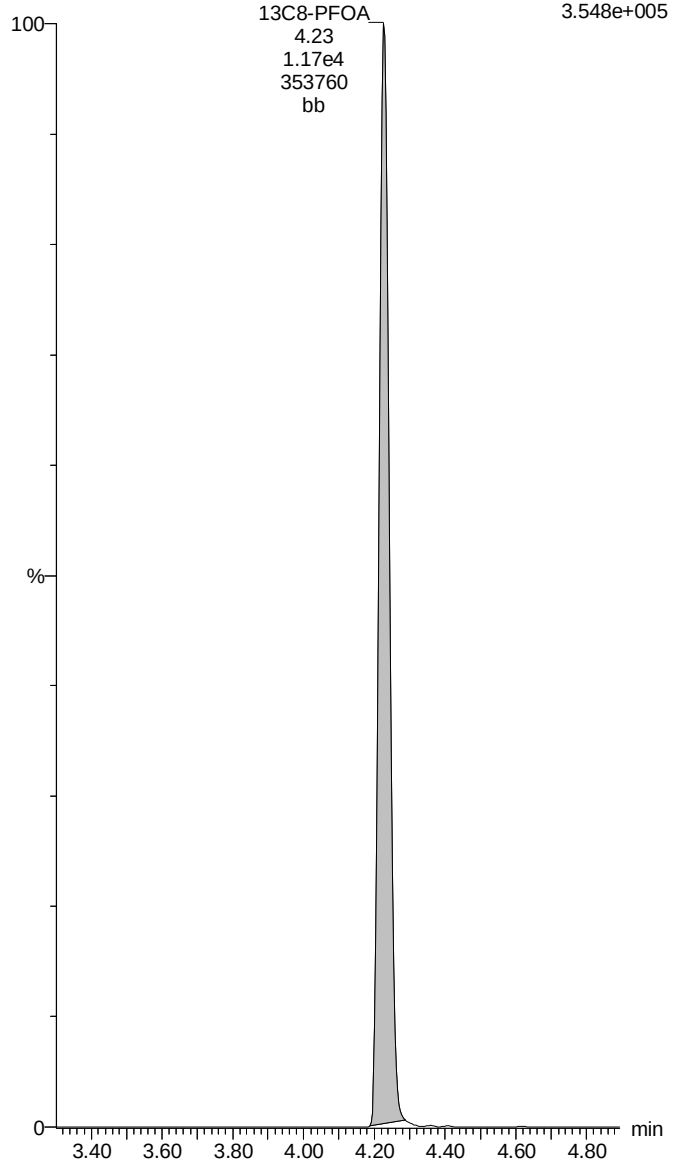
Last Altered: Wednesday, February 14, 2018 13:17:27 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:17:52 Pacific Standard Time

Name: 180207M1_70, Date: 08-Feb-2018, Time: 00:50:32, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

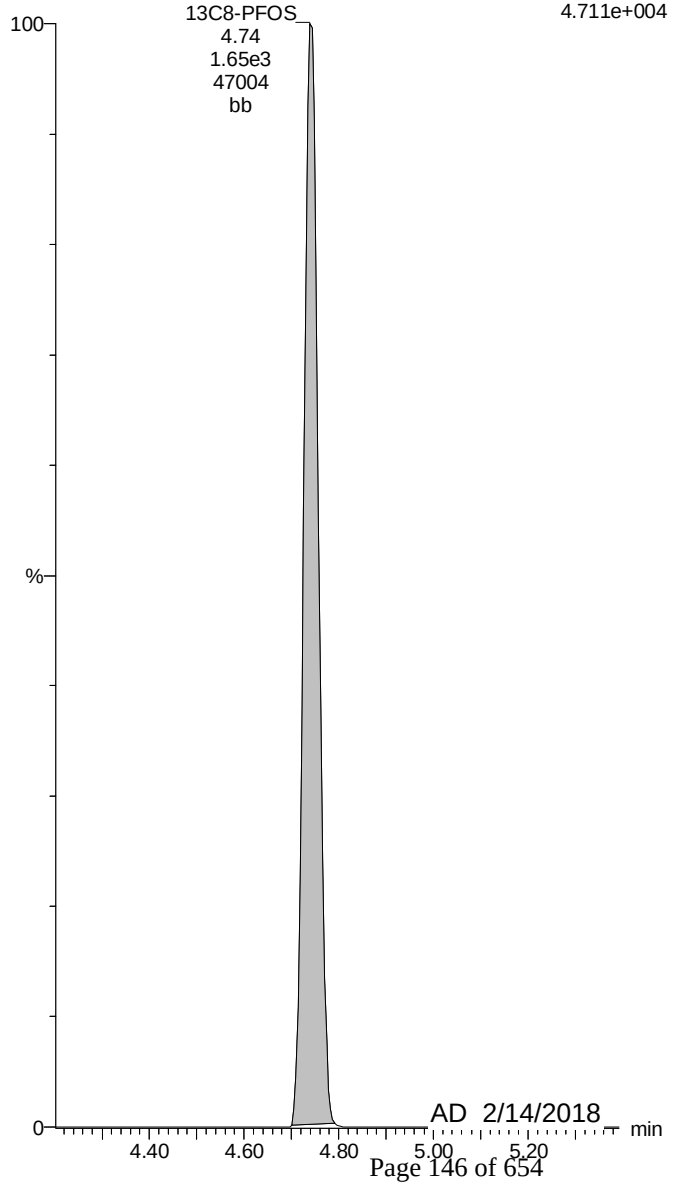
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:19:11 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:19:21 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_71, Date: 08-Feb-2018, Time: 01:02:02, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	2.10e3	1.29e3	1.2100		2.69	2.61	20.3	8.90	
2	11	L-PFOA	413 > 368.7	1.01e4	1.21e4	1.2100		4.33	4.23	10.4	9.02	
3	16	L-PFOS	499 > 79.9	1.29e3	1.76e3	1.2100		4.84	4.74	9.15	6.77	
4	36	13C3-PFBS	302. > 98.8	1.29e3	1.23e4	1.2100	0.109	2.69	2.61	1.31	9.93	96.2
5	41	13C2-PFOA	414.9 > 369.7	1.21e4	1.07e4	1.2100	1.069	4.33	4.23	14.1	10.9	105.6
6	44	13C8-PFOS	507.0 > 79.9	1.76e3	1.99e3	1.2100	1.041	4.84	4.74	11.1	8.77	84.9
7	58	13C5-PFHxA	318 > 272.9	1.23e4	1.23e4	1.2100	1.000	3.19	3.10	12.5	10.3	100.0
8	60	13C8-PFOA	421.3 > 376	1.07e4	1.07e4	1.2100	1.000	4.33	4.23	12.5	10.3	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:19:11 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:19:35 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_71, Date: 08-Feb-2018, Time: 01:02:02, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.99e3	1.99e3	1.2100	1.000	4.84	4.74	12.5	10.3	100.0
2	66	Total PFOA	413 > 368.7	1.01e4	1.21e4	1.2100		4.33		10.4	9.02	
3	67	Total PFOS	499 > 79.9	1.29e3	1.76e3	1.2100		4.84		9.15	6.77	

AD 2/14/2018

Vista Analytical Laboratory

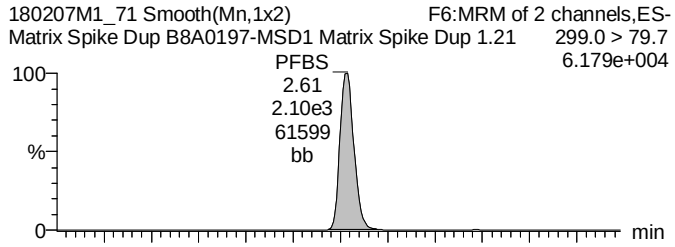
Dataset: Untitled

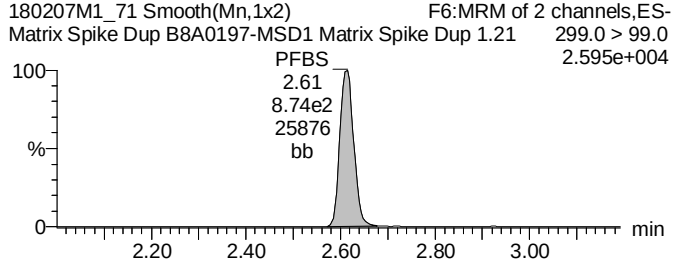
Last Altered: Wednesday, February 14, 2018 13:19:11 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:19:35 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

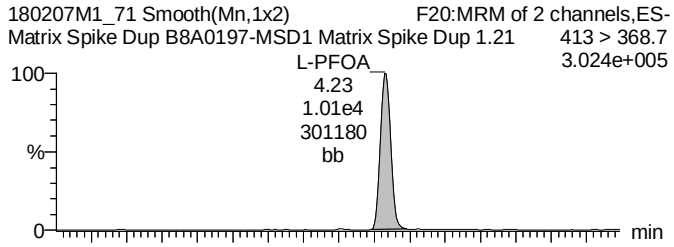
Name: 180207M1_71, Date: 08-Feb-2018, Time: 01:02:02, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

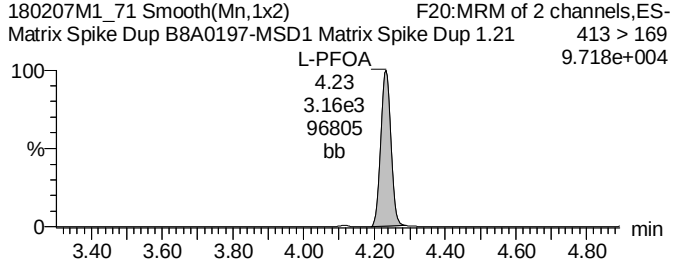
PFBS



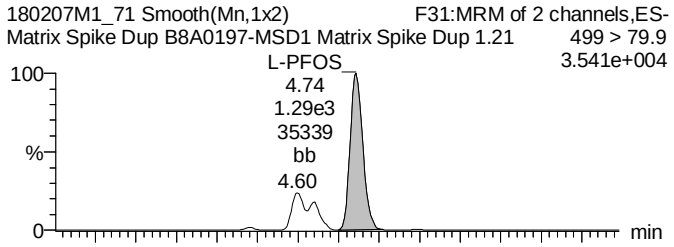


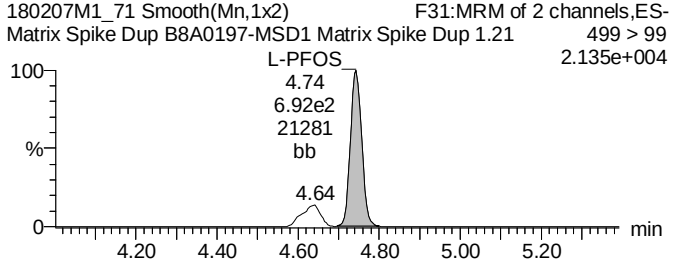
Total PFOA



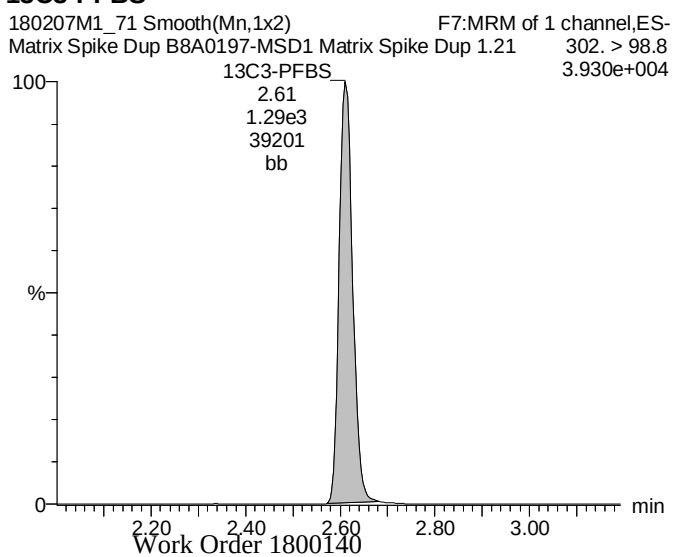


Total PFOS

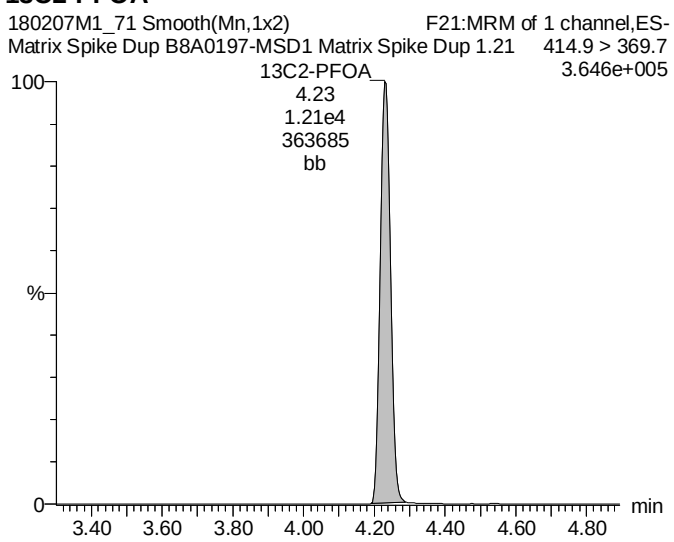




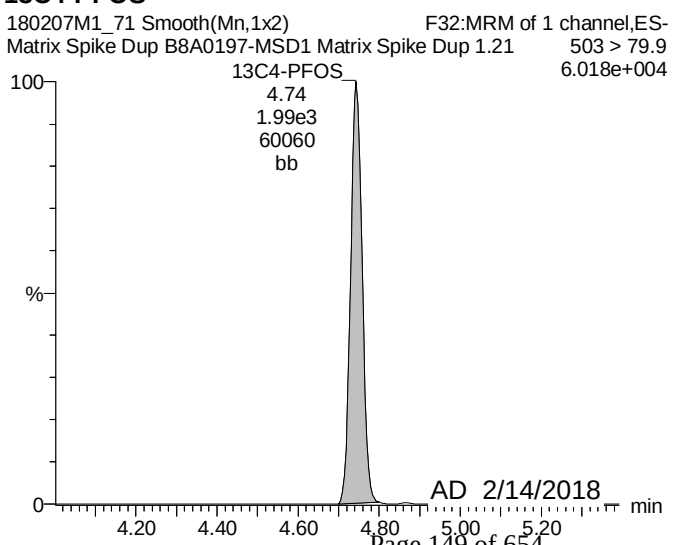
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

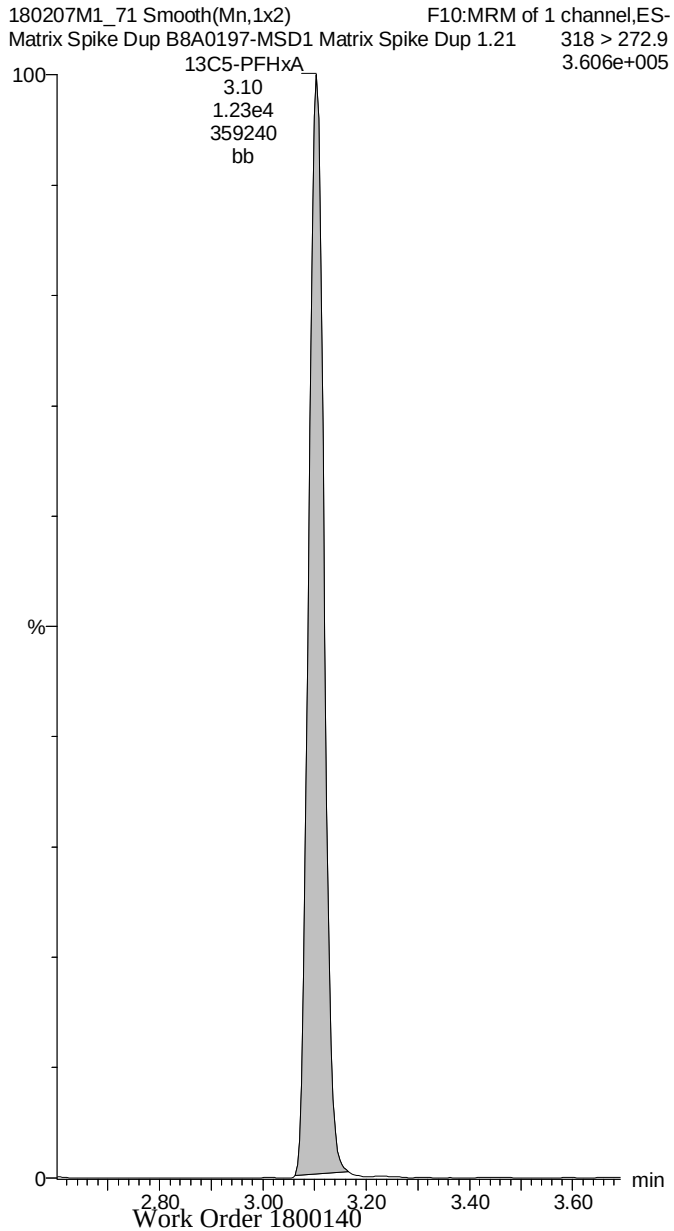
Vista Analytical Laboratory

Dataset: Untitled

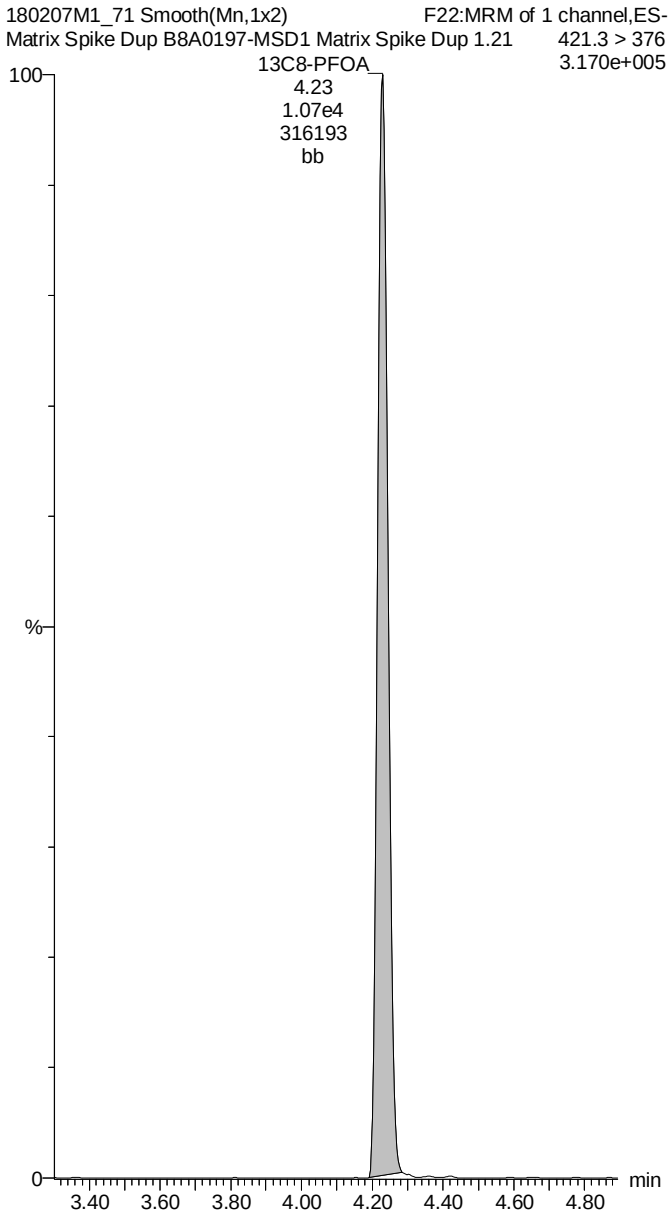
Last Altered: Wednesday, February 14, 2018 13:19:11 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:19:35 Pacific Standard Time

Name: 180207M1_71, Date: 08-Feb-2018, Time: 01:02:02, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

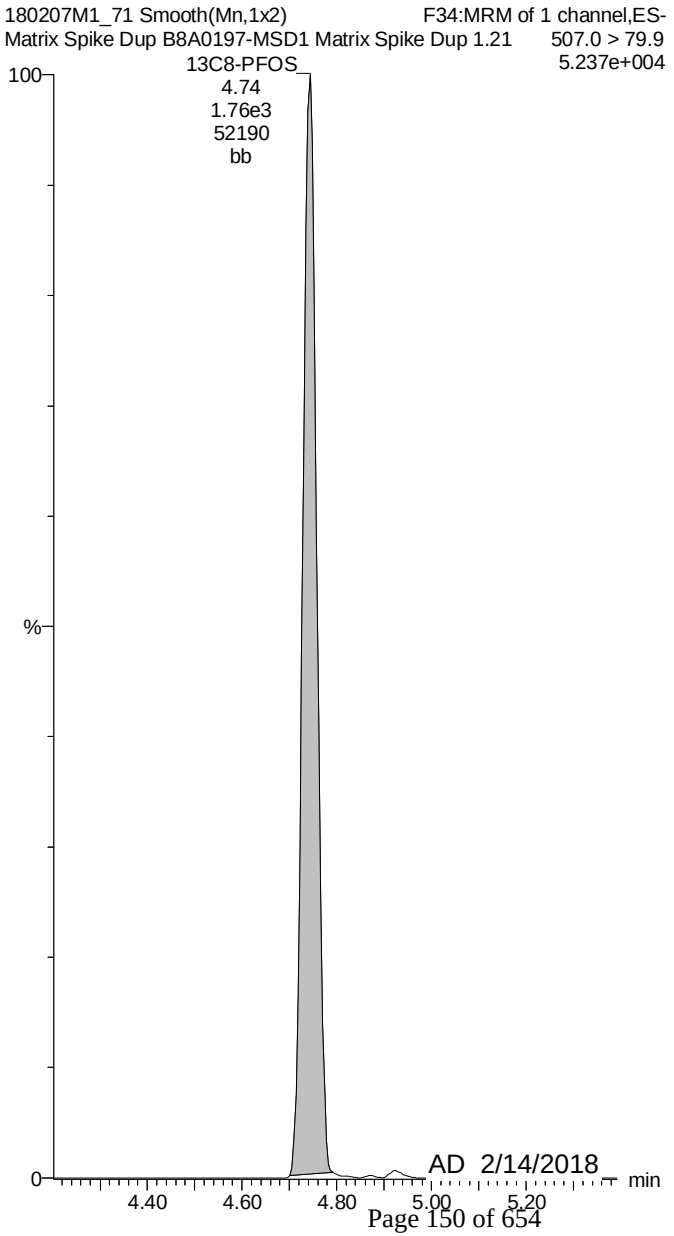
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:01:26 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:01:38 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_73, Date: 08-Feb-2018, Time: 01:24:57, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.35e3	1.2036		2.69				
2	11	L-PFOA	413 > 368.7	1.25e2	1.22e4	1.2036		4.33	4.23	0.129		
3	16	L-PFOS	499 > 79.9		1.66e3	1.2036		4.84				
4	36	13C3-PFBS	302. > 98.8	1.35e3	1.17e4	1.2036	0.109	2.69	2.61	1.45	11.0	106.0
5	41	13C2-PFOA	414.9 > 369.7	1.22e4	1.16e4	1.2036	1.069	4.33	4.23	13.1	10.2	98.1
6	44	13C8-PFOS	507.0 > 79.9	1.66e3	1.70e3	1.2036	1.041	4.84	4.74	12.2	9.77	94.1
7	58	13C5-PFHxA	318 > 272.9	1.17e4	1.17e4	1.2036	1.000	3.19	3.10	12.5	10.4	100.0
8	60	13C8-PFOA	421.3 > 376	1.16e4	1.16e4	1.2036	1.000	4.33	4.23	12.5	10.4	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:01:26 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:01:45 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_73, Date: 08-Feb-2018, Time: 01:24:57, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.70e3	1.70e3	1.2036	1.000	4.84	4.74	12.5	10.4	100.0
2	66	Total PFOA	413 > 368.7	1.25e2	1.22e4	1.2036		4.33		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.66e3	1.2036		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:01:26 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:01:45 Pacific Standard Time

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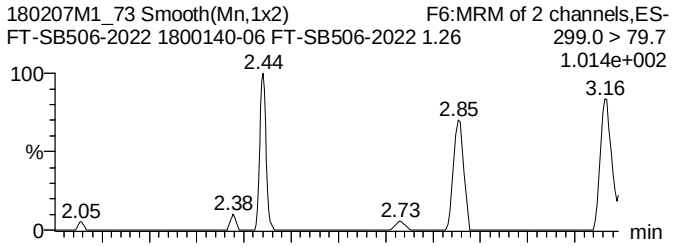
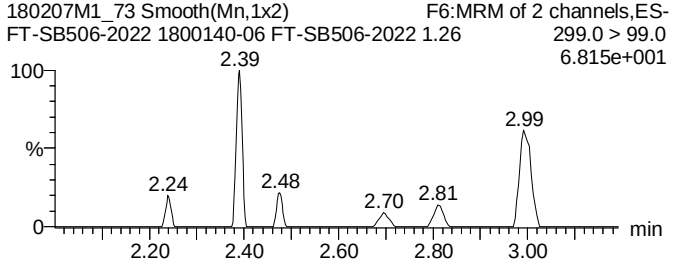
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

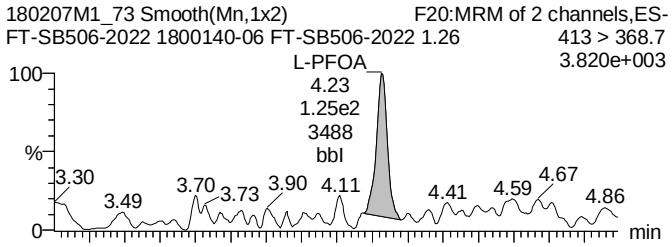
Name: 180207M1_73, Date: 08-Feb-2018, Time: 01:24:57, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

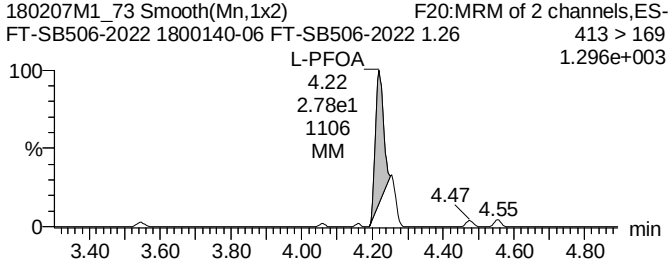
PFBS



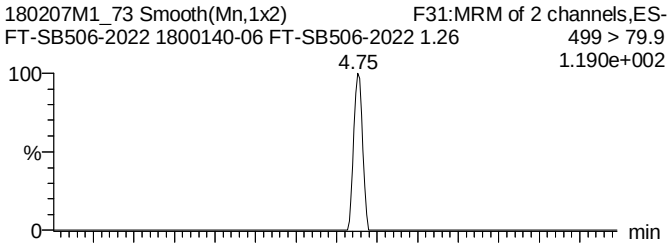


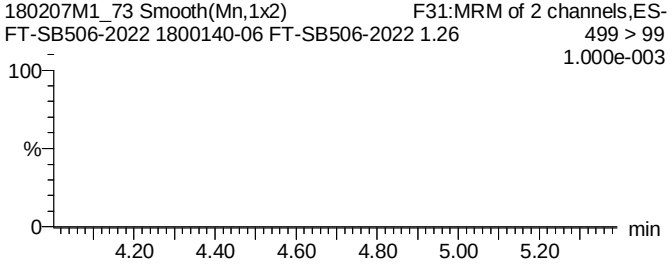
Total PFOA



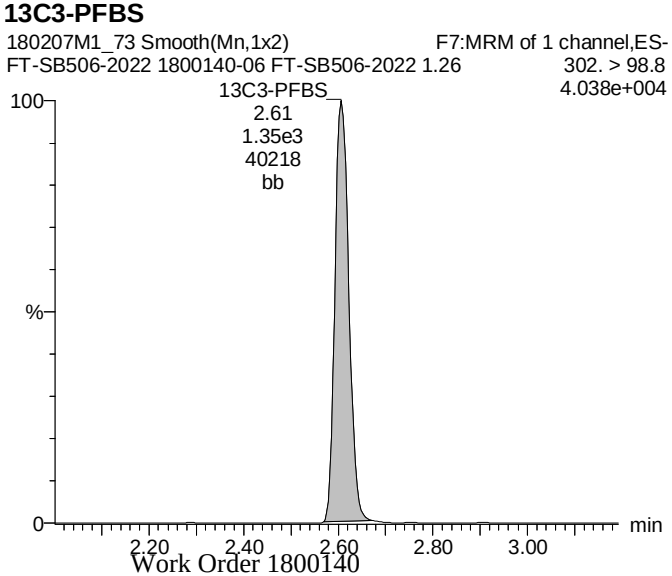


Total PFOS

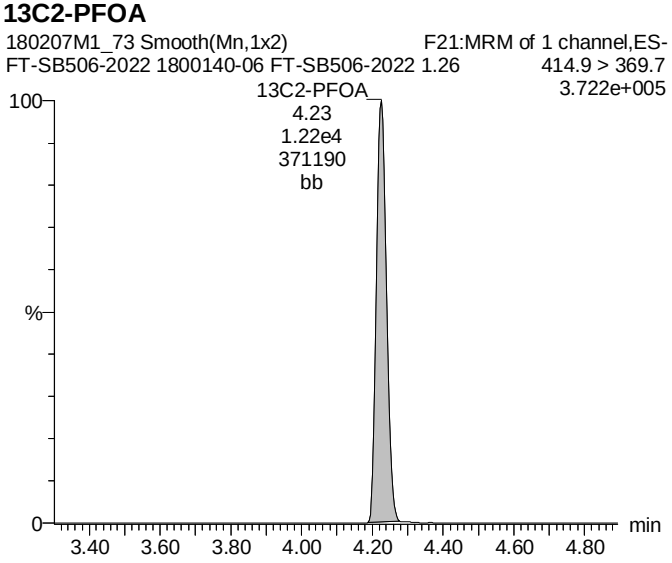




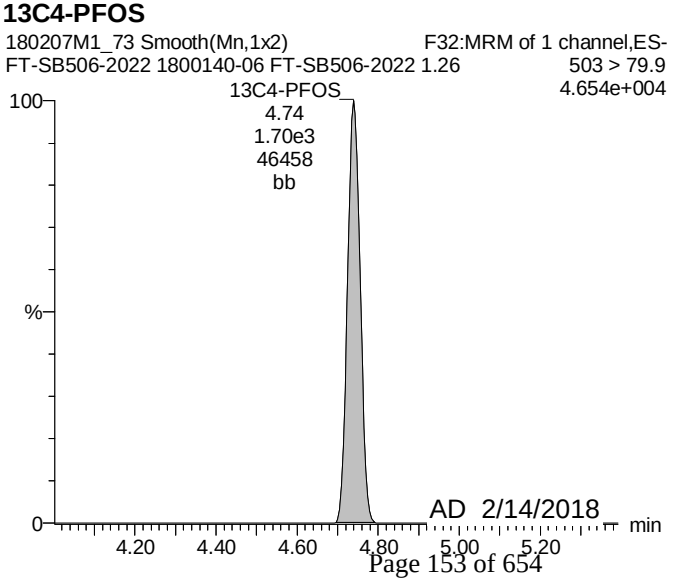
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

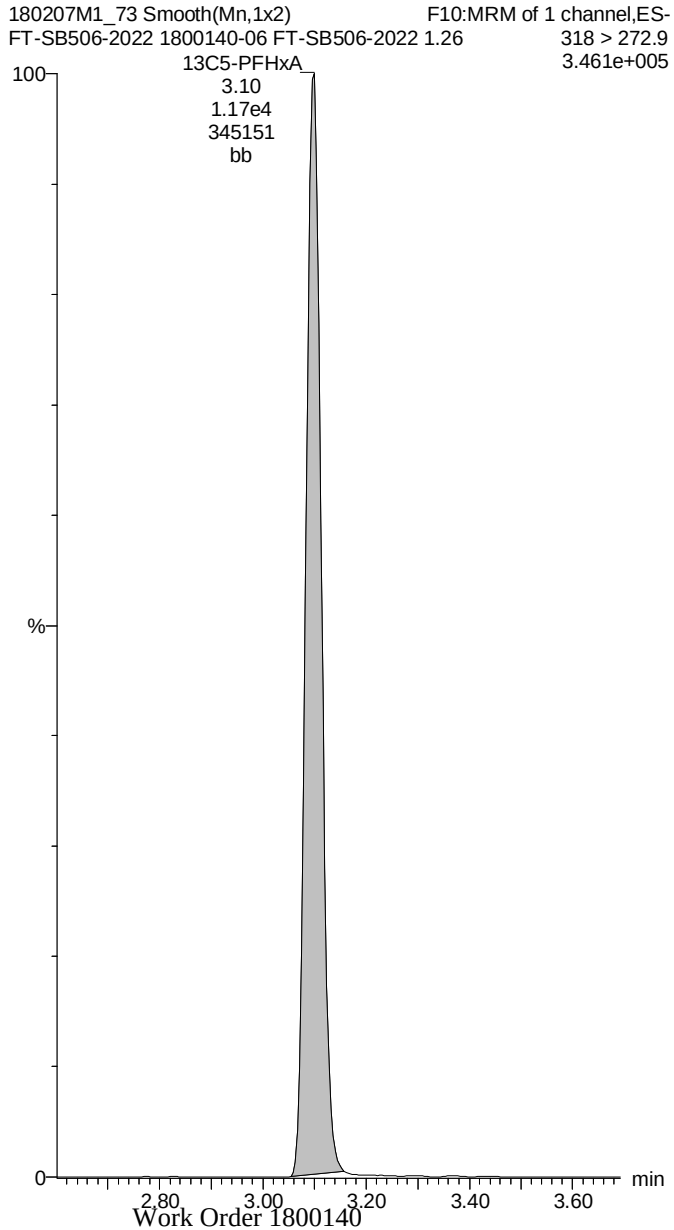
Vista Analytical Laboratory

Dataset: Untitled

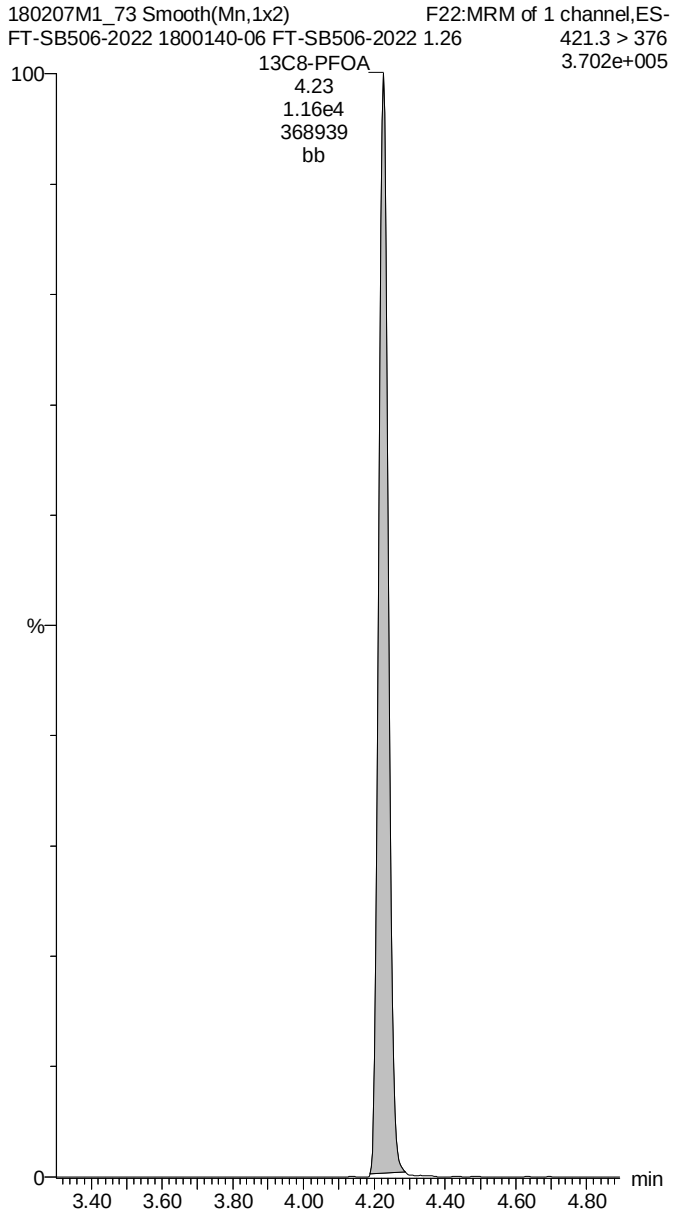
Last Altered: Wednesday, February 14, 2018 13:01:26 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:01:45 Pacific Standard Time

Name: 180207M1_73, Date: 08-Feb-2018, Time: 01:24:57, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

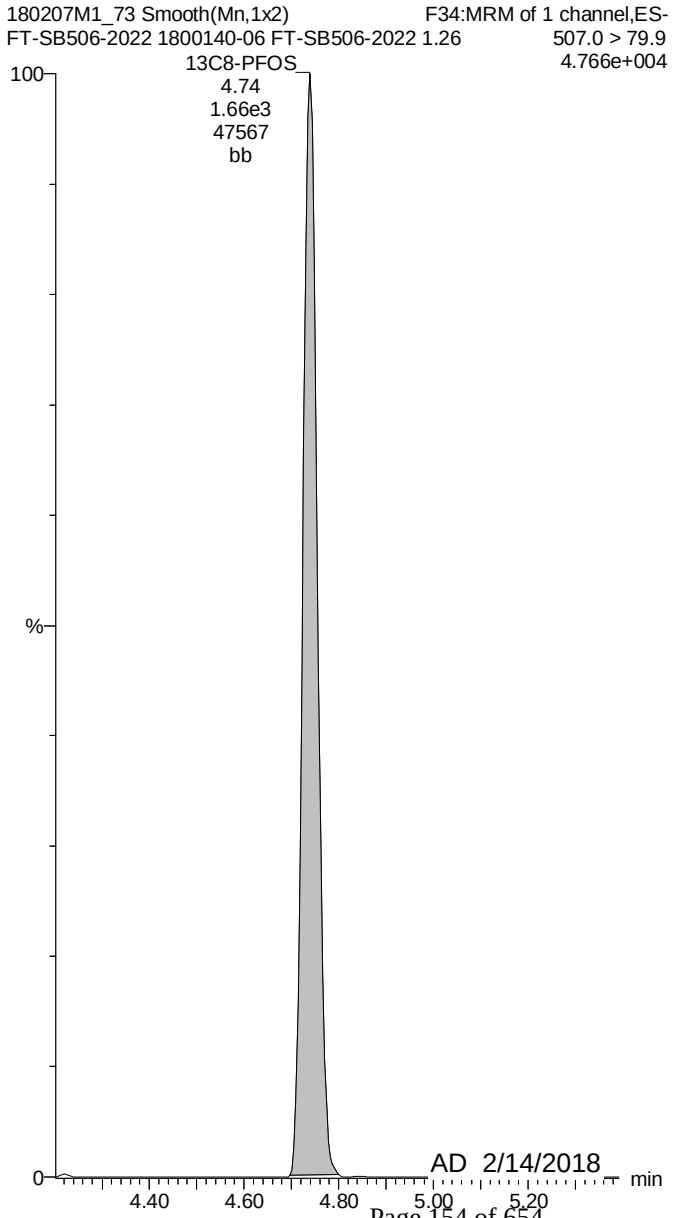
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:02:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:03:05 Pacific Standard Time

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Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_74, Date: 08-Feb-2018, Time: 01:36:28, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.36e3	1.1994		2.69				
2	11	L-PFOA	413 > 368.7	4.31e3	1.01e4	1.1994		4.33	4.23	5.35	4.62	
3	16	L-PFOS	499 > 79.9		1.89e3	1.1994		4.84				
4	36	13C3-PFBS	302. > 98.8	1.36e3	1.10e4	1.1994	0.109	2.69	2.61	1.56	11.9	114.1
5	41	13C2-PFOA	414.9 > 369.7	1.01e4	1.08e4	1.1994	1.069	4.33	4.23	11.7	9.10	87.3
6	44	13C8-PFOS	507.0 > 79.9	1.89e3	1.98e3	1.1994	1.041	4.84	4.74	11.9	9.54	91.5
7	58	13C5-PFHxA	318 > 272.9	1.10e4	1.10e4	1.1994	1.000	3.19	3.10	12.5	10.4	100.0
8	60	13C8-PFOA	421.3 > 376	1.08e4	1.08e4	1.1994	1.000	4.33	4.23	12.5	10.4	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:02:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:03:18 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_74, Date: 08-Feb-2018, Time: 01:36:28, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.98e3	1.98e3	1.1994	1.000	4.84	4.74	12.5	10.4	100.0
2	66	Total PFOA	413 > 368.7	4.68e3	1.01e4	1.1994		4.33		5.81	4.90	
3	67	Total PFOS	499 > 79.9	0.00e0	1.89e3	1.1994		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

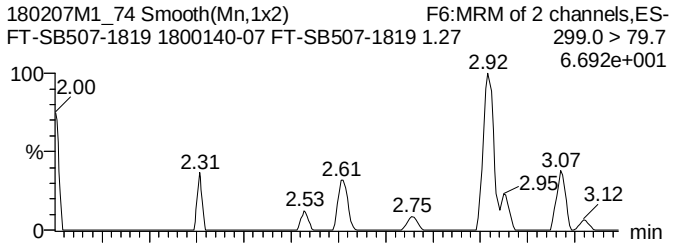
Dataset: Untitled

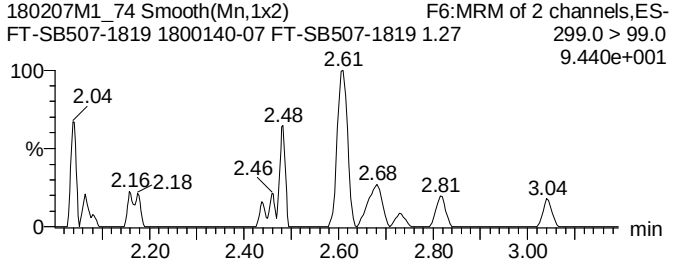
Last Altered: Wednesday, February 14, 2018 13:02:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:03:18 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_74, Date: 08-Feb-2018, Time: 01:36:28, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

PFBS





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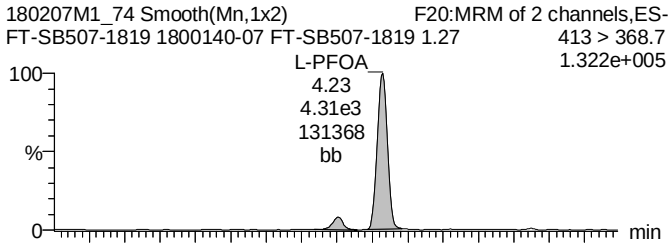
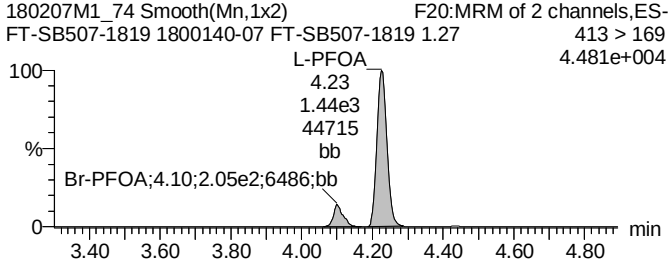
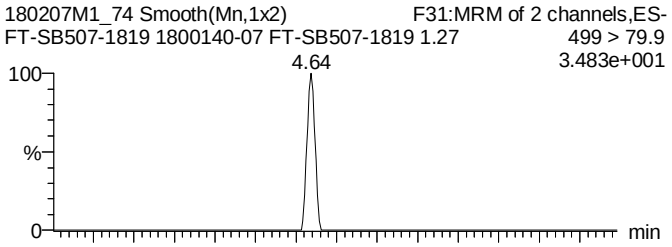
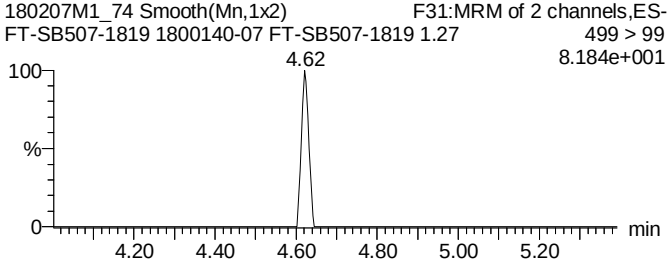


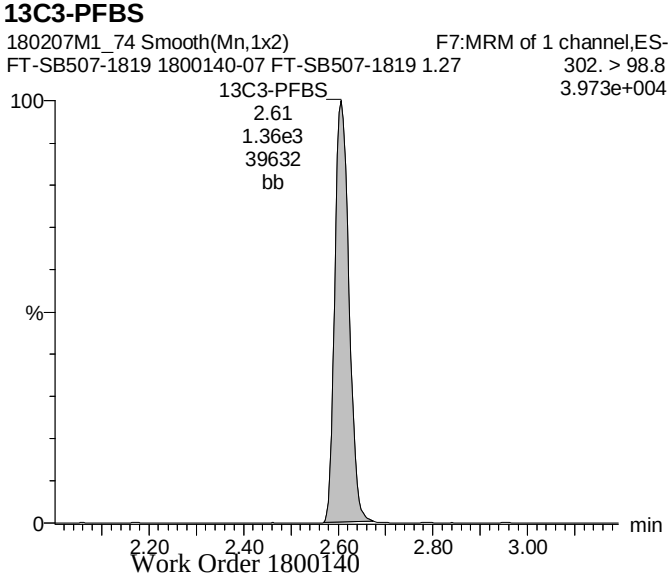


Total PFOS

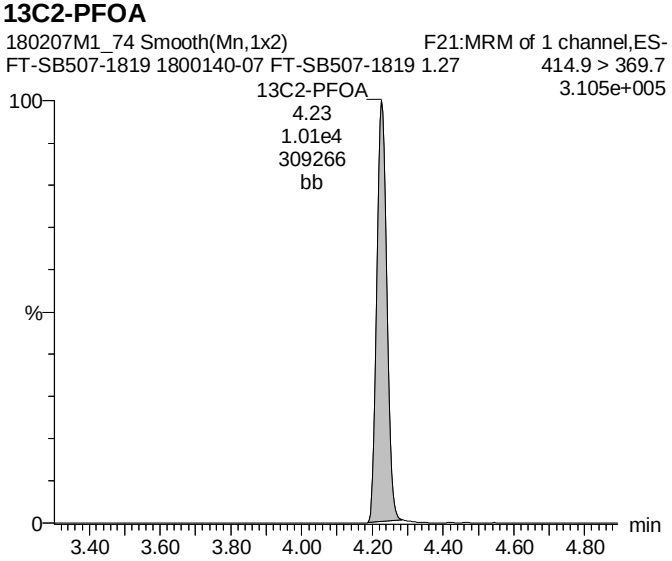




13C3-PFBS



13C2-PFOA



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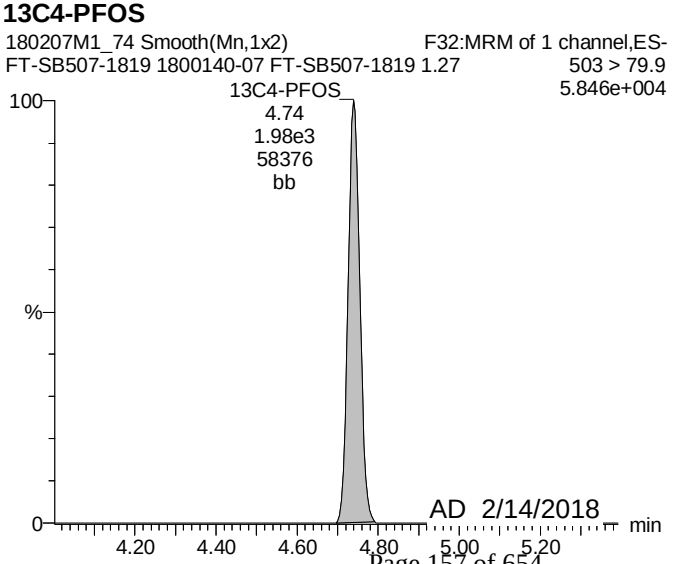


AD 2/14/2018

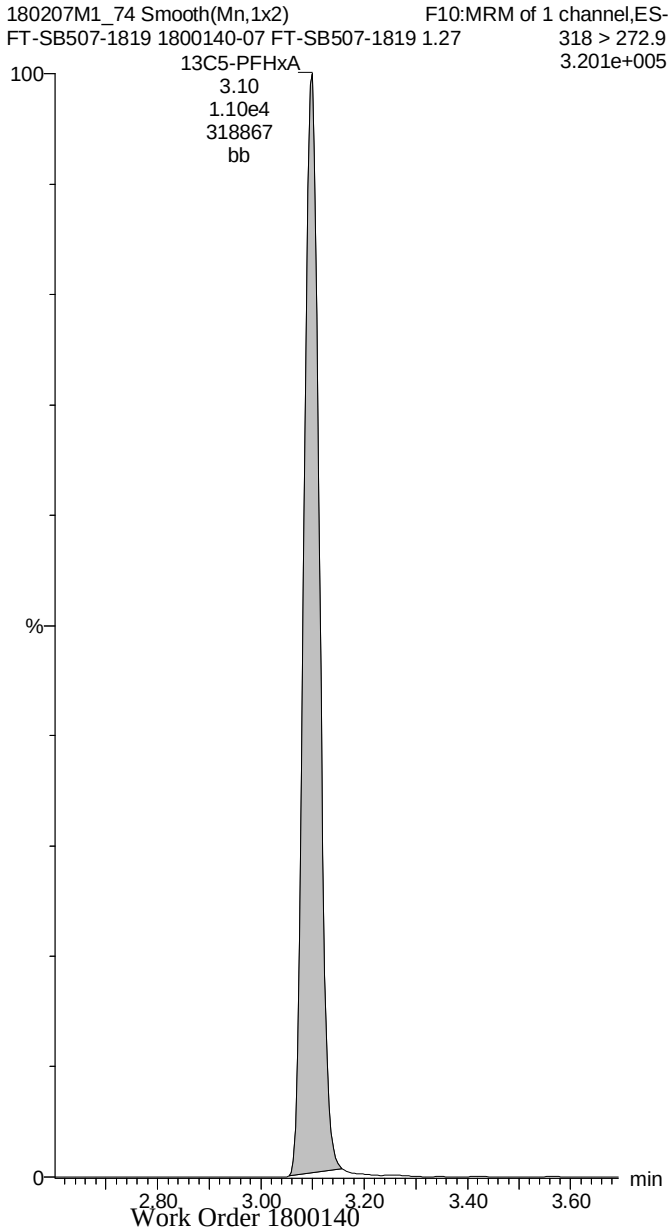
Vista Analytical Laboratory

Dataset: Untitled

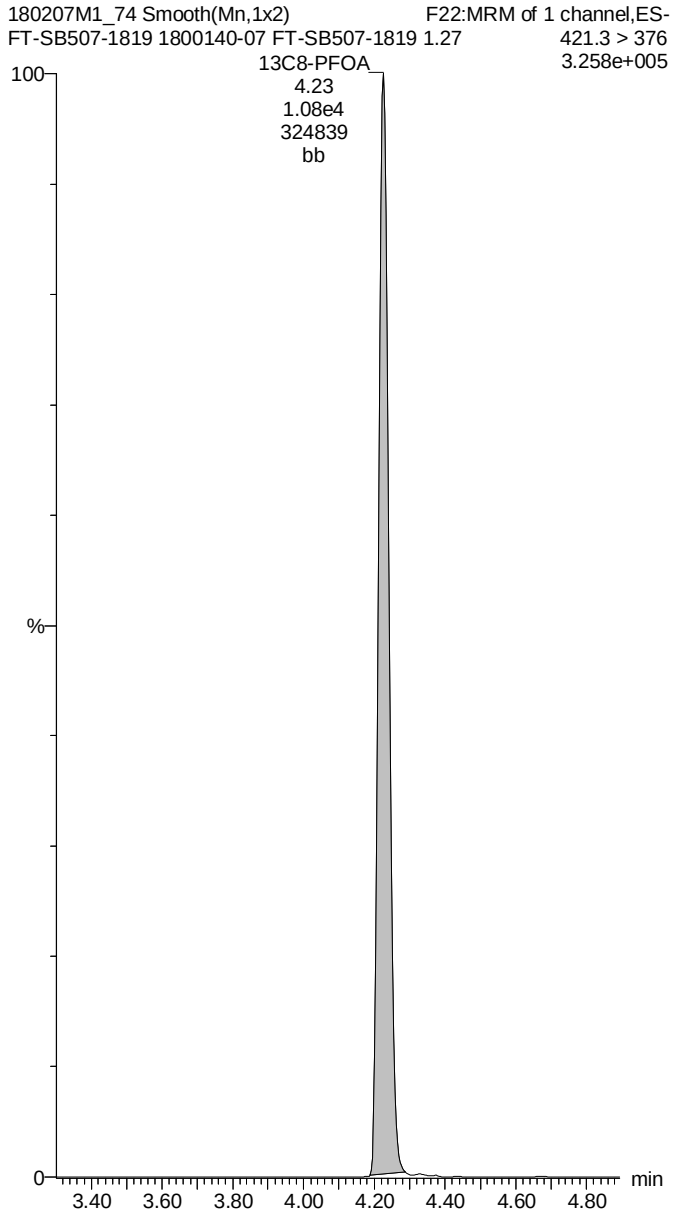
Last Altered: Wednesday, February 14, 2018 13:02:46 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:03:18 Pacific Standard Time

Name: 180207M1_74, Date: 08-Feb-2018, Time: 01:36:28, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

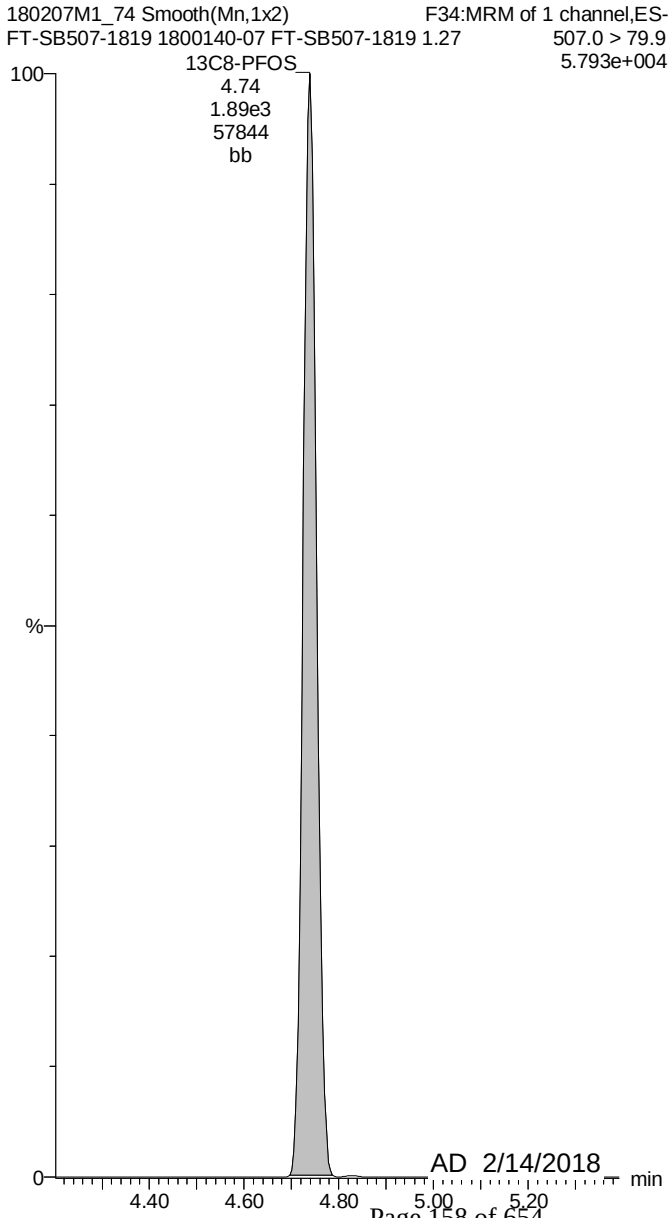
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:04:50 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:05:09 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_75, Date: 08-Feb-2018, Time: 01:47:57, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.46e3	1.1751		2.69				
2	11	L-PFOA	413 > 368.7	2.46e2	1.22e4	1.1751		4.33	4.23	0.252	0.107	
3	16	L-PFOS	499 > 79.9	1.90e3	1.38e3	1.1751		4.84	4.74	17.1	13.0	
4	36	13C3-PFBS	302. > 98.8	1.46e3	1.31e4	1.1751	0.109	2.69	2.61	1.39	10.9	102.2
5	41	13C2-PFOA	414.9 > 369.7	1.22e4	1.17e4	1.1751	1.069	4.33	4.23	13.1	10.4	97.8
6	44	13C8-PFOS	507.0 > 79.9	1.38e3	1.31e3	1.1751	1.041	4.84	4.74	13.2	10.8	101.2
7	58	13C5-PFHxA	318 > 272.9	1.31e4	1.31e4	1.1751	1.000	3.19	3.10	12.5	10.6	100.0
8	60	13C8-PFOA	421.3 > 376	1.17e4	1.17e4	1.1751	1.000	4.33	4.23	12.5	10.6	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:04:50 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:05:18 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_75, Date: 08-Feb-2018, Time: 01:47:57, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.31e3	1.31e3	1.1751	1.000	4.84	4.74	12.5	10.6	100.0
2	66	Total PFOA	413 > 368.7	2.46e2	1.22e4	1.1751		4.33		0.252	0.107	
3	67	Total PFOS	499 > 79.9	1.90e3	1.38e3	1.1751		4.84		17.1	13.0	

AD 2/14/2018

Vista Analytical Laboratory

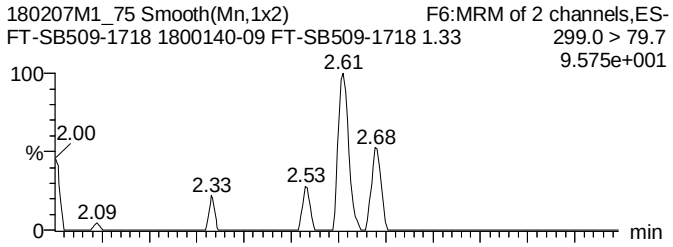
Dataset: Untitled

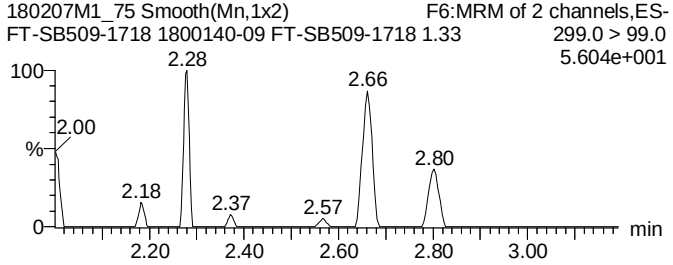
Last Altered: Wednesday, February 14, 2018 13:04:50 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:05:18 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

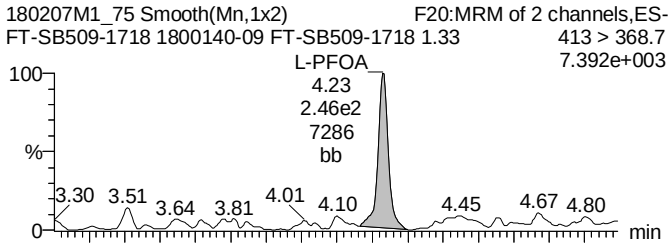
Name: 180207M1_75, Date: 08-Feb-2018, Time: 01:47:57, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

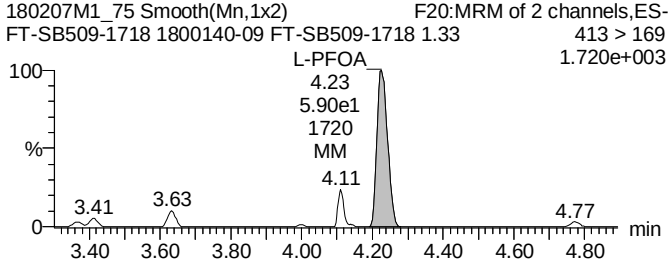
PFBS



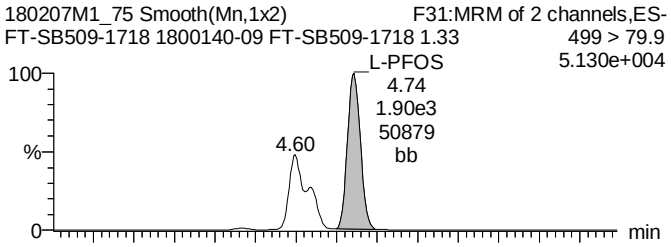


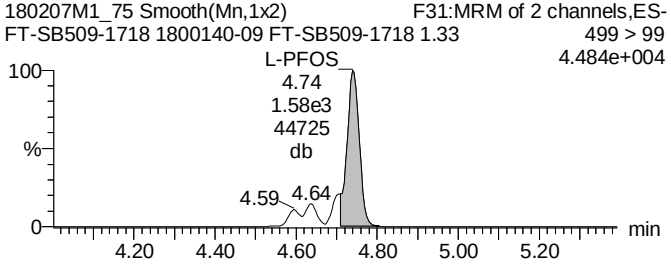
Total PFOA



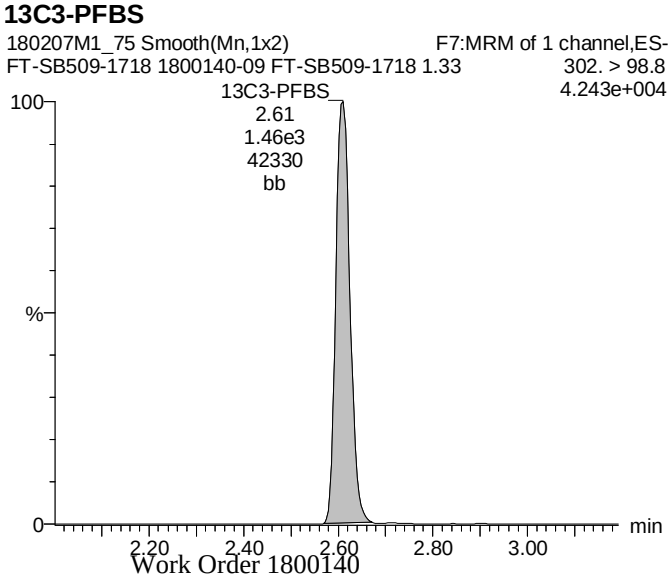


Total PFOS

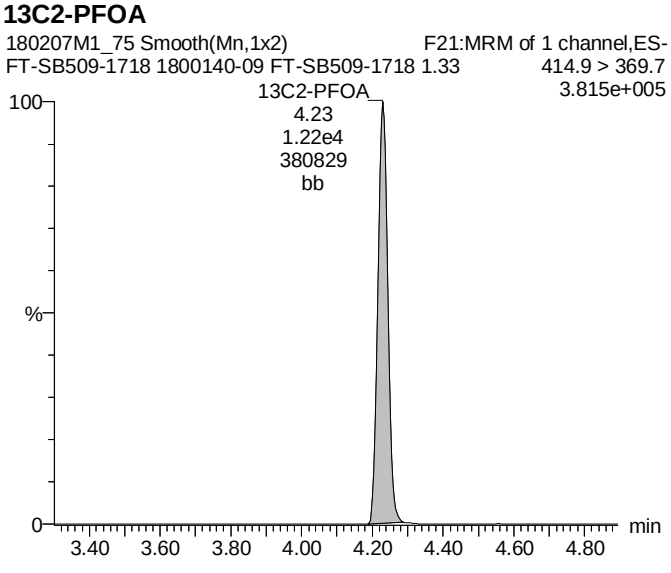




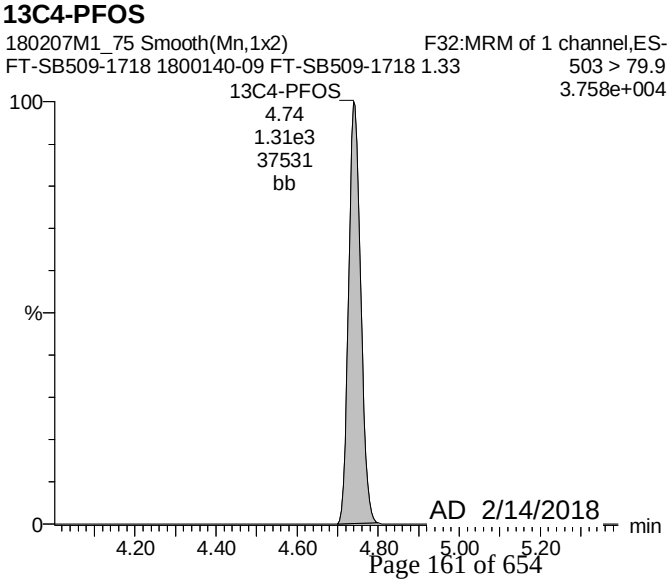
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

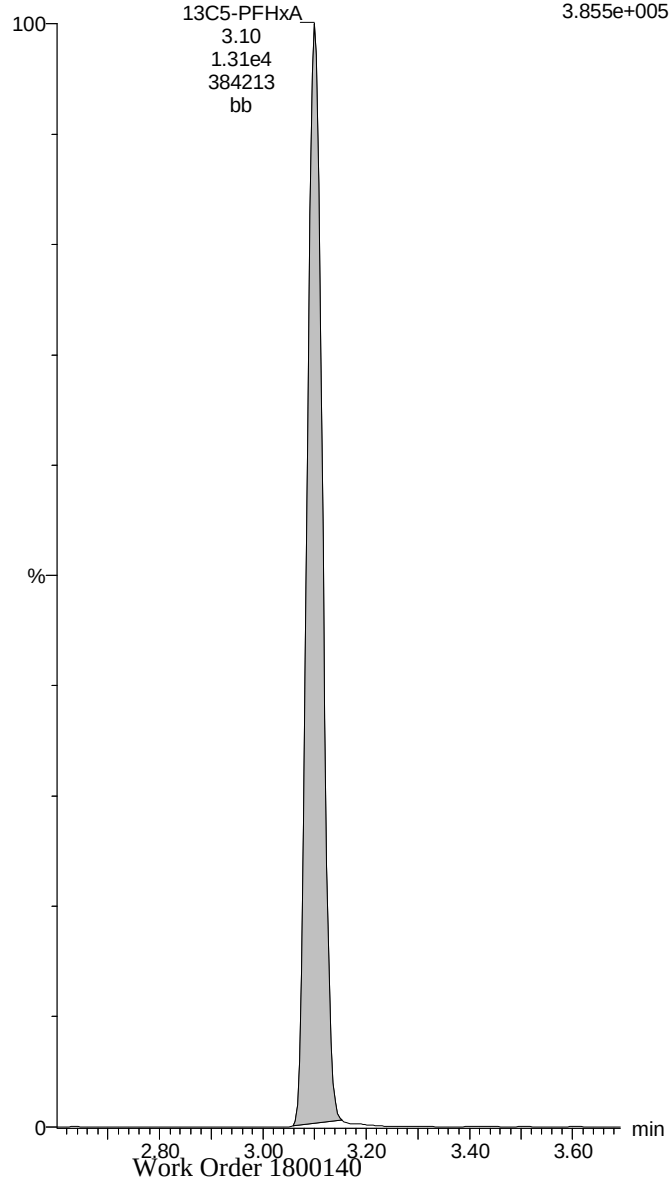
Vista Analytical Laboratory

Dataset: Untitled

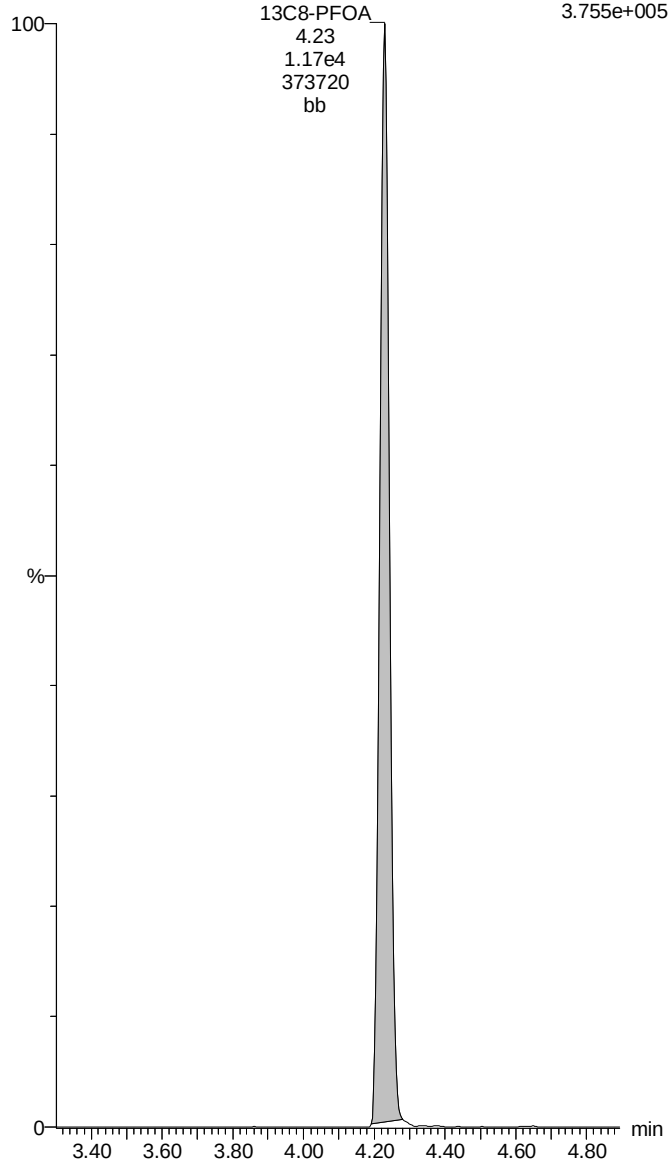
Last Altered: Wednesday, February 14, 2018 13:04:50 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:05:18 Pacific Standard Time

Name: 180207M1_75, Date: 08-Feb-2018, Time: 01:47:57, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

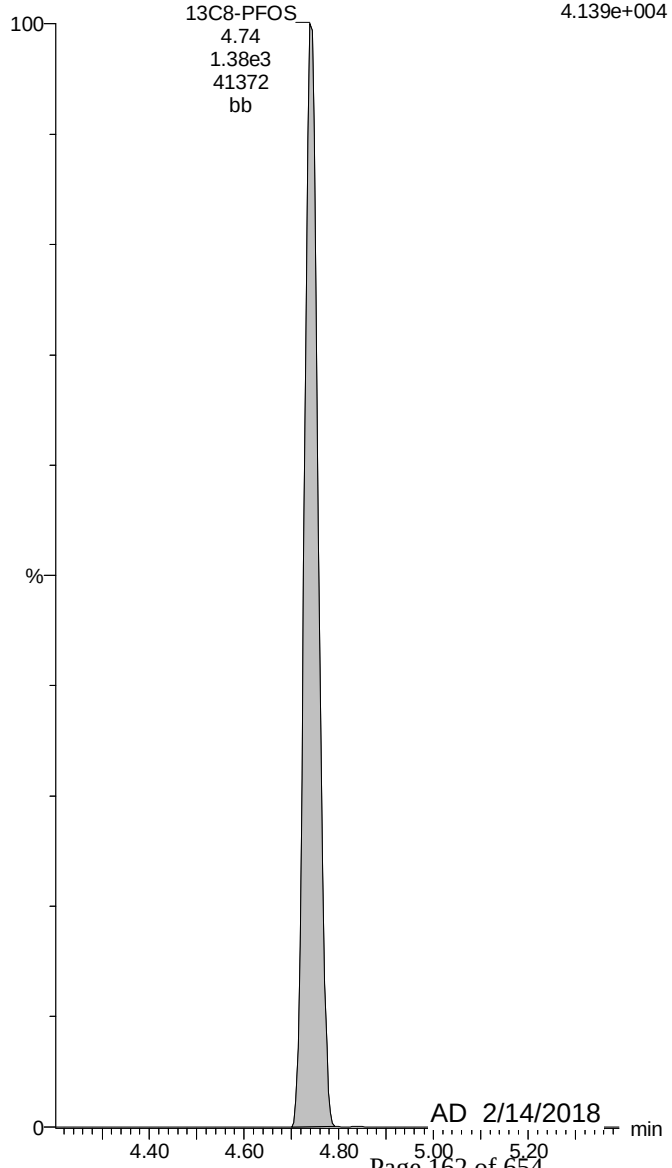
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:06:36 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:06:47 Pacific Standard Time

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Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_76, Date: 08-Feb-2018, Time: 01:59:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.29e3	1.0542		2.69				
2	11	L-PFOA	413 > 368.7	5.54e2	9.52e3	1.0542		4.33	4.23	0.728	0.598	
3	16	L-PFOS	499 > 79.9	1.36e2	1.46e3	1.0542		4.84	4.74	1.16	1.04	
4	36	13C3-PFBS	302. > 98.8	1.29e3	9.21e3	1.0542	0.109	2.69	2.60	1.75	15.2	128.2
5	41	13C2-PFOA	414.9 > 369.7	9.52e3	9.33e3	1.0542	1.069	4.33	4.23	12.7	11.3	95.4
6	44	13C8-PFOS	507.0 > 79.9	1.46e3	1.56e3	1.0542	1.041	4.84	4.74	11.8	10.7	90.3
7	58	13C5-PFHxA	318 > 272.9	9.21e3	9.21e3	1.0542	1.000	3.19	3.10	12.5	11.9	100.0
8	60	13C8-PFOA	421.3 > 376	9.33e3	9.33e3	1.0542	1.000	4.33	4.23	12.5	11.9	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:06:36 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:06:55 Pacific Standard Time

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Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_76, Date: 08-Feb-2018, Time: 01:59:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.56e3	1.56e3	1.0542	1.000	4.84	4.74	12.5	11.9	100.0
2	66	Total PFOA	413 > 368.7	5.54e2	9.52e3	1.0542		4.33		0.728	0.598	
3	67	Total PFOS	499 > 79.9	1.36e2	1.46e3	1.0542		4.84		1.16	1.04	

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:06:36 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:06:55 Pacific Standard Time

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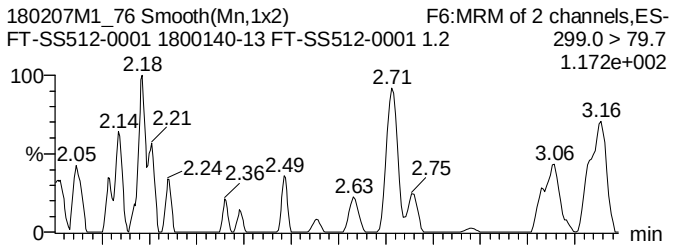
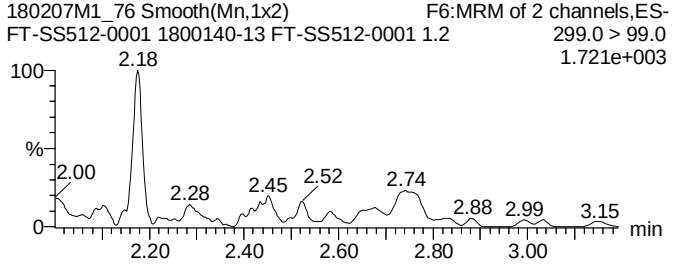
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

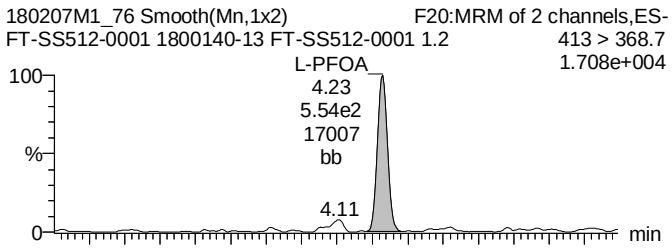
Name: 180207M1_76, Date: 08-Feb-2018, Time: 01:59:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

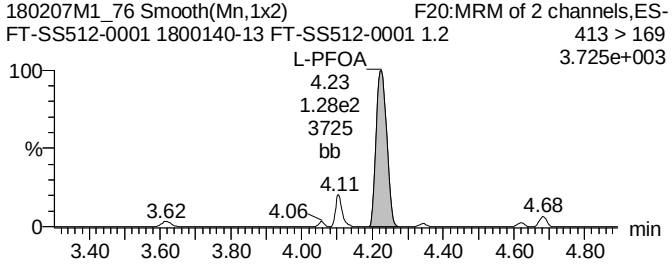
PFBS



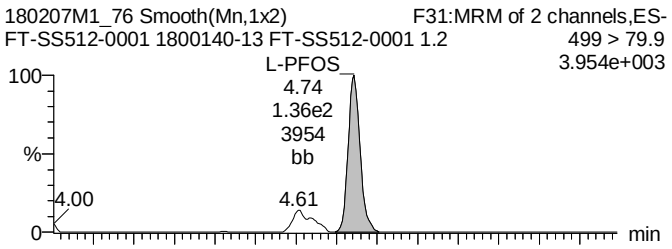


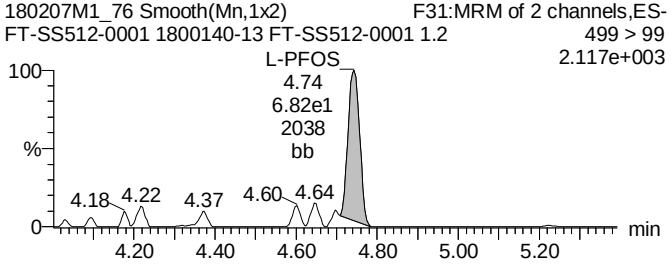
Total PFOA



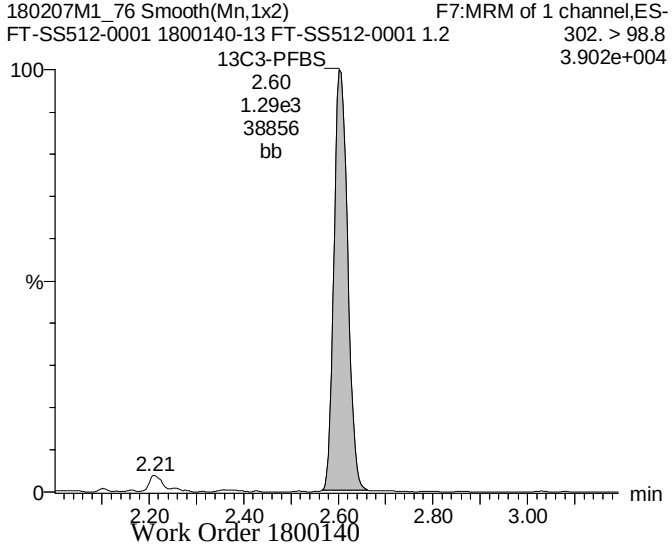


Total PFOS

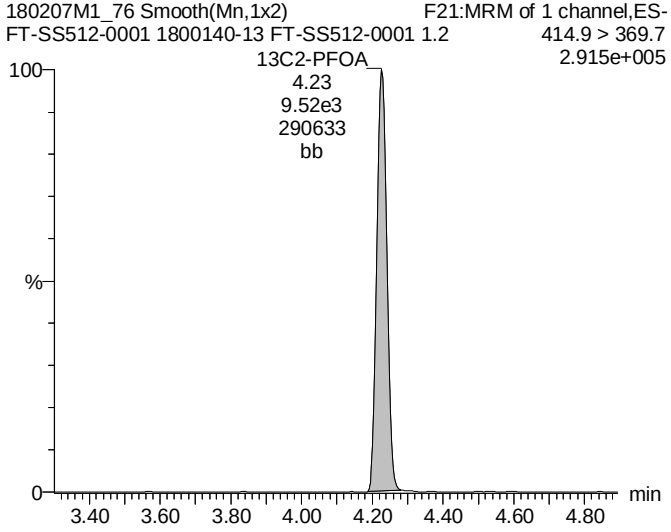




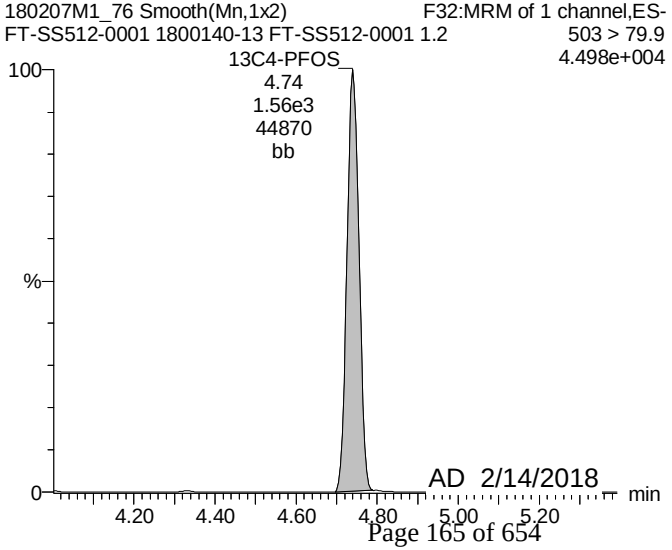
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

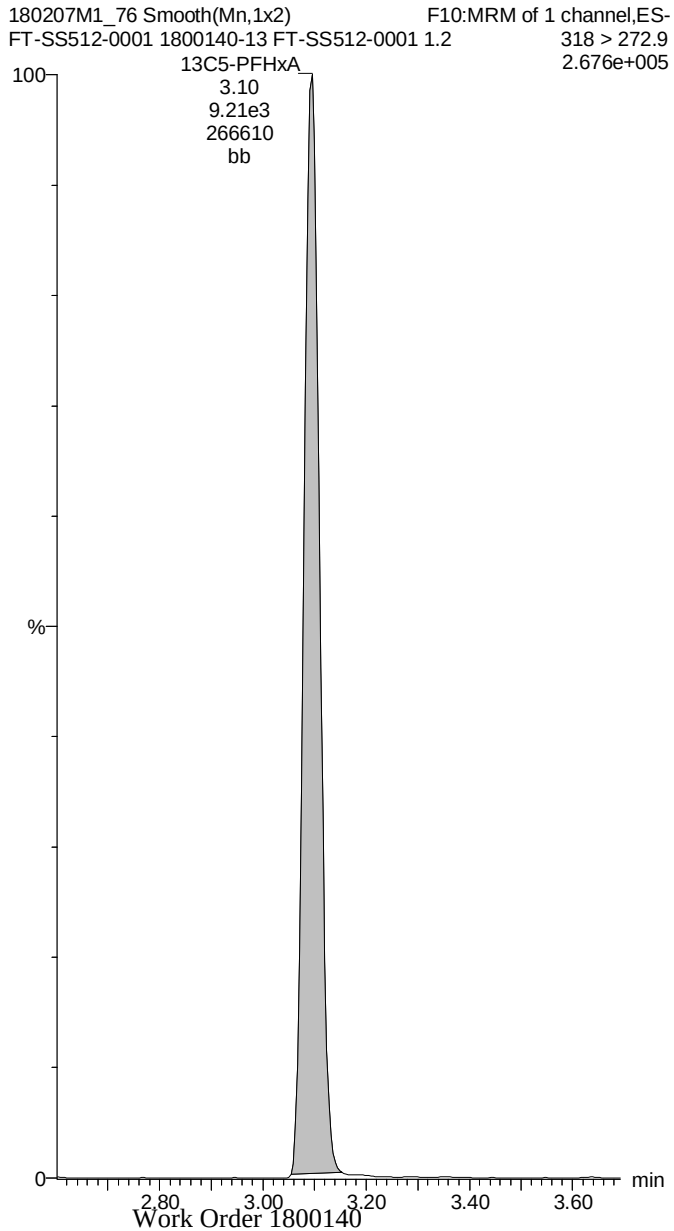
Vista Analytical Laboratory

Dataset: Untitled

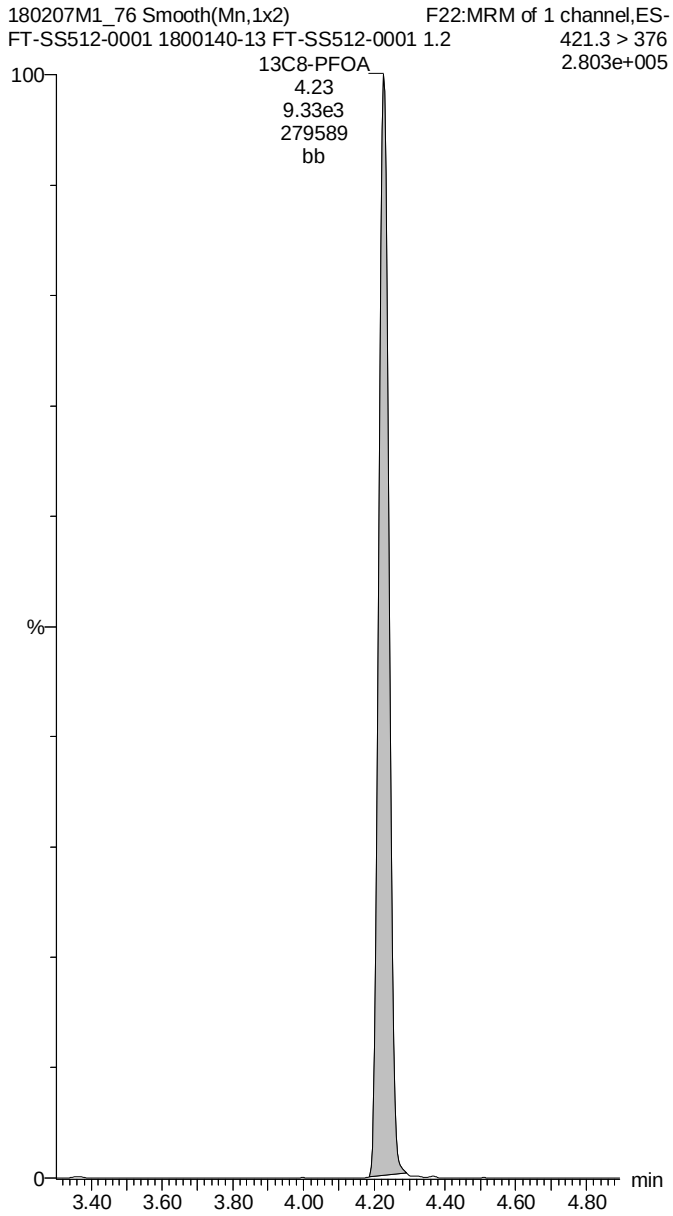
Last Altered: Wednesday, February 14, 2018 13:06:36 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:06:55 Pacific Standard Time

Name: 180207M1_76, Date: 08-Feb-2018, Time: 01:59:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

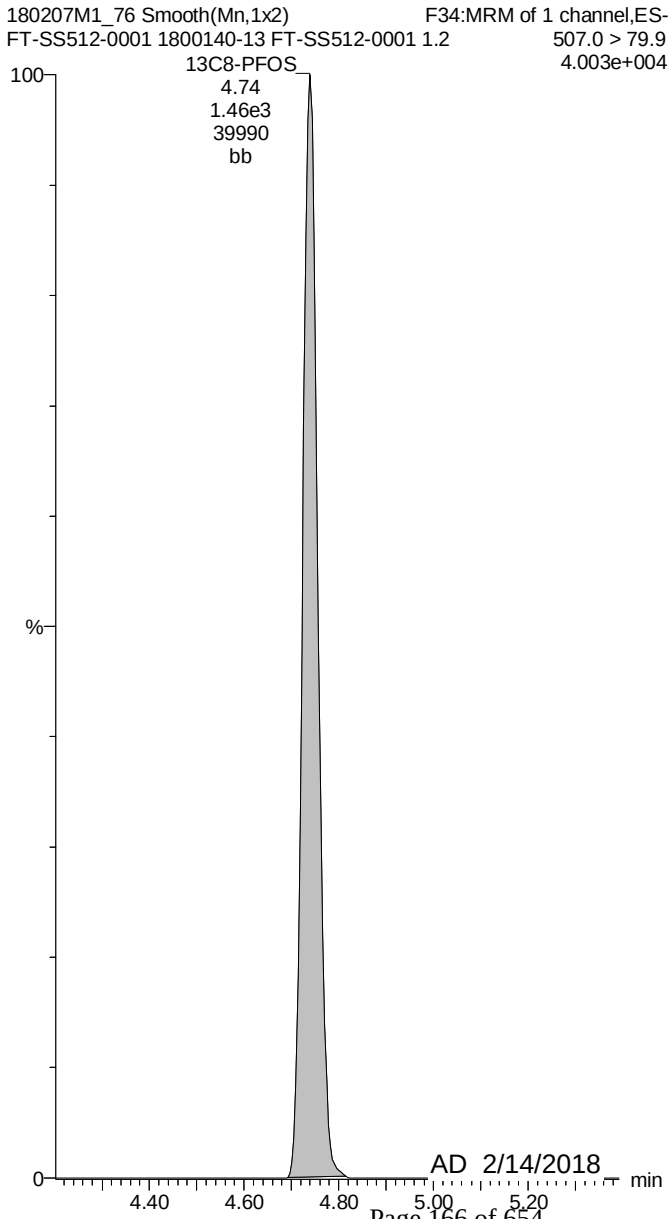
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:08:00 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:08:35 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_77, Date: 08-Feb-2018, Time: 02:10:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.36e3	1.1525		2.69				
2	11	L-PFOA	413 > 368.7		1.01e4	1.1525		4.33				
3	16	L-PFOS	499 > 79.9		1.25e3	1.1525		4.84				
4	36	13C3-PFBS	302. > 98.8	1.36e3	1.21e4	1.1525	0.109	2.69	2.61	1.41	11.2	103.1
5	41	13C2-PFOA	414.9 > 369.7	1.01e4	1.11e4	1.1525	1.069	4.33	4.23	11.5	9.31	85.8
6	44	13C8-PFOS	507.0 > 79.9	1.25e3	1.14e3	1.1525	1.041	4.84	4.74	13.6	11.4	104.8
7	58	13C5-PFHxA	318 > 272.9	1.21e4	1.21e4	1.1525	1.000	3.19	3.10	12.5	10.8	100.0
8	60	13C8-PFOA	421.3 > 376	1.11e4	1.11e4	1.1525	1.000	4.33	4.23	12.5	10.8	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:08:00 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:08:41 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_77, Date: 08-Feb-2018, Time: 02:10:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.14e3	1.14e3	1.1525	1.000	4.84	4.74	12.5	10.8	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	1.01e4	1.1525		4.33		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.25e3	1.1525		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

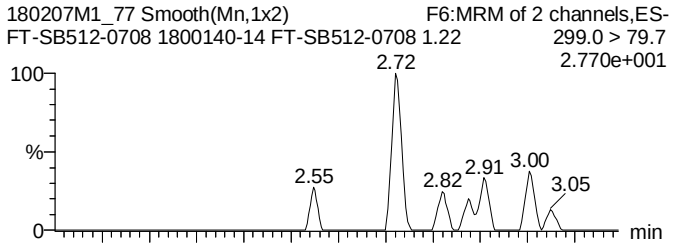
Dataset: Untitled

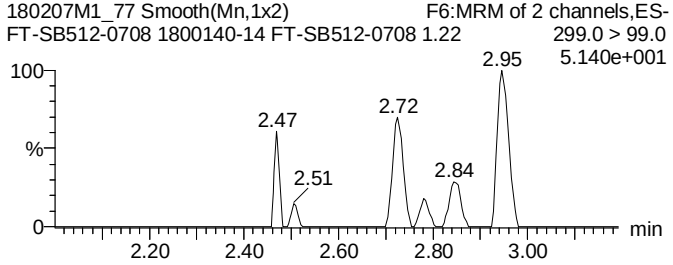
Last Altered: Wednesday, February 14, 2018 13:08:00 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:08:41 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

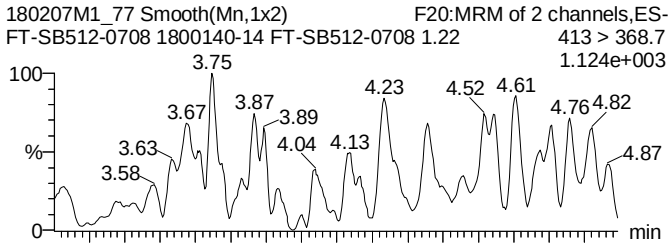
Name: 180207M1_77, Date: 08-Feb-2018, Time: 02:10:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

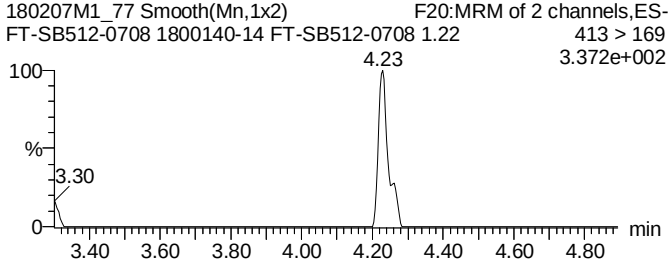
PFBS



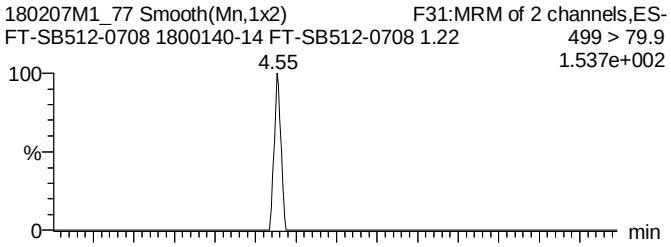


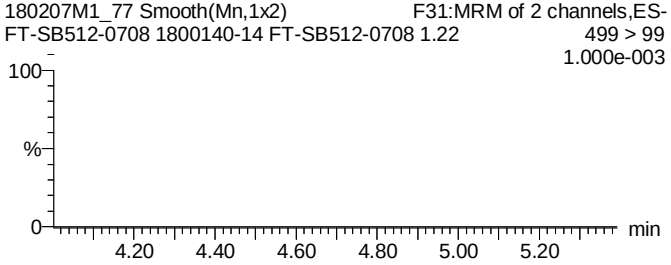
Total PFOA



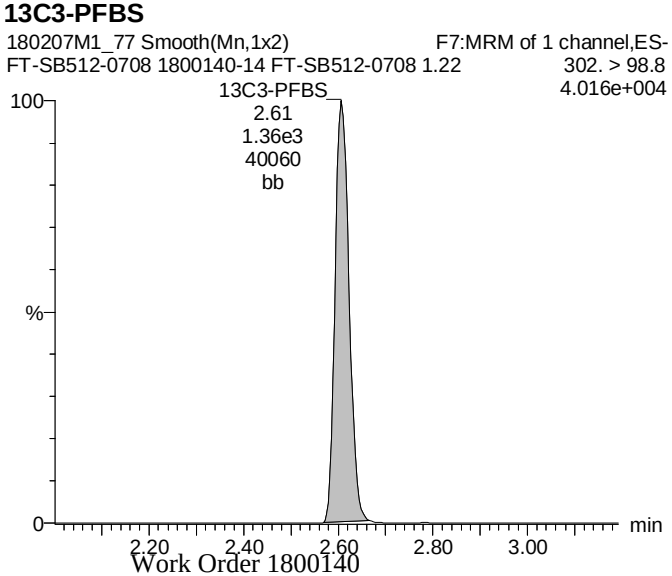


Total PFOS

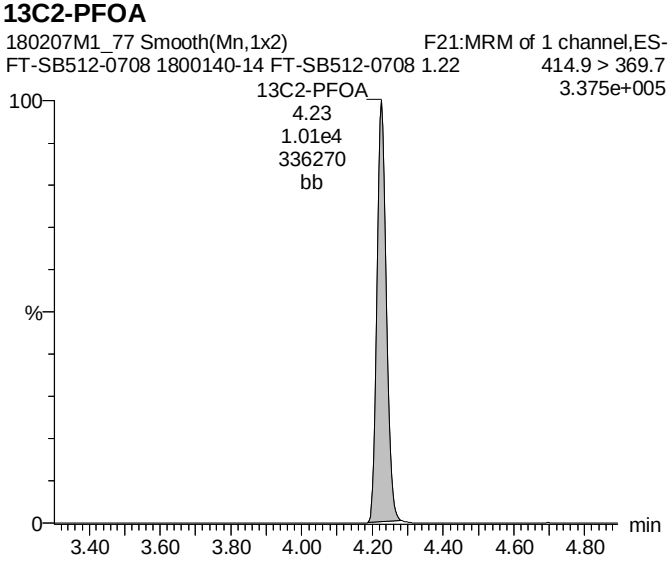




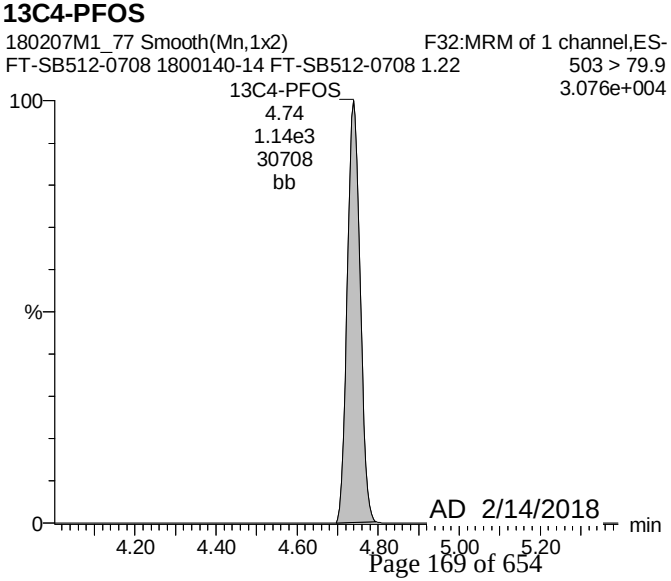
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

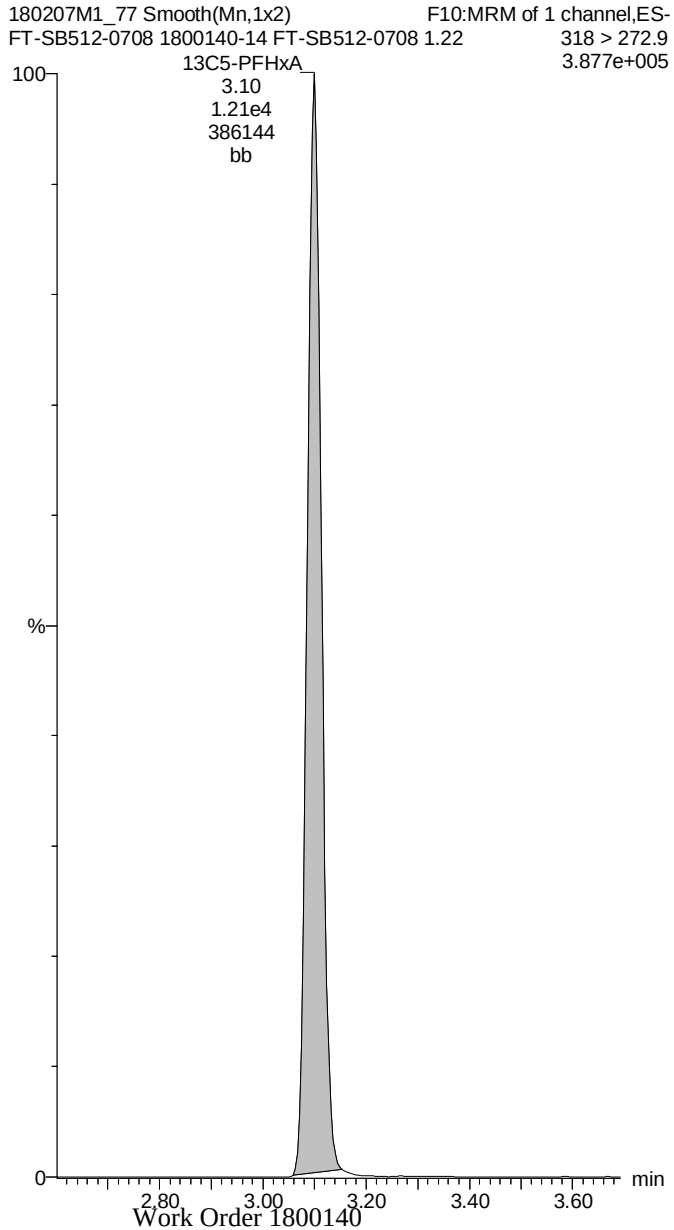
Vista Analytical Laboratory

Dataset: Untitled

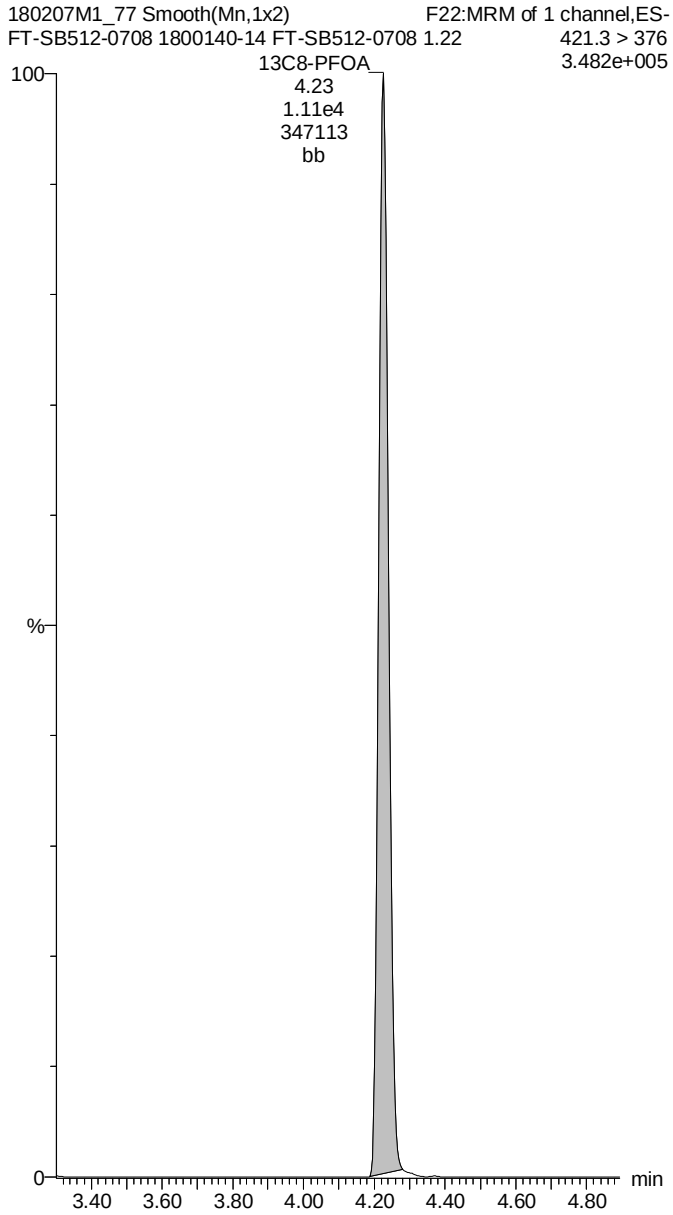
Last Altered: Wednesday, February 14, 2018 13:08:00 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:08:41 Pacific Standard Time

Name: 180207M1_77, Date: 08-Feb-2018, Time: 02:10:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

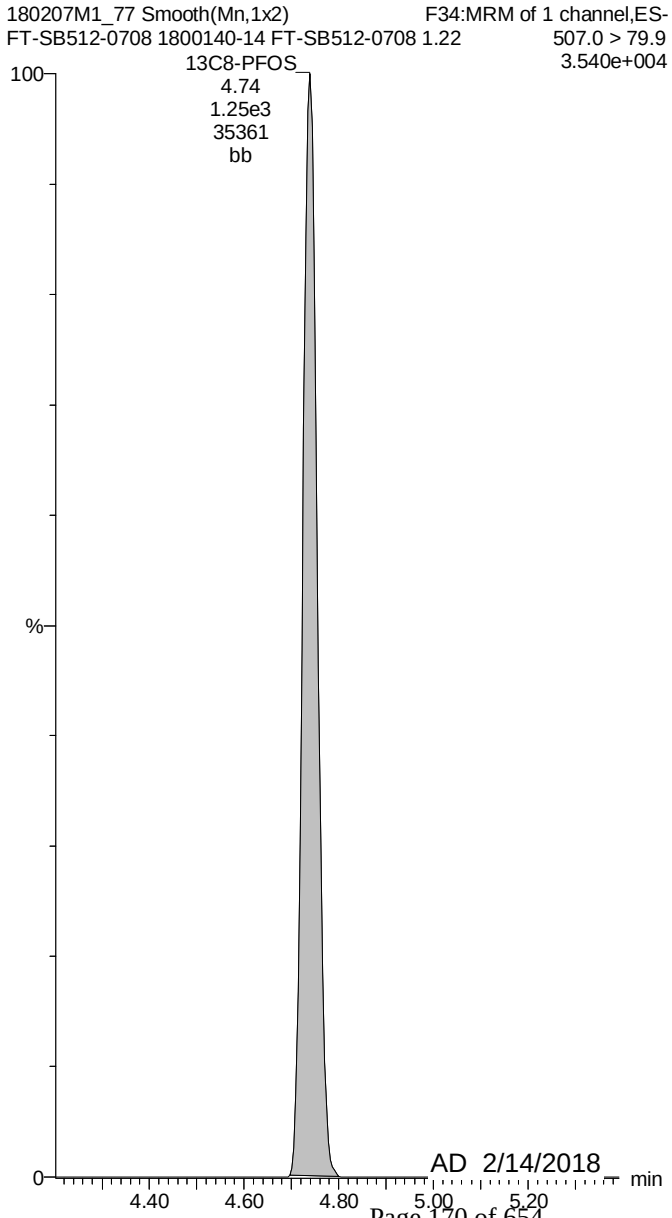
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:09:53 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:10:07 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_78, Date: 08-Feb-2018, Time: 02:22:23, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.31e3	1.0220		2.69				
2	11	L-PFOA	413 > 368.7	7.06e1	8.89e3	1.0220		4.33	4.23	0.0993		
3	16	L-PFOS	499 > 79.9		1.07e3	1.0220		4.84				
4	36	13C3-PFBS	302. > 98.8	1.31e3	1.12e4	1.0220	0.109	2.69	2.61	1.45	13.0	106.3
5	41	13C2-PFOA	414.9 > 369.7	8.89e3	1.06e4	1.0220	1.069	4.33	4.23	10.5	9.57	78.2
6	44	13C8-PFOS	507.0 > 79.9	1.07e3	1.04e3	1.0220	1.041	4.84	4.74	12.8	12.0	98.4
7	58	13C5-PFHxA	318 > 272.9	1.12e4	1.12e4	1.0220	1.000	3.19	3.10	12.5	12.2	100.0
8	60	13C8-PFOA	421.3 > 376	1.06e4	1.06e4	1.0220	1.000	4.33	4.23	12.5	12.2	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:09:53 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:10:15 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_78, Date: 08-Feb-2018, Time: 02:22:23, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	1.04e3	1.04e3	1.0220	1.000	4.84	4.74	12.5	12.2	100.0
2	66	Total PFOA	413 > 368.7	7.06e1	8.89e3	1.0220		4.33		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.07e3	1.0220		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

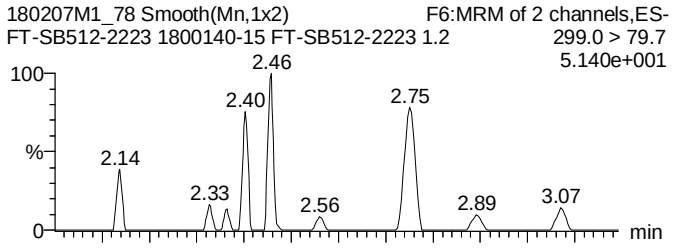
Dataset: Untitled

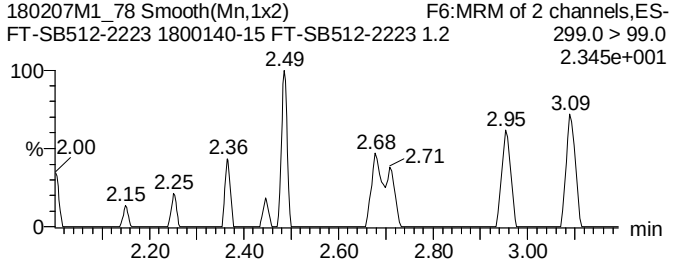
Last Altered: Wednesday, February 14, 2018 13:09:53 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:10:15 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

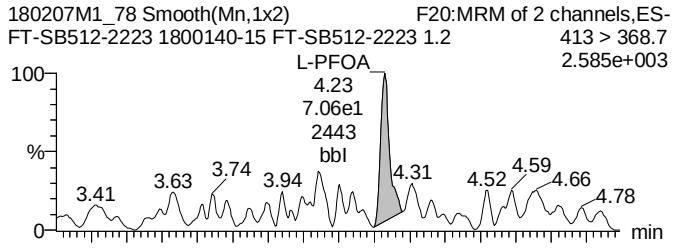
Name: 180207M1_78, Date: 08-Feb-2018, Time: 02:22:23, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

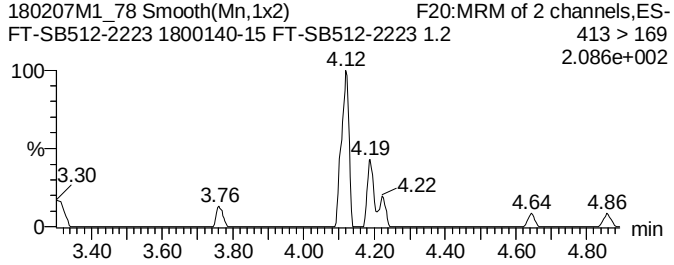
PFBS



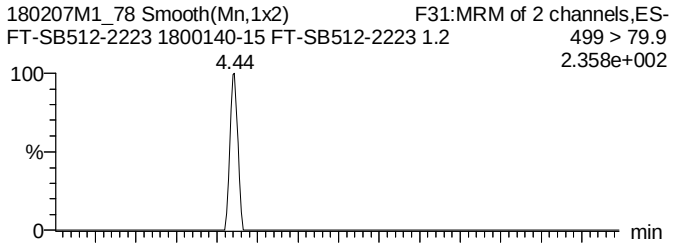


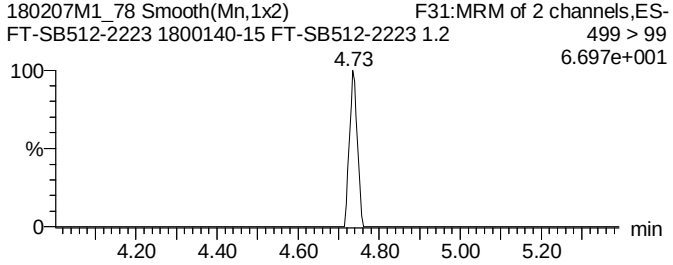
Total PFOA



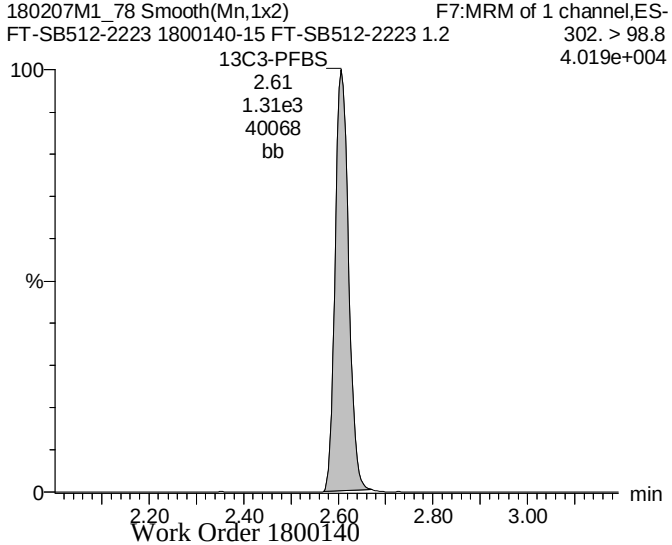


Total PFOS

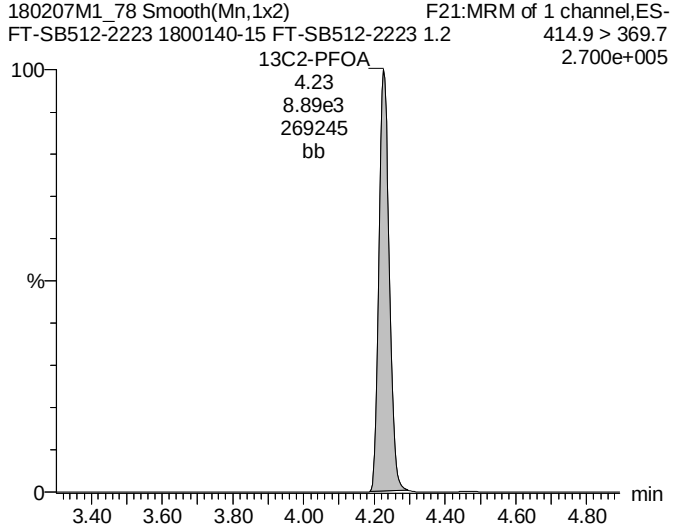




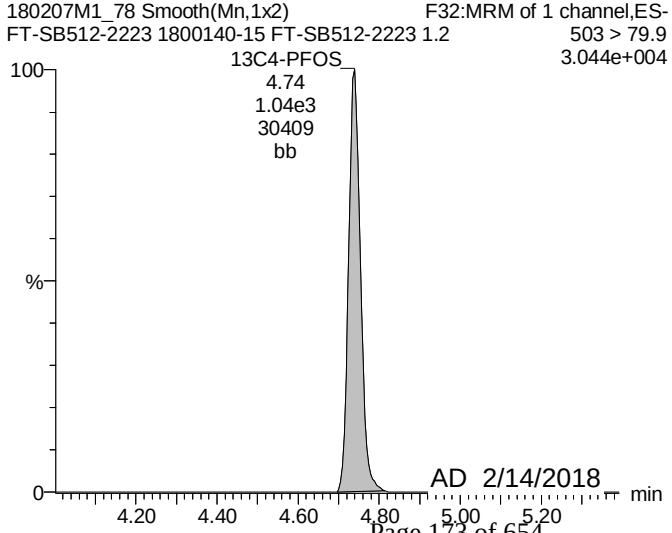
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

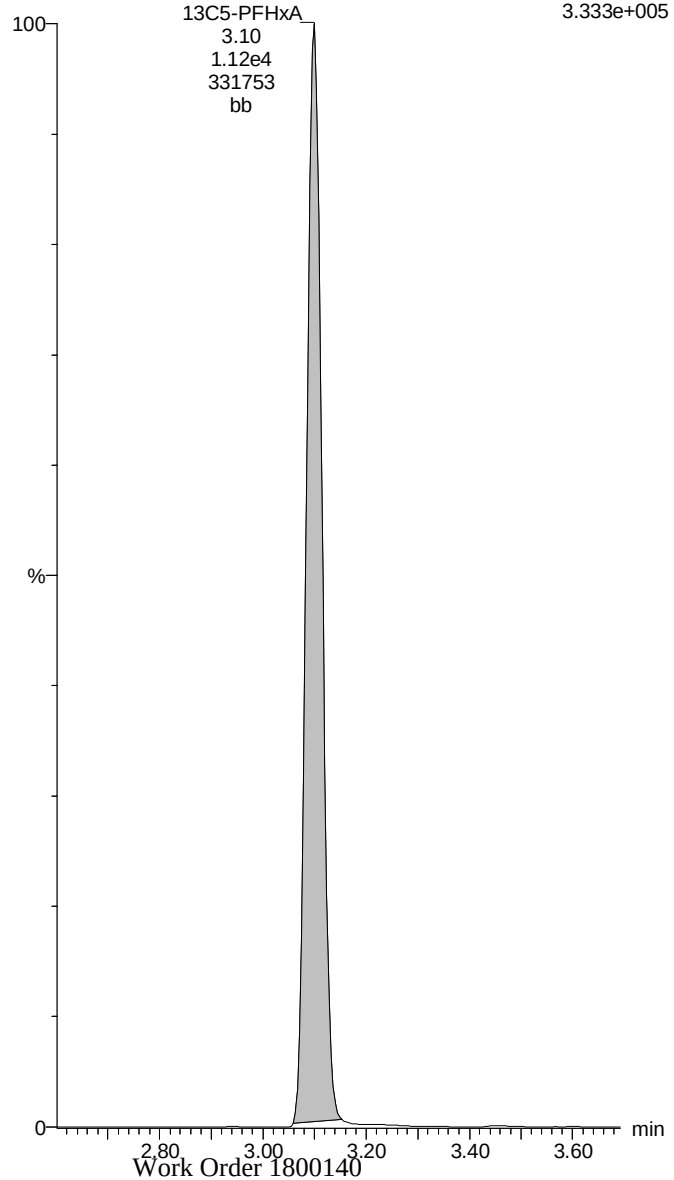
Vista Analytical Laboratory

Dataset: Untitled

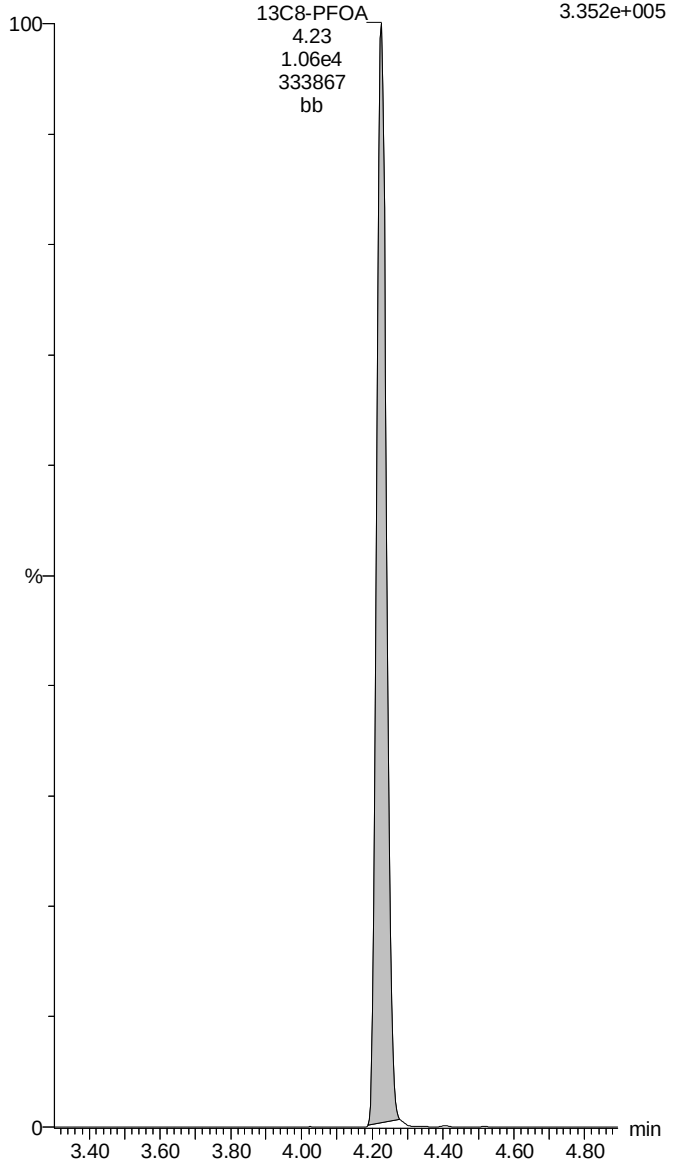
Last Altered: Wednesday, February 14, 2018 13:09:53 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:10:15 Pacific Standard Time

Name: 180207M1_78, Date: 08-Feb-2018, Time: 02:22:23, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

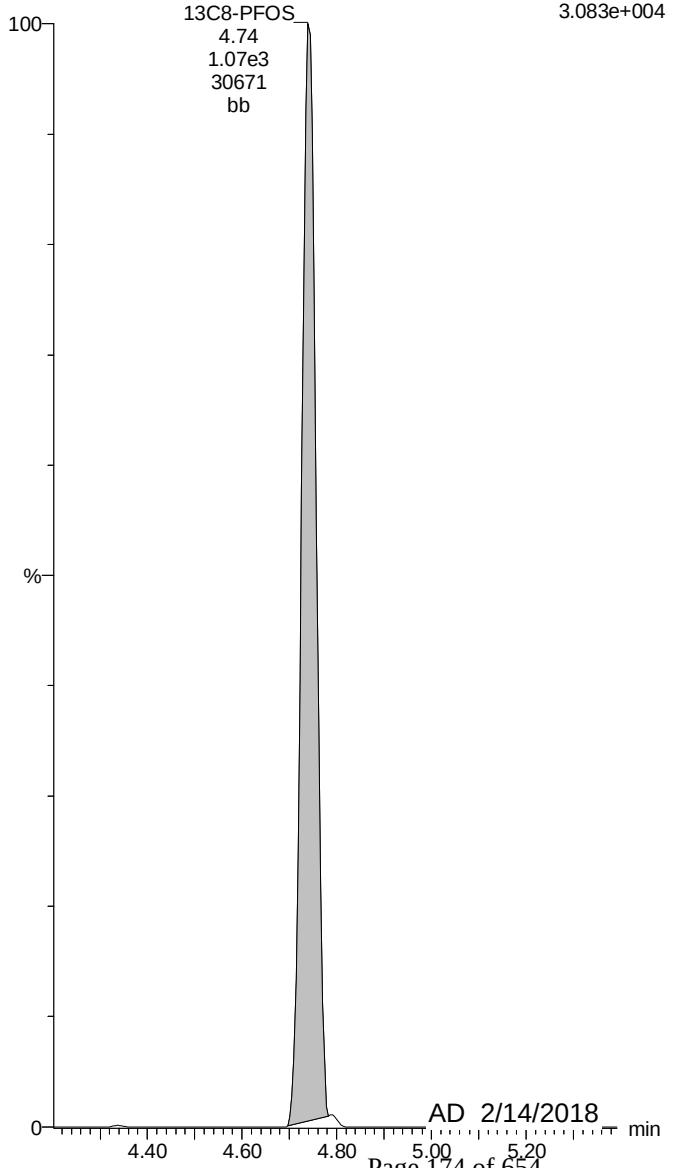
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:11:18 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:11:51 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_82, Date: 08-Feb-2018, Time: 03:08:19, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.27e3	1.1551		2.69				
2	11	L-PFOA	413 > 368.7		1.01e4	1.1551		4.33				
3	16	L-PFOS	499 > 79.9		1.01e3	1.1551		4.84				
4	36	13C3-PFBS	302. > 98.8	1.27e3	1.09e4	1.1551	0.109	2.69	2.61	1.46	11.6	106.8
5	41	13C2-PFOA	414.9 > 369.7	1.01e4	9.19e3	1.1551	1.069	4.33	4.23	13.8	11.1	103.0
6	44	13C8-PFOS	507.0 > 79.9	1.01e3	9.59e2	1.1551	1.041	4.84	4.74	13.1	10.9	100.9
7	58	13C5-PFHxA	318 > 272.9	1.09e4	1.09e4	1.1551	1.000	3.19	3.10	12.5	10.8	100.0
8	60	13C8-PFOA	421.3 > 376	9.19e3	9.19e3	1.1551	1.000	4.33	4.23	12.5	10.8	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:11:18 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:12:01 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_82, Date: 08-Feb-2018, Time: 03:08:19, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	9.59e2	9.59e2	1.1551	1.000	4.84	4.74	12.5	10.8	100.0
2	66	Total PFOA	413 > 368.7	0.00e0	1.01e4	1.1551		4.33		0.000		
3	67	Total PFOS	499 > 79.9	0.00e0	1.01e3	1.1551		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

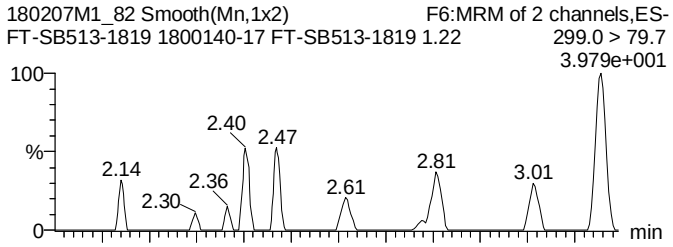
Dataset: Untitled

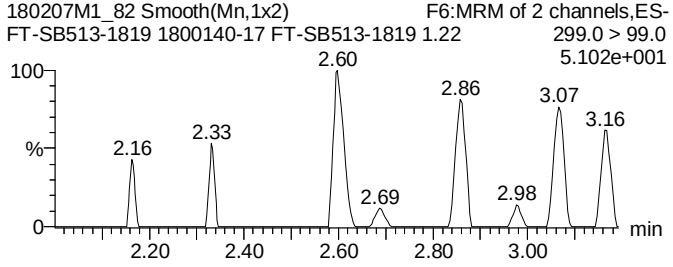
Last Altered: Wednesday, February 14, 2018 13:11:18 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:12:01 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

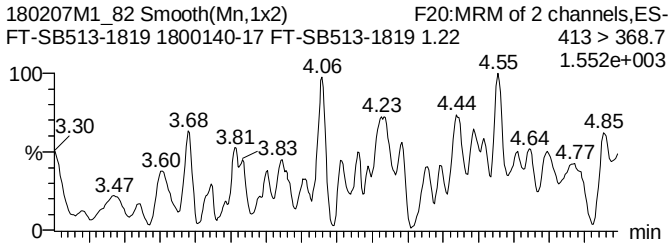
Name: 180207M1_82, Date: 08-Feb-2018, Time: 03:08:19, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

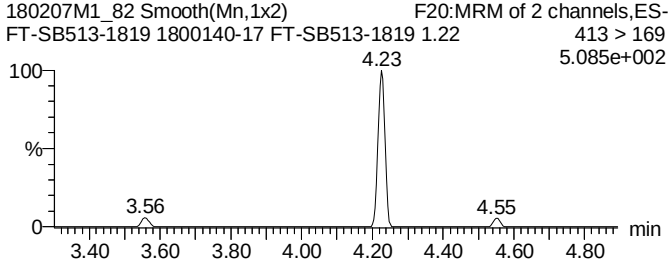
PFBS



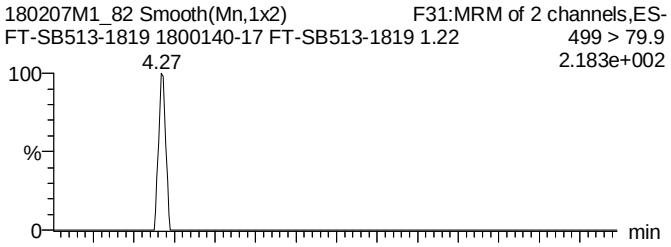


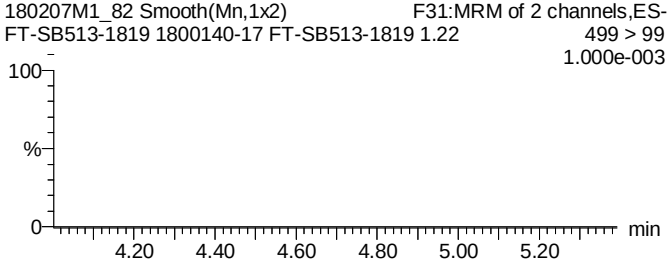
Total PFOA



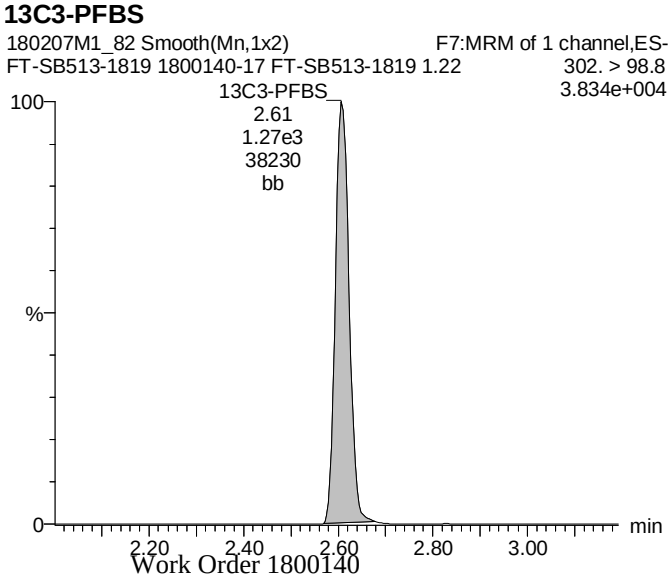


Total PFOS

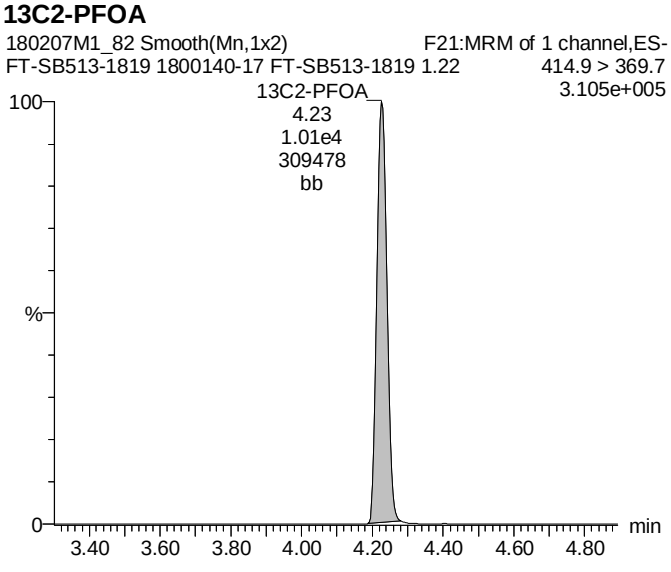




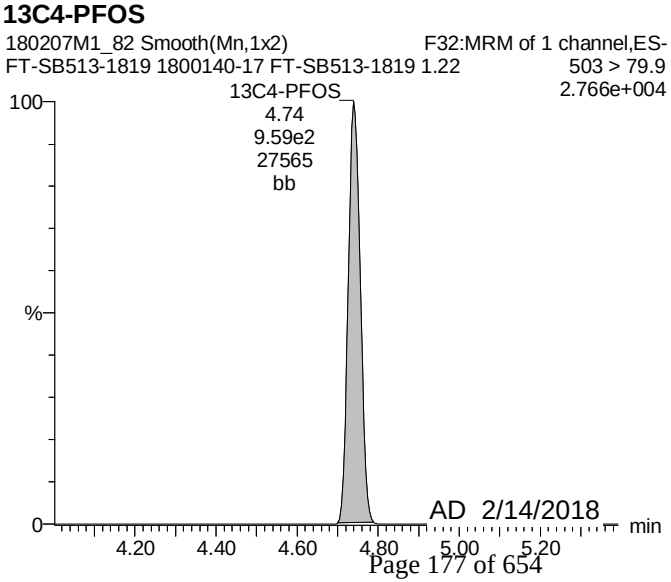
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

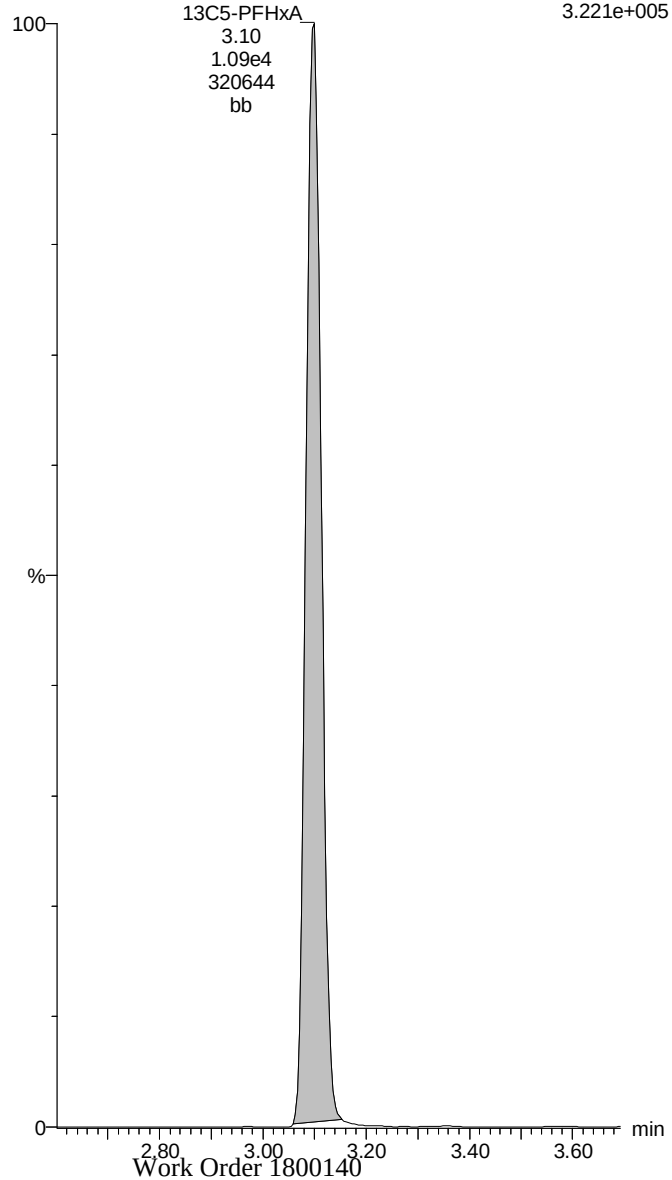
Vista Analytical Laboratory

Dataset: Untitled

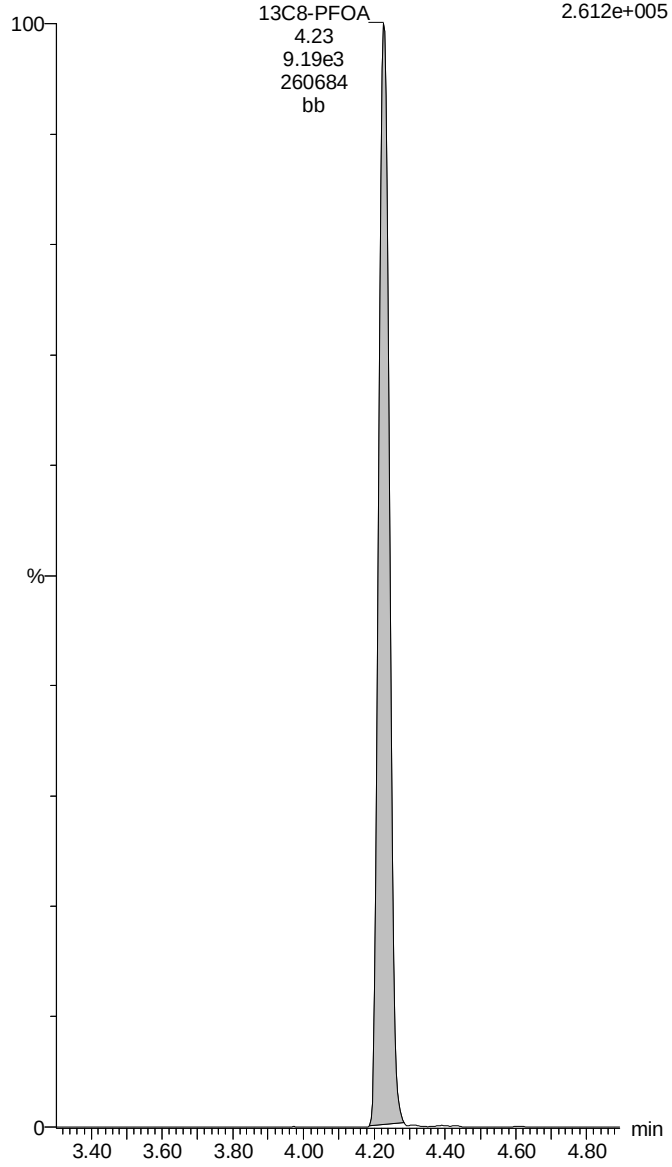
Last Altered: Wednesday, February 14, 2018 13:11:18 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:12:01 Pacific Standard Time

Name: 180207M1_82, Date: 08-Feb-2018, Time: 03:08:19, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

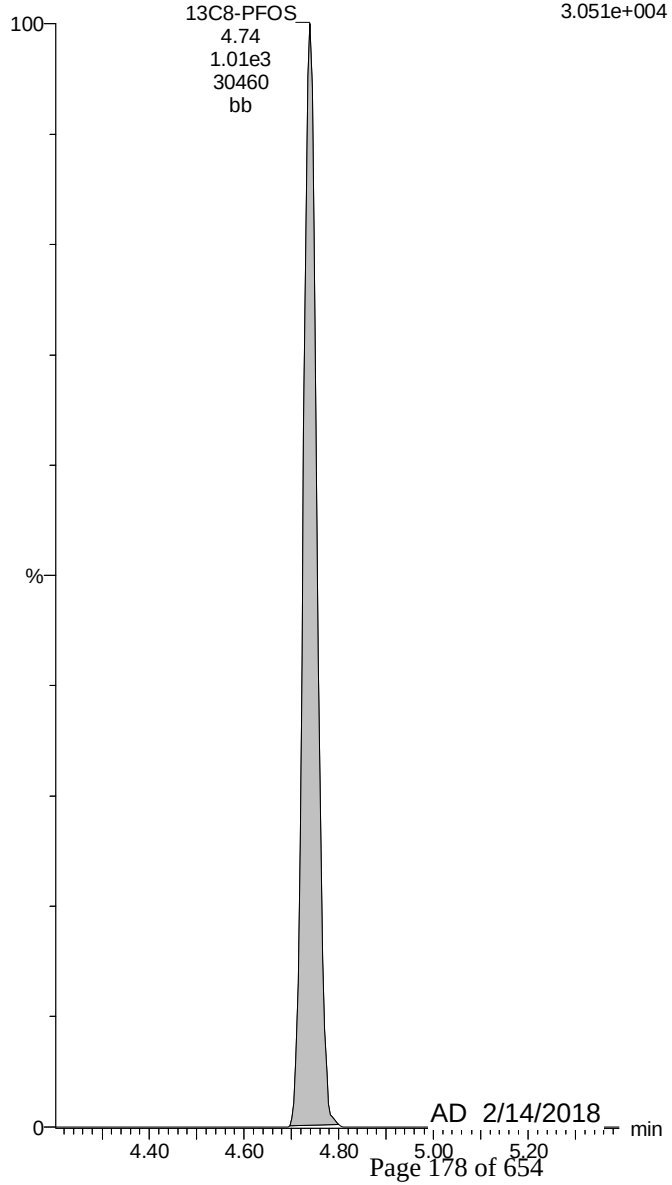
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:13:30 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:13:55 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_83, Date: 08-Feb-2018, Time: 03:19:43, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.39e3	1.1408		2.69				
2	11	L-PFOA	413 > 368.7	6.21e2	1.12e4	1.1408		4.33	4.23	0.693	0.520	
3	16	L-PFOS	499 > 79.9		1.65e3	1.1408		4.84				
4	36	13C3-PFBS	302. > 98.8	1.39e3	1.17e4	1.1408	0.109	2.69	2.61	1.48	11.9	108.4
5	41	13C2-PFOA	414.9 > 369.7	1.12e4	1.06e4	1.1408	1.069	4.33	4.23	13.2	10.8	98.9
6	44	13C8-PFOS	507.0 > 79.9	1.65e3	2.22e3	1.1408	1.041	4.84	4.74	9.28	7.81	71.3
7	58	13C5-PFHxA	318 > 272.9	1.17e4	1.17e4	1.1408	1.000	3.19	3.10	12.5	11.0	100.0
8	60	13C8-PFOA	421.3 > 376	1.06e4	1.06e4	1.1408	1.000	4.33	4.22	12.5	11.0	100.0

AD 2/14/2018

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 14, 2018 13:13:30 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:14:11 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180207M1_83, Date: 08-Feb-2018, Time: 03:19:43, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	62	13C4-PFOS	503 > 79.9	2.22e3	2.22e3	1.1408	1.000	4.84	4.74	12.5	11.0	100.0
2	66	Total PFOA	413 > 368.7	8.85e2	1.12e4	1.1408		4.33		0.986	0.668	
3	67	Total PFOS	499 > 79.9	0.00e0	1.65e3	1.1408		4.84		0.000		

AD 2/14/2018

Vista Analytical Laboratory

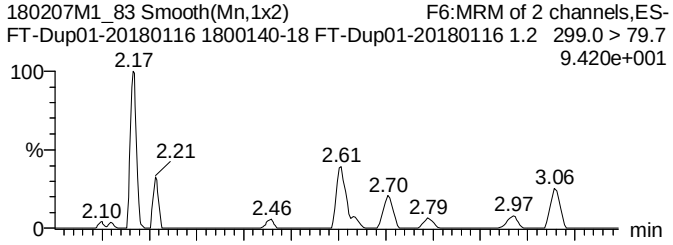
Dataset: Untitled

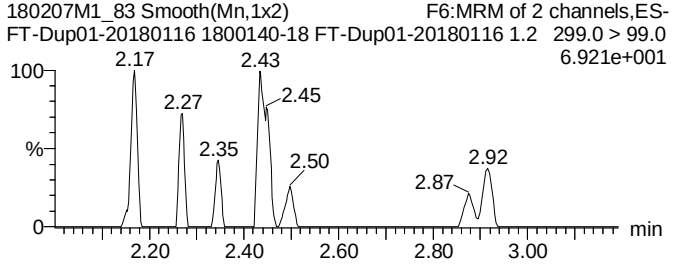
Last Altered: Wednesday, February 14, 2018 13:13:30 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:14:11 Pacific Standard Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 11 Feb 2018 13:54:26
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

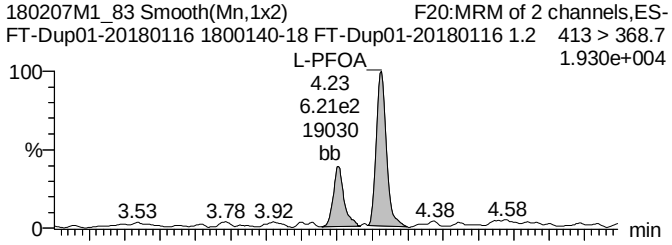
Name: 180207M1_83, Date: 08-Feb-2018, Time: 03:19:43, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

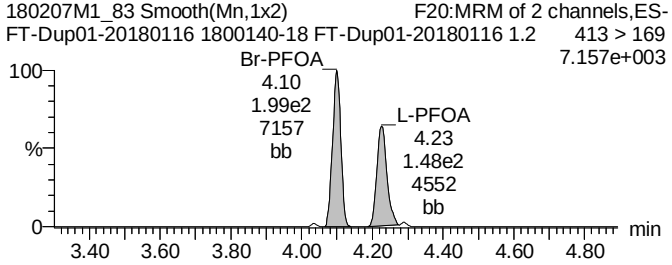
PFBS



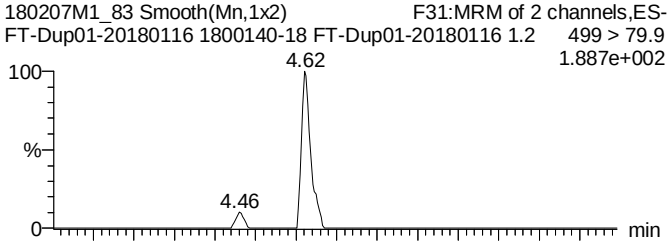


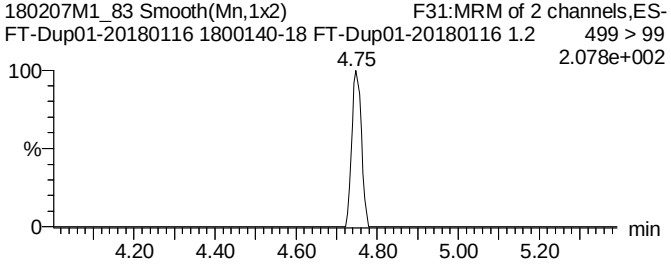
Total PFOA



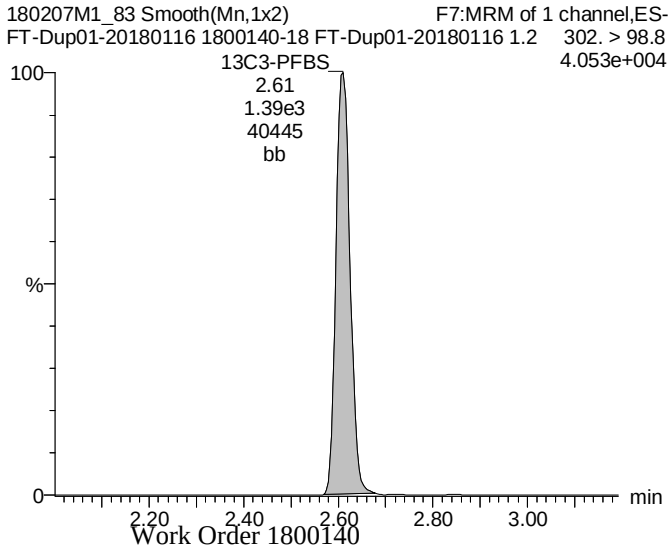


Total PFOS

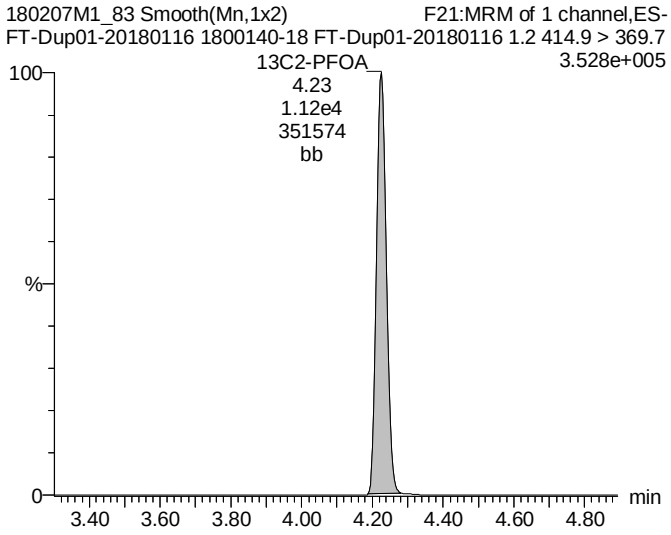




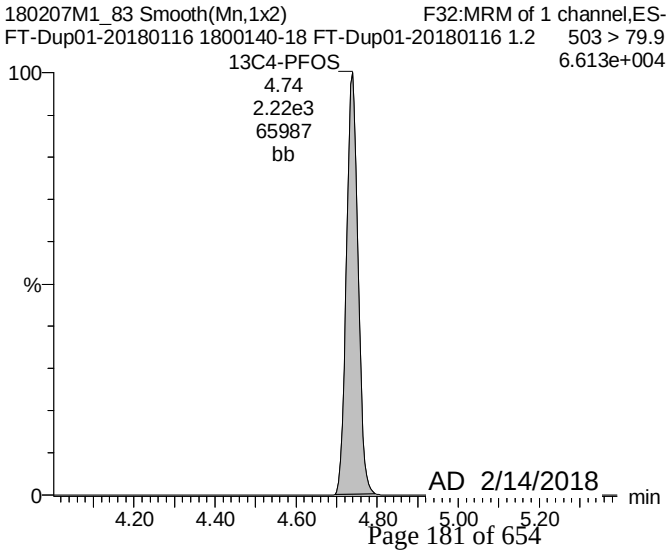
13C3-PFBS



13C2-PFOA



13C4-PFOS



AD 2/14/2018

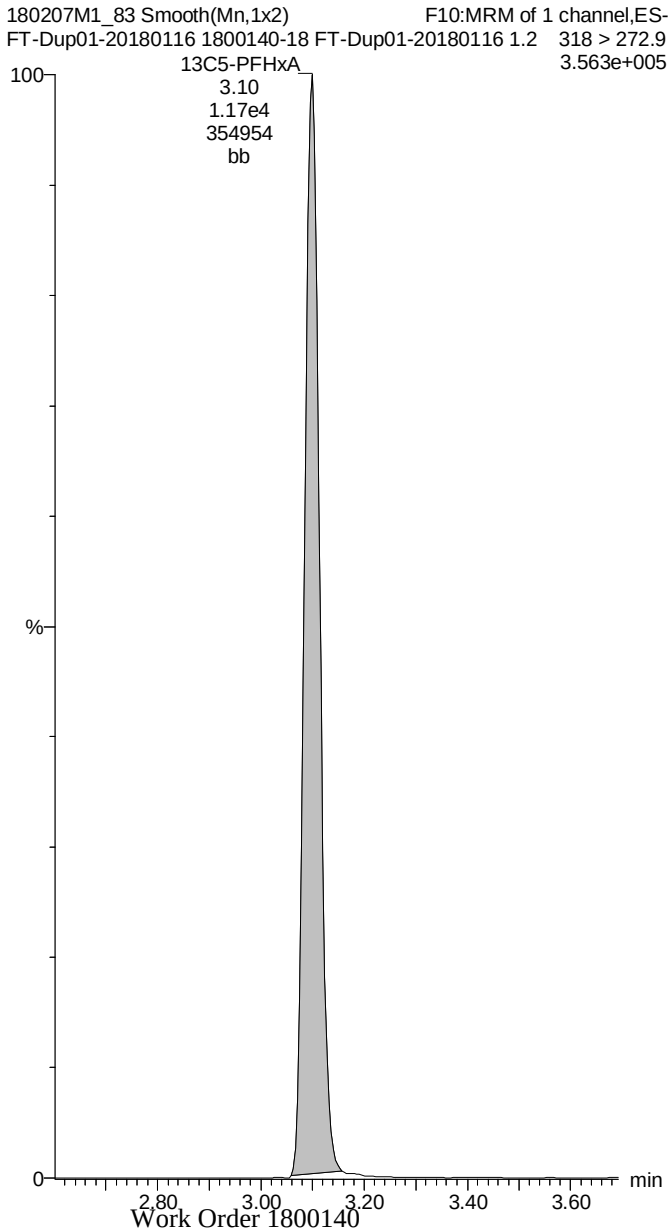
Vista Analytical Laboratory

Dataset: Untitled

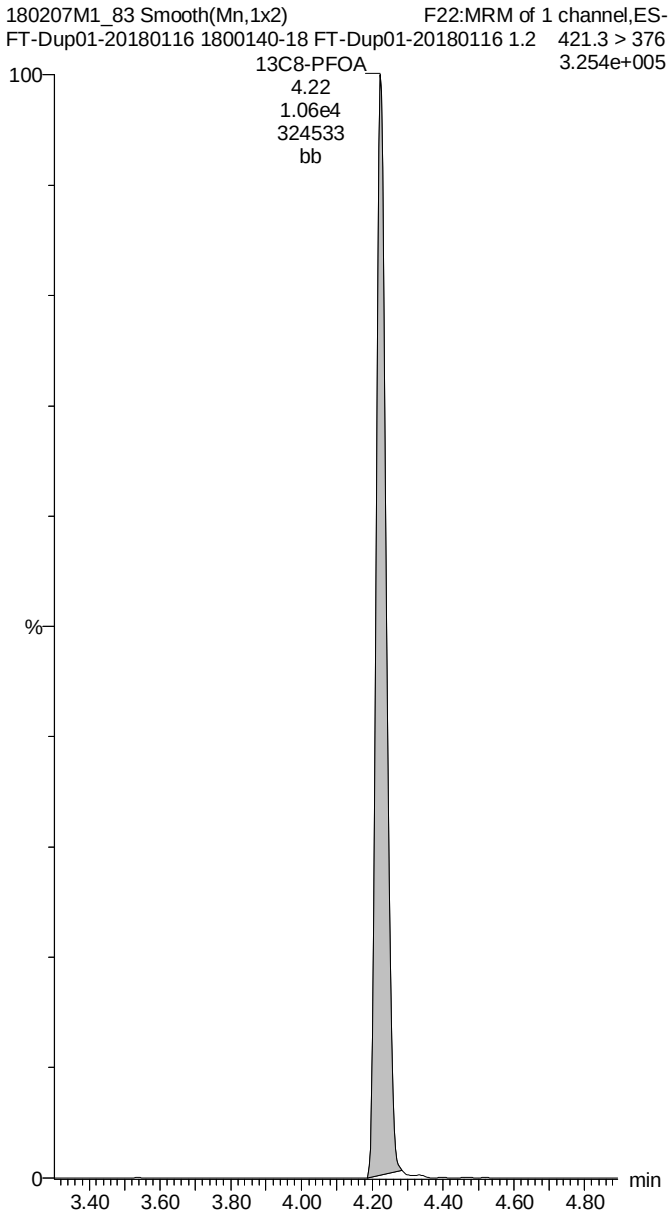
Last Altered: Wednesday, February 14, 2018 13:13:30 Pacific Standard Time
Printed: Wednesday, February 14, 2018 13:14:11 Pacific Standard Time

Name: 180207M1_83, Date: 08-Feb-2018, Time: 03:19:43, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

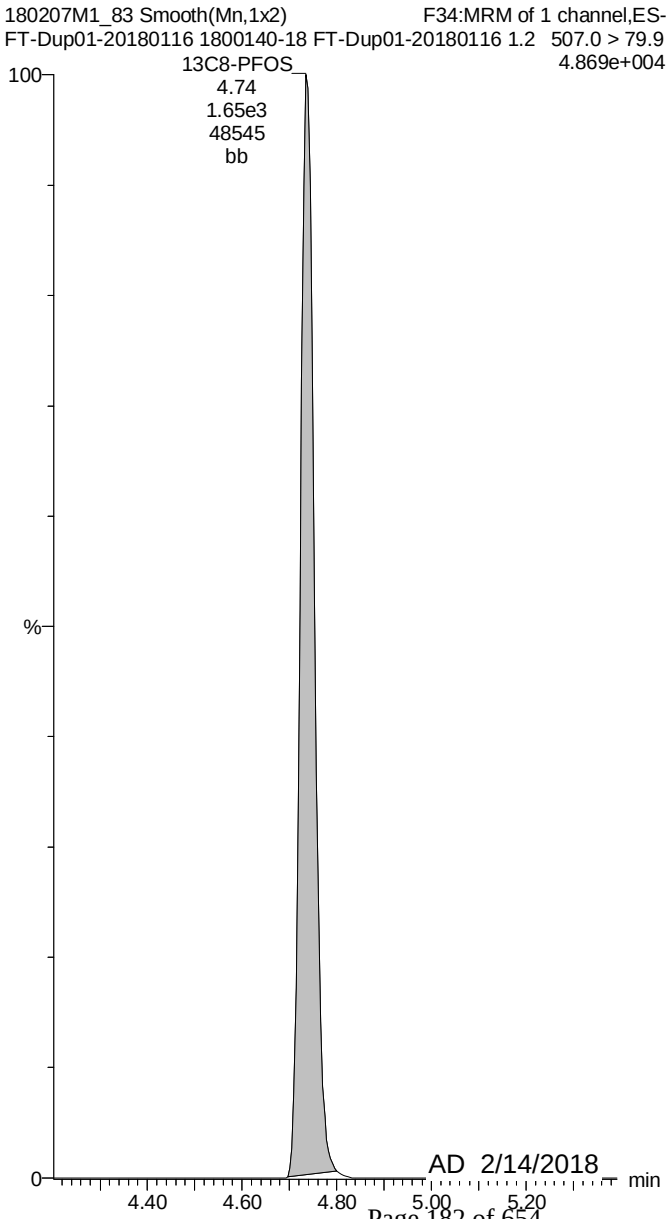
13C5-PFHxA



13C8-PFOA



13C8-PFOS



AD 2/14/2018

INJECTION INTERNAL STANDARD (IIS) AREAS,

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-IIS AREAS.qld

Last Altered: Wednesday, February 07, 2018 12:39:46 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:40:18 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_RS-2-5-18.mdb 06 Feb 2018 10:46:28
Calibration: 07 Feb 2018 12:39:46

Name: 180206M1_4, Date: 06-Feb-2018, Time: 11:30:34, ID: ST180206M1-1 PFC CS0 18A3009, Description: PFC CS0 18A3009

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-1 PFC CS0 18A3009	1.31e4	100.0	NO
2	2	13C5-PFHxA	ST180206M1-1 PFC CS0 18A3009	1.54e4	100.0	NO
3	3	13C3-PFHxS	ST180206M1-1 PFC CS0 18A3009	3.35e3	100.0	NO
4	4	13C8-PFOA	ST180206M1-1 PFC CS0 18A3009	1.36e4	100.0	NO
5	5	13C9-PFNA	ST180206M1-1 PFC CS0 18A3009	1.54e4	100.0	NO
6	6	13C4-PFOS	ST180206M1-1 PFC CS0 18A3009	3.76e3	100.0	NO
7	7	13C6-PFDA	ST180206M1-1 PFC CS0 18A3009	1.04e4	100.0	NO
8	8	13C7-PFUdA	ST180206M1-1 PFC CS0 18A3009	1.12e4	100.0	NO

Name: 180206M1_5, Date: 06-Feb-2018, Time: 11:41:58, ID: B8A0172-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0172-BS1 OPR 0.125	9.08e3	69.4	NO
2	2	13C5-PFHxA	B8A0172-BS1 OPR 0.125	1.01e4	65.5	NO
3	3	13C3-PFHxS	B8A0172-BS1 OPR 0.125	2.26e3	67.6	NO
4	4	13C8-PFOA	B8A0172-BS1 OPR 0.125	8.64e3	63.7	NO
5	5	13C9-PFNA	B8A0172-BS1 OPR 0.125	4.31e3	28.0	YES
6	6	13C4-PFOS	B8A0172-BS1 OPR 0.125	3.90e2	10.4	YES
7	7	13C6-PFDA	B8A0172-BS1 OPR 0.125	7.93e2	7.6	YES
8	8	13C7-PFUdA	B8A0172-BS1 OPR 0.125	3.40e2	3.0	YES

Name: 180206M1_6, Date: 06-Feb-2018, Time: 11:53:25, ID: B8A0172-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0172-BLK1 Method Blank 0.125	9.74e3	74.4	NO
2	2	13C5-PFHxA	B8A0172-BLK1 Method Blank 0.125	1.23e4	79.5	NO
3	3	13C3-PFHxS	B8A0172-BLK1 Method Blank 0.125	2.88e3	86.2	NO
4	4	13C8-PFOA	B8A0172-BLK1 Method Blank 0.125	1.07e4	78.7	NO
5	5	13C9-PFNA	B8A0172-BLK1 Method Blank 0.125	8.05e3	52.2	NO
6	6	13C4-PFOS	B8A0172-BLK1 Method Blank 0.125	1.03e3	27.3	YES
7	7	13C6-PFDA	B8A0172-BLK1 Method Blank 0.125	3.84e3	37.0	YES
8	8	13C7-PFUdA	B8A0172-BLK1 Method Blank 0.125	1.52e3	13.6	YES

Name: 180206M1_7, Date: 06-Feb-2018, Time: 12:04:52, ID: 1800180-07 YEAGR-EB-02-012018 0.11998, Description: YEAGR-EB-02-012018

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800180-07 YEAGR-EB-02-012018 0.1...	8.29e3	63.3	NO
2	2	13C5-PFHxA	1800180-07 YEAGR-EB-02-012018 0.1...	1.06e4	68.6	NO
3	3	13C3-PFHxS	1800180-07 YEAGR-EB-02-012018 0.1...	2.63e3	78.7	NO
4	4	13C8-PFOA	1800180-07 YEAGR-EB-02-012018 0.1...	7.20e3	53.1	NO
5	5	13C9-PFNA	1800180-07 YEAGR-EB-02-012018 0.1...	6.20e3	40.2	YES
6	6	13C4-PFOS	1800180-07 YEAGR-EB-02-012018 0.1...	1.36e3	36.3	YES
7	7	13C6-PFDA	1800180-07 YEAGR-EB-02-012018 0.1...	2.38e3	23.0	YES
8	8	13C7-PFUdA	1800180-07 YEAGR-EB-02-012018 0.1...	9.76e2	8.7	YES

AC 2/7/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-IIS AREAS.qld

Last Altered: Wednesday, February 07, 2018 12:39:46 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:40:18 Pacific Standard Time

Name: 180206M1_8, Date: 06-Feb-2018, Time: 12:16:19, ID: B8A0166-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0166-BS1 OPR 0.25	7.40e3	56.5	NO
2	2	13C5-PFHxA	B8A0166-BS1 OPR 0.25	8.46e3	54.9	NO
3	3	13C3-PFHxS	B8A0166-BS1 OPR 0.25	2.01e3	60.2	NO
4	4	13C8-PFOA	B8A0166-BS1 OPR 0.25	7.67e3	56.5	NO
5	5	13C9-PFNA	B8A0166-BS1 OPR 0.25	6.67e3	43.3	YES
6	6	13C4-PFOS	B8A0166-BS1 OPR 0.25	2.08e3	55.4	NO
7	7	13C6-PFDA	B8A0166-BS1 OPR 0.25	5.56e3	53.6	NO
8	8	13C7-PFUdA	B8A0166-BS1 OPR 0.25	8.65e3	77.2	NO

Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_10, Date: 06-Feb-2018, Time: 12:39:16, ID: ST180206M1-2 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-2 PFC CS3 18A3012	1.33e4	101.9	NO
2	2	13C5-PFHxA	ST180206M1-2 PFC CS3 18A3012	1.41e4	91.8	NO
3	3	13C3-PFHxS	ST180206M1-2 PFC CS3 18A3012	3.31e3	98.9	NO
4	4	13C8-PFOA	ST180206M1-2 PFC CS3 18A3012	1.45e4	107.0	NO
5	5	13C9-PFNA	ST180206M1-2 PFC CS3 18A3012	1.41e4	91.7	NO
6	6	13C4-PFOS	ST180206M1-2 PFC CS3 18A3012	3.96e3	105.5	NO
7	7	13C6-PFDA	ST180206M1-2 PFC CS3 18A3012	1.23e4	118.2	NO
8	8	13C7-PFUdA	ST180206M1-2 PFC CS3 18A3012	1.48e4	132.5	NO

Name: 180206M1_11, Date: 06-Feb-2018, Time: 12:50:42, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA	7.86e0	0.1	YES
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

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Name: 180206M1_12, Date: 06-Feb-2018, Time: 13:20:45, ID: B8A0155-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0155-BS1 OPR 0.125	1.09e4	83.2	NO
2	2	13C5-PFHxA	B8A0155-BS1 OPR 0.125	1.28e4	82.8	NO
3	3	13C3-PFHxS	B8A0155-BS1 OPR 0.125	3.35e3	100.2	NO
4	4	13C8-PFOA	B8A0155-BS1 OPR 0.125	1.24e4	91.4	NO
5	5	13C9-PFNA	B8A0155-BS1 OPR 0.125	1.19e4	77.4	NO
6	6	13C4-PFOS	B8A0155-BS1 OPR 0.125	2.05e3	54.7	NO
7	7	13C6-PFDA	B8A0155-BS1 OPR 0.125	6.82e3	65.8	NO
8	8	13C7-PFUdA	B8A0155-BS1 OPR 0.125	2.61e3	23.3	YES

Name: 180206M1_13, Date: 06-Feb-2018, Time: 13:32:14, ID: B8A0155-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0155-BLK1 Method Blank 0.125	9.50e3	72.6	NO
2	2	13C5-PFHxA	B8A0155-BLK1 Method Blank 0.125	1.07e4	69.4	NO
3	3	13C3-PFHxS	B8A0155-BLK1 Method Blank 0.125	2.93e3	87.7	NO
4	4	13C8-PFOA	B8A0155-BLK1 Method Blank 0.125	1.20e4	88.2	NO
5	5	13C9-PFNA	B8A0155-BLK1 Method Blank 0.125	9.51e3	61.7	NO
6	6	13C4-PFOS	B8A0155-BLK1 Method Blank 0.125	2.72e3	72.4	NO
7	7	13C6-PFDA	B8A0155-BLK1 Method Blank 0.125	8.95e3	86.3	NO
8	8	13C7-PFUdA	B8A0155-BLK1 Method Blank 0.125	6.42e3	57.3	NO

Name: 180206M1_14, Date: 06-Feb-2018, Time: 13:43:41, ID: B8A0155-MS1 Matrix Spike 0.1176, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0155-MS1 Matrix Spike 0.1176	1.12e4	85.2	NO
2	2	13C5-PFHxA	B8A0155-MS1 Matrix Spike 0.1176	1.21e4	78.5	NO
3	3	13C3-PFHxS	B8A0155-MS1 Matrix Spike 0.1176	3.50e3	104.7	NO
4	4	13C8-PFOA	B8A0155-MS1 Matrix Spike 0.1176	1.16e4	85.8	NO
5	5	13C9-PFNA	B8A0155-MS1 Matrix Spike 0.1176	1.26e4	81.7	NO
6	6	13C4-PFOS	B8A0155-MS1 Matrix Spike 0.1176	3.54e3	94.2	NO
7	7	13C6-PFDA	B8A0155-MS1 Matrix Spike 0.1176	7.90e3	76.2	NO
8	8	13C7-PFUdA	B8A0155-MS1 Matrix Spike 0.1176	7.36e3	65.8	NO

Name: 180206M1_15, Date: 06-Feb-2018, Time: 13:55:10, ID: B8A0155-MSD1 Matrix Spike Dup 0.11695, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0155-MSD1 Matrix Spike Dup 0.116...	1.06e4	81.3	NO
2	2	13C5-PFHxA	B8A0155-MSD1 Matrix Spike Dup 0.116...	1.18e4	76.5	NO
3	3	13C3-PFHxS	B8A0155-MSD1 Matrix Spike Dup 0.116...	2.95e3	88.3	NO
4	4	13C8-PFOA	B8A0155-MSD1 Matrix Spike Dup 0.116...	1.12e4	82.6	NO
5	5	13C9-PFNA	B8A0155-MSD1 Matrix Spike Dup 0.116...	1.08e4	70.2	NO
6	6	13C4-PFOS	B8A0155-MSD1 Matrix Spike Dup 0.116...	2.65e3	70.6	NO
7	7	13C6-PFDA	B8A0155-MSD1 Matrix Spike Dup 0.116...	8.37e3	80.7	NO
8	8	13C7-PFUdA	B8A0155-MSD1 Matrix Spike Dup 0.116...	7.45e3	66.5	NO

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Name: 180206M1_16, Date: 06-Feb-2018, Time: 14:06:41, ID: 1800100-09 MINNE-GW-TW12-010918 0.11992, Description: MINNE-GW-TW12-010918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-09 MINNE-GW-TW12-010918...	1.08e4	82.8	NO
2	2	13C5-PFHxA	1800100-09 MINNE-GW-TW12-010918...	1.23e4	79.8	NO
3	3	13C3-PFHxS	1800100-09 MINNE-GW-TW12-010918...	3.14e3	94.0	NO
4	4	13C8-PFOA	1800100-09 MINNE-GW-TW12-010918...	8.73e3	64.4	NO
5	5	13C9-PFNA	1800100-09 MINNE-GW-TW12-010918...	8.67e3	56.2	NO
6	6	13C4-PFOS	1800100-09 MINNE-GW-TW12-010918...	2.65e3	70.4	NO
7	7	13C6-PFDA	1800100-09 MINNE-GW-TW12-010918...	5.79e3	55.9	NO
8	8	13C7-PFUdA	1800100-09 MINNE-GW-TW12-010918...	4.97e3	44.4	YES

Name: 180206M1_17, Date: 06-Feb-2018, Time: 14:18:07, ID: 1800100-10 MINNE-GW-TW14-010918 0.11685, Description: MINNE-GW-TW14-010918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-10 MINNE-GW-TW14-010918...	1.09e4	83.6	NO
2	2	13C5-PFHxA	1800100-10 MINNE-GW-TW14-010918...	1.34e4	86.7	NO
3	3	13C3-PFHxS	1800100-10 MINNE-GW-TW14-010918...	3.48e3	104.0	NO
4	4	13C8-PFOA	1800100-10 MINNE-GW-TW14-010918...	9.85e3	72.6	NO
5	5	13C9-PFNA	1800100-10 MINNE-GW-TW14-010918...	1.29e4	83.8	NO
6	6	13C4-PFOS	1800100-10 MINNE-GW-TW14-010918...	2.84e3	75.7	NO
7	7	13C6-PFDA	1800100-10 MINNE-GW-TW14-010918...	8.18e3	78.9	NO
8	8	13C7-PFUdA	1800100-10 MINNE-GW-TW14-010918...	7.71e3	68.9	NO

Name: 180206M1_18, Date: 06-Feb-2018, Time: 14:29:37, ID: 1800100-11 MINNE-GW-TW15-010918 0.11738, Description: MINNE-GW-TW15-010918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-11 MINNE-GW-TW15-010918 ...	1.05e4	79.9	NO
2	2	13C5-PFHxA	1800100-11 MINNE-GW-TW15-010918 ...	1.10e4	71.6	NO
3	3	13C3-PFHxS	1800100-11 MINNE-GW-TW15-010918 ...	2.76e3	82.4	NO
4	4	13C8-PFOA	1800100-11 MINNE-GW-TW15-010918 ...	1.21e4	88.9	NO
5	5	13C9-PFNA	1800100-11 MINNE-GW-TW15-010918 ...	1.17e4	75.8	NO
6	6	13C4-PFOS	1800100-11 MINNE-GW-TW15-010918 ...	2.03e3	54.0	NO
7	7	13C6-PFDA	1800100-11 MINNE-GW-TW15-010918 ...	7.00e3	67.5	NO
8	8	13C7-PFUdA	1800100-11 MINNE-GW-TW15-010918 ...	4.04e3	36.1	YES

Name: , Date: , Time: , ID: , Description:

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	no data			
2	2	13C5-PFHxA	no data			
3	3	13C3-PFHxS	no data			
4	4	13C8-PFOA	no data			
5	5	13C9-PFNA	no data			
6	6	13C4-PFOS	no data			
7	7	13C6-PFDA	no data			
8	8	13C7-PFUdA	no data			

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	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	no data			
2	2	13C5-PFHxA	no data			
3	3	13C3-PFHxS	no data			
4	4	13C8-PFOA	no data			
5	5	13C9-PFNA	no data			
6	6	13C4-PFOS	no data			
7	7	13C6-PFDA	no data			
8	8	13C7-PFUdA	no data			

Name: 180206M1_21, Date: 06-Feb-2018, Time: 14:41:06, ID: 1800100-17 MINNE-GW-TW11-011018 0.11832, Description: MINNE-GW-TW11-011018

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-17 MINNE-GW-TW11-011018 ...	1.07e4	81.4	NO
2	2	13C5-PFHxA	1800100-17 MINNE-GW-TW11-011018 ...	1.34e4	86.8	NO
3	3	13C3-PFHxS	1800100-17 MINNE-GW-TW11-011018 ...	3.61e3	107.9	NO
4	4	13C8-PFOA	1800100-17 MINNE-GW-TW11-011018 ...	1.03e4	76.1	NO
5	5	13C9-PFNA	1800100-17 MINNE-GW-TW11-011018 ...	1.07e4	69.6	NO
6	6	13C4-PFOS	1800100-17 MINNE-GW-TW11-011018 ...	2.36e3	62.8	NO
7	7	13C6-PFDA	1800100-17 MINNE-GW-TW11-011018 ...	5.33e3	51.4	NO
8	8	13C7-PFUdA	1800100-17 MINNE-GW-TW11-011018 ...	3.48e3	31.0	YES

Name: 180206M1_22, Date: 06-Feb-2018, Time: 14:52:37, ID: 1800100-18 MINNE-GW-TW17-011018 0.11988, Description: MINNE-GW-TW17-011018

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-18 MINNE-GW-TW17-011018 ...	1.12e4	85.8	NO
2	2	13C5-PFHxA	1800100-18 MINNE-GW-TW17-011018 ...	1.29e4	83.7	NO
3	3	13C3-PFHxS	1800100-18 MINNE-GW-TW17-011018 ...	3.37e3	100.8	NO
4	4	13C8-PFOA	1800100-18 MINNE-GW-TW17-011018 ...	1.04e4	76.4	NO
5	5	13C9-PFNA	1800100-18 MINNE-GW-TW17-011018 ...	1.01e4	65.6	NO
6	6	13C4-PFOS	1800100-18 MINNE-GW-TW17-011018 ...	2.65e3	70.5	NO
7	7	13C6-PFDA	1800100-18 MINNE-GW-TW17-011018 ...	8.82e3	85.0	NO
8	8	13C7-PFUdA	1800100-18 MINNE-GW-TW17-011018 ...	5.86e3	52.3	NO

Name: 180206M1_23, Date: 06-Feb-2018, Time: 15:04:03, ID: 1800100-19 MINNE-GW-TW18-011018 0.11609, Description: MINNE-GW-TW18-011018

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800100-19 MINNE-GW-TW18-011018 ...	1.10e4	83.7	NO
2	2	13C5-PFHxA	1800100-19 MINNE-GW-TW18-011018 ...	1.38e4	89.8	NO
3	3	13C3-PFHxS	1800100-19 MINNE-GW-TW18-011018 ...	3.63e3	108.4	NO
4	4	13C8-PFOA	1800100-19 MINNE-GW-TW18-011018 ...	1.29e4	95.4	NO
5	5	13C9-PFNA	1800100-19 MINNE-GW-TW18-011018 ...	1.10e4	71.6	NO
6	6	13C4-PFOS	1800100-19 MINNE-GW-TW18-011018 ...	2.73e3	72.7	NO
7	7	13C6-PFDA	1800100-19 MINNE-GW-TW18-011018 ...	6.79e3	65.5	NO
8	8	13C7-PFUdA	1800100-19 MINNE-GW-TW18-011018 ...	5.39e3	48.2	YES

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Name: 180206M1_24, Date: 06-Feb-2018, Time: 15:15:30, ID: B8A0162-MS1 Matrix Spike 0.12293, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MS1 Matrix Spike 0.12293	1.04e4	79.5	NO
2	2	13C5-PFHxA	B8A0162-MS1 Matrix Spike 0.12293	1.24e4	80.7	NO
3	3	13C3-PFHxS	B8A0162-MS1 Matrix Spike 0.12293	2.96e3	88.5	NO
4	4	13C8-PFOA	B8A0162-MS1 Matrix Spike 0.12293	1.13e4	83.1	NO
5	5	13C9-PFNA	B8A0162-MS1 Matrix Spike 0.12293	1.05e4	68.1	NO
6	6	13C4-PFOS	B8A0162-MS1 Matrix Spike 0.12293	2.22e3	59.0	NO
7	7	13C6-PFDA	B8A0162-MS1 Matrix Spike 0.12293	6.88e3	66.4	NO
8	8	13C7-PFUdA	B8A0162-MS1 Matrix Spike 0.12293	3.82e3	34.1	YES

Name: 180206M1_25, Date: 06-Feb-2018, Time: 15:26:57, ID: B8A0162-MSD1 Matrix Spike Dup 0.12128, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MSD1 Matrix Spike Dup 0.121...	1.05e4	80.5	NO
2	2	13C5-PFHxA	B8A0162-MSD1 Matrix Spike Dup 0.121...	1.27e4	82.4	NO
3	3	13C3-PFHxS	B8A0162-MSD1 Matrix Spike Dup 0.121...	3.06e3	91.5	NO
4	4	13C8-PFOA	B8A0162-MSD1 Matrix Spike Dup 0.121...	1.10e4	80.9	NO
5	5	13C9-PFNA	B8A0162-MSD1 Matrix Spike Dup 0.121...	1.06e4	68.6	NO
6	6	13C4-PFOS	B8A0162-MSD1 Matrix Spike Dup 0.121...	2.19e3	58.4	NO
7	7	13C6-PFDA	B8A0162-MSD1 Matrix Spike Dup 0.121...	6.91e3	66.7	NO
8	8	13C7-PFUdA	B8A0162-MSD1 Matrix Spike Dup 0.121...	4.93e3	44.0	YES

Name: 180206M1_26, Date: 06-Feb-2018, Time: 15:38:23, ID: B8A0162-MS2 Matrix Spike 0.11755, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MS2 Matrix Spike 0.11755	1.06e4	80.6	NO
2	2	13C5-PFHxA	B8A0162-MS2 Matrix Spike 0.11755	1.19e4	77.0	NO
3	3	13C3-PFHxS	B8A0162-MS2 Matrix Spike 0.11755	2.54e3	75.8	NO
4	4	13C8-PFOA	B8A0162-MS2 Matrix Spike 0.11755	1.10e4	80.8	NO
5	5	13C9-PFNA	B8A0162-MS2 Matrix Spike 0.11755	1.18e4	76.8	NO
6	6	13C4-PFOS	B8A0162-MS2 Matrix Spike 0.11755	1.85e3	49.3	YES
7	7	13C6-PFDA	B8A0162-MS2 Matrix Spike 0.11755	6.06e3	58.4	NO
8	8	13C7-PFUdA	B8A0162-MS2 Matrix Spike 0.11755	4.98e3	44.4	YES

Name: 180206M1_27, Date: 06-Feb-2018, Time: 15:49:51, ID: B8A0162-MSD2 Matrix Spike Dup 0.12186, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MSD2 Matrix Spike Dup 0.121...	1.04e4	79.5	NO
2	2	13C5-PFHxA	B8A0162-MSD2 Matrix Spike Dup 0.121...	1.13e4	73.2	NO
3	3	13C3-PFHxS	B8A0162-MSD2 Matrix Spike Dup 0.121...	2.46e3	73.5	NO
4	4	13C8-PFOA	B8A0162-MSD2 Matrix Spike Dup 0.121...	1.07e4	78.8	NO
5	5	13C9-PFNA	B8A0162-MSD2 Matrix Spike Dup 0.121...	1.07e4	69.7	NO
6	6	13C4-PFOS	B8A0162-MSD2 Matrix Spike Dup 0.121...	1.78e3	47.3	YES
7	7	13C6-PFDA	B8A0162-MSD2 Matrix Spike Dup 0.121...	5.66e3	54.6	NO
8	8	13C7-PFUdA	B8A0162-MSD2 Matrix Spike Dup 0.121...	2.83e3	25.3	YES

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Name: 180206M1_28, Date: 06-Feb-2018, Time: 16:01:17, ID: 1800177-06 YEAGR-06-SW01-011718 0.12192, Description: YEAGR-06-SW01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800177-06 YEAGR-06-SW01-011718 ...	1.11e4	84.8	NO
2	2	13C5-PFHxA	1800177-06 YEAGR-06-SW01-011718 ...	1.28e4	83.1	NO
3	3	13C3-PFHxS	1800177-06 YEAGR-06-SW01-011718 ...	2.73e3	81.6	NO
4	4	13C8-PFOA	1800177-06 YEAGR-06-SW01-011718 ...	1.10e4	81.2	NO
5	5	13C9-PFNA	1800177-06 YEAGR-06-SW01-011718 ...	1.06e4	68.9	NO
6	6	13C4-PFOS	1800177-06 YEAGR-06-SW01-011718 ...	1.87e3	49.7	YES
7	7	13C6-PFDA	1800177-06 YEAGR-06-SW01-011718 ...	5.91e3	57.0	NO
8	8	13C7-PFUdA	1800177-06 YEAGR-06-SW01-011718 ...	2.74e3	24.4	YES

Name: , Date: , Time: , ID: , Description:

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	no data			
2	2	13C5-PFHxA	no data			
3	3	13C3-PFHxS	no data			
4	4	13C8-PFOA	no data			
5	5	13C9-PFNA	no data			
6	6	13C4-PFOS	no data			
7	7	13C6-PFDA	no data			
8	8	13C7-PFUdA	no data			

Name: 180206M1_30, Date: 06-Feb-2018, Time: 16:12:44, ID: 1800195-03 PITTS-GW-DUP01-011618 0.12017, Description: PITTS-GW-DUP01-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-03 PITTS-GW-DUP01-011618...	1.10e4	83.7	NO
2	2	13C5-PFHxA	1800195-03 PITTS-GW-DUP01-011618...	1.29e4	83.8	NO
3	3	13C3-PFHxS	1800195-03 PITTS-GW-DUP01-011618...	3.00e3	89.8	NO
4	4	13C8-PFOA	1800195-03 PITTS-GW-DUP01-011618...	1.07e4	79.0	NO
5	5	13C9-PFNA	1800195-03 PITTS-GW-DUP01-011618...	1.20e4	77.9	NO
6	6	13C4-PFOS	1800195-03 PITTS-GW-DUP01-011618...	2.60e3	69.2	NO
7	7	13C6-PFDA	1800195-03 PITTS-GW-DUP01-011618...	6.94e3	66.9	NO
8	8	13C7-PFUdA	1800195-03 PITTS-GW-DUP01-011618...	6.34e3	56.6	NO

Name: 180206M1_31, Date: 06-Feb-2018, Time: 16:24:14, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA	6.51e0	0.0	YES
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

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Name: 180206M1_32, Date: 06-Feb-2018, Time: 16:35:41, ID: ST180206M1-3 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-3 PFC CS3 18A3012	1.35e4	103.1	NO
2	2	13C5-PFHxA	ST180206M1-3 PFC CS3 18A3012	1.46e4	94.9	NO
3	3	13C3-PFHxS	ST180206M1-3 PFC CS3 18A3012	3.91e3	116.8	NO
4	4	13C8-PFOA	ST180206M1-3 PFC CS3 18A3012	1.43e4	105.4	NO
5	5	13C9-PFNA	ST180206M1-3 PFC CS3 18A3012	1.63e4	105.5	NO
6	6	13C4-PFOS	ST180206M1-3 PFC CS3 18A3012	3.28e3	87.5	NO
7	7	13C6-PFDA	ST180206M1-3 PFC CS3 18A3012	1.17e4	112.7	NO
8	8	13C7-PFUdA	ST180206M1-3 PFC CS3 18A3012	1.43e4	127.5	NO

Name: 180206M1_33, Date: 06-Feb-2018, Time: 16:47:08, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA	6.63e0	0.0	YES
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_34, Date: 06-Feb-2018, Time: 16:58:35, ID: 1800195-04 PITTS-GW-TW01B-011618 0.11986, Description: PITTS-GW-TW01B-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-04 PITTS-GW-TW01B-011618...	1.06e4	81.1	NO
2	2	13C5-PFHxA	1800195-04 PITTS-GW-TW01B-011618...	1.23e4	80.1	NO
3	3	13C3-PFHxS	1800195-04 PITTS-GW-TW01B-011618...	2.93e3	87.7	NO
4	4	13C8-PFOA	1800195-04 PITTS-GW-TW01B-011618...	9.93e3	73.2	NO
5	5	13C9-PFNA	1800195-04 PITTS-GW-TW01B-011618...	1.18e4	76.2	NO
6	6	13C4-PFOS	1800195-04 PITTS-GW-TW01B-011618...	2.20e3	58.5	NO
7	7	13C6-PFDA	1800195-04 PITTS-GW-TW01B-011618...	6.29e3	60.6	NO
8	8	13C7-PFUdA	1800195-04 PITTS-GW-TW01B-011618...	5.76e3	51.4	NO

Name: 180206M1_35, Date: 06-Feb-2018, Time: 17:10:04, ID: 1800195-05 PITTS-GW-TW03-011718 0.12099, Description: PITTS-GW-TW03-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-05 PITTS-GW-TW03-011718 ...	1.09e4	83.5	NO
2	2	13C5-PFHxA	1800195-05 PITTS-GW-TW03-011718 ...	1.23e4	79.7	NO
3	3	13C3-PFHxS	1800195-05 PITTS-GW-TW03-011718 ...	2.97e3	88.8	NO
4	4	13C8-PFOA	1800195-05 PITTS-GW-TW03-011718 ...	9.02e3	66.5	NO
5	5	13C9-PFNA	1800195-05 PITTS-GW-TW03-011718 ...	9.63e3	62.4	NO
6	6	13C4-PFOS	1800195-05 PITTS-GW-TW03-011718 ...	2.56e3	68.2	NO
7	7	13C6-PFDA	1800195-05 PITTS-GW-TW03-011718 ...	7.94e3	76.6	NO
8	8	13C7-PFUdA	1800195-05 PITTS-GW-TW03-011718 ...	6.45e3	57.6	NO

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Name: 180206M1_36, Date: 06-Feb-2018, Time: 17:21:34, ID: 1800195-06 PITTS-GW-TW07-011718 0.12041, Description: PITTS-GW-TW07-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-06 PITTS-GW-TW07-011718 ...	1.06e4	81.1	NO
2	2	13C5-PFHxA	1800195-06 PITTS-GW-TW07-011718 ...	1.21e4	78.2	NO
3	3	13C3-PFHxS	1800195-06 PITTS-GW-TW07-011718 ...	3.18e3	95.1	NO
4	4	13C8-PFOA	1800195-06 PITTS-GW-TW07-011718 ...	1.05e4	77.1	NO
5	5	13C9-PFNA	1800195-06 PITTS-GW-TW07-011718 ...	1.12e4	72.5	NO
6	6	13C4-PFOS	1800195-06 PITTS-GW-TW07-011718 ...	2.13e3	56.6	NO
7	7	13C6-PFDA	1800195-06 PITTS-GW-TW07-011718 ...	7.87e3	75.9	NO
8	8	13C7-PFUdA	1800195-06 PITTS-GW-TW07-011718 ...	3.55e3	31.7	YES

Name: , Date: , Time: , ID: , Description:

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	no data			
2	2	13C5-PFHxA	no data			
3	3	13C3-PFHxS	no data			
4	4	13C8-PFOA	no data			
5	5	13C9-PFNA	no data			
6	6	13C4-PFOS	no data			
7	7	13C6-PFDA	no data			
8	8	13C7-PFUdA	no data			

Name: 180206M1_38, Date: 06-Feb-2018, Time: 17:33:03, ID: 1800195-07 PITTS-GW-TW13-011618 0.12, Description: PITTS-GW-TW13-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-07 PITTS-GW-TW13-011618 ...	1.09e4	83.5	NO
2	2	13C5-PFHxA	1800195-07 PITTS-GW-TW13-011618 ...	1.33e4	86.3	NO
3	3	13C3-PFHxS	1800195-07 PITTS-GW-TW13-011618 ...	2.95e3	88.1	NO
4	4	13C8-PFOA	1800195-07 PITTS-GW-TW13-011618 ...	1.26e4	92.7	NO
5	5	13C9-PFNA	1800195-07 PITTS-GW-TW13-011618 ...	1.15e4	74.6	NO
6	6	13C4-PFOS	1800195-07 PITTS-GW-TW13-011618 ...	2.01e3	53.5	NO
7	7	13C6-PFDA	1800195-07 PITTS-GW-TW13-011618 ...	6.88e3	66.3	NO
8	8	13C7-PFUdA	1800195-07 PITTS-GW-TW13-011618 ...	4.88e3	43.6	YES

Name: 180206M1_39, Date: 06-Feb-2018, Time: 17:44:33, ID: 1800195-08 PITTS-GW-TW15-011618 0.12086, Description: PITTS-GW-TW15-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-08 PITTS-GW-TW15-011618 ...	1.08e4	82.4	NO
2	2	13C5-PFHxA	1800195-08 PITTS-GW-TW15-011618 ...	1.33e4	86.1	NO
3	3	13C3-PFHxS	1800195-08 PITTS-GW-TW15-011618 ...	3.40e3	101.6	NO
4	4	13C8-PFOA	1800195-08 PITTS-GW-TW15-011618 ...	1.09e4	80.1	NO
5	5	13C9-PFNA	1800195-08 PITTS-GW-TW15-011618 ...	1.24e4	80.5	NO
6	6	13C4-PFOS	1800195-08 PITTS-GW-TW15-011618 ...	3.00e3	79.8	NO
7	7	13C6-PFDA	1800195-08 PITTS-GW-TW15-011618 ...	7.56e3	72.9	NO
8	8	13C7-PFUdA	1800195-08 PITTS-GW-TW15-011618 ...	1.04e4	93.2	NO

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Name: 180206M1_40, Date: 06-Feb-2018, Time: 17:56:01, ID: 1800195-09 PITTS-GW-TW16-011618 0.11819, Description: PITTS-GW-TW16-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-09 PITTS-GW-TW16-011618 ...	1.07e4	82.0	NO
2	2	13C5-PFHxA	1800195-09 PITTS-GW-TW16-011618 ...	1.45e4	94.4	NO
3	3	13C3-PFHxS	1800195-09 PITTS-GW-TW16-011618 ...	3.18e3	95.2	NO
4	4	13C8-PFOA	1800195-09 PITTS-GW-TW16-011618 ...	1.32e4	97.6	NO
5	5	13C9-PFNA	1800195-09 PITTS-GW-TW16-011618 ...	9.90e3	64.2	NO
6	6	13C4-PFOS	1800195-09 PITTS-GW-TW16-011618 ...	2.63e3	70.0	NO
7	7	13C6-PFDA	1800195-09 PITTS-GW-TW16-011618 ...	9.30e3	89.7	NO
8	8	13C7-PFUdA	1800195-09 PITTS-GW-TW16-011618 ...	7.36e3	65.8	NO

Name: 180206M1_41, Date: 06-Feb-2018, Time: 18:07:31, ID: 1800195-10 PITTS-GW-TW17-011618 0.11997, Description: PITTS-GW-TW17-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-10 PITTS-GW-TW17-011618 ...	1.08e4	82.2	NO
2	2	13C5-PFHxA	1800195-10 PITTS-GW-TW17-011618 ...	1.19e4	77.3	NO
3	3	13C3-PFHxS	1800195-10 PITTS-GW-TW17-011618 ...	3.07e3	91.7	NO
4	4	13C8-PFOA	1800195-10 PITTS-GW-TW17-011618 ...	1.18e4	86.9	NO
5	5	13C9-PFNA	1800195-10 PITTS-GW-TW17-011618 ...	9.71e3	63.0	NO
6	6	13C4-PFOS	1800195-10 PITTS-GW-TW17-011618 ...	2.30e3	61.4	NO
7	7	13C6-PFDA	1800195-10 PITTS-GW-TW17-011618 ...	8.75e3	84.4	NO
8	8	13C7-PFUdA	1800195-10 PITTS-GW-TW17-011618 ...	6.48e3	57.9	NO

Name: 180206M1_42, Date: 06-Feb-2018, Time: 18:19:02, ID: 1800195-11 PITTS-GW-TW18-011618 0.12121, Description: PITTS-GW-TW18-011618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-11 PITTS-GW-TW18-011618 ...	9.97e3	76.1	NO
2	2	13C5-PFHxA	1800195-11 PITTS-GW-TW18-011618 ...	1.28e4	83.0	NO
3	3	13C3-PFHxS	1800195-11 PITTS-GW-TW18-011618 ...	2.65e3	79.1	NO
4	4	13C8-PFOA	1800195-11 PITTS-GW-TW18-011618 ...	1.05e4	77.3	NO
5	5	13C9-PFNA	1800195-11 PITTS-GW-TW18-011618 ...	9.49e3	61.5	NO
6	6	13C4-PFOS	1800195-11 PITTS-GW-TW18-011618 ...	2.52e3	67.2	NO
7	7	13C6-PFDA	1800195-11 PITTS-GW-TW18-011618 ...	6.37e3	61.4	NO
8	8	13C7-PFUdA	1800195-11 PITTS-GW-TW18-011618 ...	5.96e3	53.3	NO

Name: 180206M1_43, Date: 06-Feb-2018, Time: 18:30:28, ID: 1800177-06@5X YEAGR-06-SW01-011718 0.12192, Description: YEAGR-06-SW01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800177-06@5X YEAGR-06-SW01-011...	2.02e3	15.4	YES
2	2	13C5-PFHxA	1800177-06@5X YEAGR-06-SW01-011...	2.36e3	15.3	YES
3	3	13C3-PFHxS	1800177-06@5X YEAGR-06-SW01-011...	3.93e2	11.8	YES
4	4	13C8-PFOA	1800177-06@5X YEAGR-06-SW01-011...	1.43e3	10.5	YES
5	5	13C9-PFNA	1800177-06@5X YEAGR-06-SW01-011...	1.06e3	6.9	YES
6	6	13C4-PFOS	1800177-06@5X YEAGR-06-SW01-011...	1.09e2	2.9	YES
7	7	13C6-PFDA	1800177-06@5X YEAGR-06-SW01-011...	4.52e2	4.4	YES
8	8	13C7-PFUdA	1800177-06@5X YEAGR-06-SW01-011...	1.73e2	1.5	YES

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Name: 180206M1_44, Date: 06-Feb-2018, Time: 18:41:55, ID: B8A0162-MS1@5X Matrix Spike 0.12293, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MS1@5X Matrix Spike 0.12293	1.87e3	14.3	YES
2	2	13C5-PFHxA	B8A0162-MS1@5X Matrix Spike 0.12293	2.20e3	14.3	YES
3	3	13C3-PFHxS	B8A0162-MS1@5X Matrix Spike 0.12293	3.91e2	11.7	YES
4	4	13C8-PFOA	B8A0162-MS1@5X Matrix Spike 0.12293	1.50e3	11.1	YES
5	5	13C9-PFNA	B8A0162-MS1@5X Matrix Spike 0.12293	9.65e2	6.3	YES
6	6	13C4-PFOS	B8A0162-MS1@5X Matrix Spike 0.12293	1.89e2	5.0	YES
7	7	13C6-PFDA	B8A0162-MS1@5X Matrix Spike 0.12293	3.40e2	3.3	YES
8	8	13C7-PFUdA	B8A0162-MS1@5X Matrix Spike 0.12293	1.62e2	1.4	YES

Name: 180206M1_45, Date: 06-Feb-2018, Time: 18:53:22, ID: B8A0162-MSD1@5X Matrix Spike Dup 0.12128, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MSD1@5X Matrix Spike Dup ...	2.13e3	16.2	YES
2	2	13C5-PFHxA	B8A0162-MSD1@5X Matrix Spike Dup ...	2.24e3	14.6	YES
3	3	13C3-PFHxS	B8A0162-MSD1@5X Matrix Spike Dup ...	5.01e2	15.0	YES
4	4	13C8-PFOA	B8A0162-MSD1@5X Matrix Spike Dup ...	1.99e3	14.7	YES
5	5	13C9-PFNA	B8A0162-MSD1@5X Matrix Spike Dup ...	1.28e3	8.3	YES
6	6	13C4-PFOS	B8A0162-MSD1@5X Matrix Spike Dup ...	2.34e2	6.2	YES
7	7	13C6-PFDA	B8A0162-MSD1@5X Matrix Spike Dup ...	6.38e2	6.2	YES
8	8	13C7-PFUdA	B8A0162-MSD1@5X Matrix Spike Dup ...	2.15e2	1.9	YES

Name: 180206M1_46, Date: 06-Feb-2018, Time: 19:04:49, ID: 1800195-06@5X PITTS-GW-TW07-011718 0.12041, Description: PITTS-GW-TW07-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800195-06@5X PITTS-GW-TW07-011...	1.80e3	13.7	YES
2	2	13C5-PFHxA	1800195-06@5X PITTS-GW-TW07-011...	2.10e3	13.6	YES
3	3	13C3-PFHxS	1800195-06@5X PITTS-GW-TW07-011...	5.69e2	17.0	YES
4	4	13C8-PFOA	1800195-06@5X PITTS-GW-TW07-011...	1.74e3	12.8	YES
5	5	13C9-PFNA	1800195-06@5X PITTS-GW-TW07-011...	1.32e3	8.5	YES
6	6	13C4-PFOS	1800195-06@5X PITTS-GW-TW07-011...	2.37e2	6.3	YES
7	7	13C6-PFDA	1800195-06@5X PITTS-GW-TW07-011...	5.48e2	5.3	YES
8	8	13C7-PFUdA	1800195-06@5X PITTS-GW-TW07-011...	2.35e2	2.1	YES

Name: 180206M1_47, Date: 06-Feb-2018, Time: 19:16:15, ID: B8A0162-MS2@5X Matrix Spike 0.11755, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0162-MS2@5X Matrix Spike 0.11755	1.98e3	15.1	YES
2	2	13C5-PFHxA	B8A0162-MS2@5X Matrix Spike 0.11755	2.04e3	13.3	YES
3	3	13C3-PFHxS	B8A0162-MS2@5X Matrix Spike 0.11755	4.05e2	12.1	YES
4	4	13C8-PFOA	B8A0162-MS2@5X Matrix Spike 0.11755	1.36e3	10.1	YES
5	5	13C9-PFNA	B8A0162-MS2@5X Matrix Spike 0.11755	1.28e3	8.3	YES
6	6	13C4-PFOS	B8A0162-MS2@5X Matrix Spike 0.11755	1.69e2	4.5	YES
7	7	13C6-PFDA	B8A0162-MS2@5X Matrix Spike 0.11755	3.51e2	3.4	YES
8	8	13C7-PFUdA	B8A0162-MS2@5X Matrix Spike 0.11755	1.58e2	1.4	YES

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Name: 180206M1_48, Date: 06-Feb-2018, Time: 20:13:42, ID: 1702193-01 921691257 3, Description: 921691257

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702193-01 921691257 3	9.11e3	69.6	NO
2	2	13C5-PFHxA	1702193-01 921691257 3	1.17e4	75.9	NO
3	3	13C3-PFHxS	1702193-01 921691257 3	2.41e3	72.1	NO
4	4	13C8-PFOA	1702193-01 921691257 3	1.12e4	82.6	NO
5	5	13C9-PFNA	1702193-01 921691257 3	8.45e3	54.8	NO
6	6	13C4-PFOS	1702193-01 921691257 3	2.86e3	76.2	NO
7	7	13C6-PFDA	1702193-01 921691257 3	1.02e4	98.6	NO
8	8	13C7-PFUdA	1702193-01 921691257 3	8.50e3	75.9	NO

Name: 180206M1_49, Date: 06-Feb-2018, Time: 20:25:06, ID: B8A0172-MS1@5X Matrix Spike 0.119, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0172-MS1@5X Matrix Spike 0.119	2.41e3	18.4	YES
2	2	13C5-PFHxA	B8A0172-MS1@5X Matrix Spike 0.119	2.50e3	16.2	YES
3	3	13C3-PFHxS	B8A0172-MS1@5X Matrix Spike 0.119	6.51e2	19.5	YES
4	4	13C8-PFOA	B8A0172-MS1@5X Matrix Spike 0.119	2.02e3	14.9	YES
5	5	13C9-PFNA	B8A0172-MS1@5X Matrix Spike 0.119	2.14e3	13.9	YES
6	6	13C4-PFOS	B8A0172-MS1@5X Matrix Spike 0.119	3.88e2	10.3	YES
7	7	13C6-PFDA	B8A0172-MS1@5X Matrix Spike 0.119	1.18e3	11.4	YES
8	8	13C7-PFUdA	B8A0172-MS1@5X Matrix Spike 0.119	9.18e2	8.2	YES

Name: 180206M1_50, Date: 06-Feb-2018, Time: 20:36:33, ID: B8A0172-MSD1@5X Matrix Spike Dup 0.11886, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0172-MSD1@5X Matrix Spike Dup ...	2.36e3	18.0	YES
2	2	13C5-PFHxA	B8A0172-MSD1@5X Matrix Spike Dup ...	2.47e3	16.0	YES
3	3	13C3-PFHxS	B8A0172-MSD1@5X Matrix Spike Dup ...	5.38e2	16.1	YES
4	4	13C8-PFOA	B8A0172-MSD1@5X Matrix Spike Dup ...	2.20e3	16.2	YES
5	5	13C9-PFNA	B8A0172-MSD1@5X Matrix Spike Dup ...	1.83e3	11.9	YES
6	6	13C4-PFOS	B8A0172-MSD1@5X Matrix Spike Dup ...	4.03e2	10.7	YES
7	7	13C6-PFDA	B8A0172-MSD1@5X Matrix Spike Dup ...	1.06e3	10.3	YES
8	8	13C7-PFUdA	B8A0172-MSD1@5X Matrix Spike Dup ...	8.36e2	7.5	YES

Name: 180206M1_51, Date: 06-Feb-2018, Time: 20:48:03, ID: 1800180-10@5X YEAGR-GW-DUP01-011918 0.11967, Description: YEAGR-GW-DUP01-011918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800180-10@5X YEAGR-GW-DUP01-0...	1.53e3	11.7	YES
2	2	13C5-PFHxA	1800180-10@5X YEAGR-GW-DUP01-0...	1.61e3	10.5	YES
3	3	13C3-PFHxS	1800180-10@5X YEAGR-GW-DUP01-0...	4.11e2	12.3	YES
4	4	13C8-PFOA	1800180-10@5X YEAGR-GW-DUP01-0...	1.22e3	9.0	YES
5	5	13C9-PFNA	1800180-10@5X YEAGR-GW-DUP01-0...	1.52e3	9.9	YES
6	6	13C4-PFOS	1800180-10@5X YEAGR-GW-DUP01-0...	3.06e2	8.2	YES
7	7	13C6-PFDA	1800180-10@5X YEAGR-GW-DUP01-0...	9.68e2	9.3	YES
8	8	13C7-PFUdA	1800180-10@5X YEAGR-GW-DUP01-0...	5.35e2	4.8	YES

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Name: 180206M1_52, Date: 06-Feb-2018, Time: 20:59:31, ID: 1800180-11@5X YEAGR-GW-ML-FL014-MW004-011918, Description: YEAGR-GW-ML-FL014-MW004-011918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800180-11@5X YEAGR-GW-ML-FL01...	1.63e3	12.4	YES
2	2	13C5-PFHxA	1800180-11@5X YEAGR-GW-ML-FL01...	2.03e3	13.2	YES
3	3	13C3-PFHxS	1800180-11@5X YEAGR-GW-ML-FL01...	4.48e2	13.4	YES
4	4	13C8-PFOA	1800180-11@5X YEAGR-GW-ML-FL01...	1.44e3	10.6	YES
5	5	13C9-PFNA	1800180-11@5X YEAGR-GW-ML-FL01...	1.38e3	8.9	YES
6	6	13C4-PFOS	1800180-11@5X YEAGR-GW-ML-FL01...	2.67e2	7.1	YES
7	7	13C6-PFDA	1800180-11@5X YEAGR-GW-ML-FL01...	5.62e2	5.4	YES
8	8	13C7-PFUdA	1800180-11@5X YEAGR-GW-ML-FL01...	2.27e2	2.0	YES

Name: 180206M1_53, Date: 06-Feb-2018, Time: 21:11:00, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_54, Date: 06-Feb-2018, Time: 21:22:30, ID: 1800180-17 YEAGR-09-SW01-012018 0.1174, Description: YEAGR-09-SW01-012018

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800180-17 YEAGR-09-SW01-012018 ...	9.07e3	69.3	NO
2	2	13C5-PFHxA	1800180-17 YEAGR-09-SW01-012018 ...	1.12e4	72.4	NO
3	3	13C3-PFHxS	1800180-17 YEAGR-09-SW01-012018 ...	2.55e3	76.2	NO
4	4	13C8-PFOA	1800180-17 YEAGR-09-SW01-012018 ...	9.36e3	69.0	NO
5	5	13C9-PFNA	1800180-17 YEAGR-09-SW01-012018 ...	9.21e3	59.7	NO
6	6	13C4-PFOS	1800180-17 YEAGR-09-SW01-012018 ...	2.08e3	55.3	NO
7	7	13C6-PFDA	1800180-17 YEAGR-09-SW01-012018 ...	4.55e3	43.8	YES
8	8	13C7-PFUdA	1800180-17 YEAGR-09-SW01-012018 ...	4.74e3	42.4	YES

Name: 180206M1_55, Date: 06-Feb-2018, Time: 21:33:59, ID: B8B0018-BS1 OPR 3, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8B0018-BS1 OPR 3	9.44e3	72.1	NO
2	2	13C5-PFHxA	B8B0018-BS1 OPR 3	1.07e4	69.6	NO
3	3	13C3-PFHxS	B8B0018-BS1 OPR 3	2.79e3	83.4	NO
4	4	13C8-PFOA	B8B0018-BS1 OPR 3	1.10e4	81.0	NO
5	5	13C9-PFNA	B8B0018-BS1 OPR 3	1.09e4	70.7	NO
6	6	13C4-PFOS	B8B0018-BS1 OPR 3	2.47e3	65.8	NO
7	7	13C6-PFDA	B8B0018-BS1 OPR 3	6.39e3	61.6	NO
8	8	13C7-PFUdA	B8B0018-BS1 OPR 3	4.31e3	38.5	YES

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Name: 180206M1_56, Date: 06-Feb-2018, Time: 21:45:30, ID: B8B0018-BLK1 Method Blank 3, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8B0018-BLK1 Method Blank 3	9.04e3	69.0	NO
2	2	13C5-PFHxA	B8B0018-BLK1 Method Blank 3	1.19e4	77.4	NO
3	3	13C3-PFHxS	B8B0018-BLK1 Method Blank 3	2.87e3	85.8	NO
4	4	13C8-PFOA	B8B0018-BLK1 Method Blank 3	1.05e4	77.4	NO
5	5	13C9-PFNA	B8B0018-BLK1 Method Blank 3	1.03e4	66.8	NO
6	6	13C4-PFOS	B8B0018-BLK1 Method Blank 3	2.02e3	53.9	NO
7	7	13C6-PFDA	B8B0018-BLK1 Method Blank 3	5.02e3	48.4	YES
8	8	13C7-PFUdA	B8B0018-BLK1 Method Blank 3	1.52e3	13.5	YES

Name: 180206M1_57, Date: 06-Feb-2018, Time: 21:56:59, ID: 1800219-01 Kenneth Kolker 3, Description: Kenneth Kolker

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800219-01 Kenneth Kolker 3	9.09e3	69.4	NO
2	2	13C5-PFHxA	1800219-01 Kenneth Kolker 3	1.14e4	73.9	NO
3	3	13C3-PFHxS	1800219-01 Kenneth Kolker 3	2.86e3	85.5	NO
4	4	13C8-PFOA	1800219-01 Kenneth Kolker 3	9.31e3	68.6	NO
5	5	13C9-PFNA	1800219-01 Kenneth Kolker 3	8.93e3	57.9	NO
6	6	13C4-PFOS	1800219-01 Kenneth Kolker 3	2.21e3	58.8	NO
7	7	13C6-PFDA	1800219-01 Kenneth Kolker 3	5.58e3	53.8	NO
8	8	13C7-PFUdA	1800219-01 Kenneth Kolker 3	3.74e3	33.4	YES

Name: 180206M1_58, Date: 06-Feb-2018, Time: 22:08:26, ID: B8B0017-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8B0017-BS1 OPR 0.25	8.29e3	63.3	NO
2	2	13C5-PFHxA	B8B0017-BS1 OPR 0.25	9.53e3	61.9	NO
3	3	13C3-PFHxS	B8B0017-BS1 OPR 0.25	2.42e3	72.3	NO
4	4	13C8-PFOA	B8B0017-BS1 OPR 0.25	9.71e3	71.6	NO
5	5	13C9-PFNA	B8B0017-BS1 OPR 0.25	8.80e3	57.1	NO
6	6	13C4-PFOS	B8B0017-BS1 OPR 0.25	2.18e3	58.1	NO
7	7	13C6-PFDA	B8B0017-BS1 OPR 0.25	7.97e3	76.9	NO
8	8	13C7-PFUdA	B8B0017-BS1 OPR 0.25	9.95e3	88.9	NO

Name: 180206M1_59, Date: 06-Feb-2018, Time: 22:19:56, ID: B8B0017-BSD1 LCSD 0.25, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8B0017-BSD1 LCSD 0.25	7.67e3	58.5	NO
2	2	13C5-PFHxA	B8B0017-BSD1 LCSD 0.25	9.26e3	60.1	NO
3	3	13C3-PFHxS	B8B0017-BSD1 LCSD 0.25	2.23e3	66.6	NO
4	4	13C8-PFOA	B8B0017-BSD1 LCSD 0.25	7.87e3	58.0	NO
5	5	13C9-PFNA	B8B0017-BSD1 LCSD 0.25	8.15e3	52.9	NO
6	6	13C4-PFOS	B8B0017-BSD1 LCSD 0.25	2.24e3	59.7	NO
7	7	13C6-PFDA	B8B0017-BSD1 LCSD 0.25	5.88e3	56.7	NO
8	8	13C7-PFUdA	B8B0017-BSD1 LCSD 0.25	9.63e3	86.0	NO

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Name: 180206M1_60, Date: 06-Feb-2018, Time: 22:31:25, ID: B8B0017-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8B0017-BLK1 Method Blank 0.25	7.73e3	59.1	NO
2	2	13C5-PFHxA	B8B0017-BLK1 Method Blank 0.25	8.79e3	57.0	NO
3	3	13C3-PFHxS	B8B0017-BLK1 Method Blank 0.25	2.56e3	76.4	NO
4	4	13C8-PFOA	B8B0017-BLK1 Method Blank 0.25	8.75e3	64.5	NO
5	5	13C9-PFNA	B8B0017-BLK1 Method Blank 0.25	9.54e3	61.9	NO
6	6	13C4-PFOS	B8B0017-BLK1 Method Blank 0.25	2.49e3	66.3	NO
7	7	13C6-PFDA	B8B0017-BLK1 Method Blank 0.25	7.33e3	70.7	NO
8	8	13C7-PFUdA	B8B0017-BLK1 Method Blank 0.25	8.87e3	79.2	NO

Name: 180206M1_61, Date: 06-Feb-2018, Time: 22:42:55, ID: 1800186-01RE1 REEPDW132 0.11965, Description: REEPDW132

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800186-01RE1 REEPDW132 0.11965	7.13e3	54.5	NO
2	2	13C5-PFHxA	1800186-01RE1 REEPDW132 0.11965	8.65e3	56.1	NO
3	3	13C3-PFHxS	1800186-01RE1 REEPDW132 0.11965	2.02e3	60.3	NO
4	4	13C8-PFOA	1800186-01RE1 REEPDW132 0.11965	6.62e3	48.8	YES
5	5	13C9-PFNA	1800186-01RE1 REEPDW132 0.11965	7.49e3	48.6	YES
6	6	13C4-PFOS	1800186-01RE1 REEPDW132 0.11965	1.97e3	52.4	NO
7	7	13C6-PFDA	1800186-01RE1 REEPDW132 0.11965	7.32e3	70.6	NO
8	8	13C7-PFUdA	1800186-01RE1 REEPDW132 0.11965	9.78e3	87.3	NO

Name: 180206M1_62, Date: 06-Feb-2018, Time: 22:54:22, ID: 1800186-02RE1 REEPDW133 0.11325, Description: REEPDW133

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800186-02RE1 REEPDW133 0.11325	6.77e3	51.7	NO
2	2	13C5-PFHxA	1800186-02RE1 REEPDW133 0.11325	8.10e3	52.5	NO
3	3	13C3-PFHxS	1800186-02RE1 REEPDW133 0.11325	2.16e3	64.6	NO
4	4	13C8-PFOA	1800186-02RE1 REEPDW133 0.11325	7.66e3	56.5	NO
5	5	13C9-PFNA	1800186-02RE1 REEPDW133 0.11325	7.71e3	50.0	NO
6	6	13C4-PFOS	1800186-02RE1 REEPDW133 0.11325	2.26e3	60.1	NO
7	7	13C6-PFDA	1800186-02RE1 REEPDW133 0.11325	7.74e3	74.6	NO
8	8	13C7-PFUdA	1800186-02RE1 REEPDW133 0.11325	8.77e3	78.3	NO

Name: 180206M1_63, Date: 06-Feb-2018, Time: 23:05:52, ID: 1800186-03RE1 REEPDW134 0.12036, Description: REEPDW134

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800186-03RE1 REEPDW134 0.12036	7.47e3	57.1	NO
2	2	13C5-PFHxA	1800186-03RE1 REEPDW134 0.12036	9.34e3	60.6	NO
3	3	13C3-PFHxS	1800186-03RE1 REEPDW134 0.12036	2.11e3	63.0	NO
4	4	13C8-PFOA	1800186-03RE1 REEPDW134 0.12036	7.88e3	58.1	NO
5	5	13C9-PFNA	1800186-03RE1 REEPDW134 0.12036	8.33e3	54.0	NO
6	6	13C4-PFOS	1800186-03RE1 REEPDW134 0.12036	2.25e3	59.9	NO
7	7	13C6-PFDA	1800186-03RE1 REEPDW134 0.12036	7.19e3	69.4	NO
8	8	13C7-PFUdA	1800186-03RE1 REEPDW134 0.12036	1.01e4	90.2	NO

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Name: 180206M1_64, Date: 06-Feb-2018, Time: 23:17:19, ID: 1800218-01 BZ79699 0.26192, Description: BZ79699

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800218-01 BZ79699 0.26192	7.58e3	57.9	NO
2	2	13C5-PFHxA	1800218-01 BZ79699 0.26192	9.02e3	58.5	NO
3	3	13C3-PFHxS	1800218-01 BZ79699 0.26192	2.43e3	72.7	NO
4	4	13C8-PFOA	1800218-01 BZ79699 0.26192	8.10e3	59.7	NO
5	5	13C9-PFNA	1800218-01 BZ79699 0.26192	9.08e3	58.9	NO
6	6	13C4-PFOS	1800218-01 BZ79699 0.26192	2.42e3	64.3	NO
7	7	13C6-PFDA	1800218-01 BZ79699 0.26192	5.85e3	56.4	NO
8	8	13C7-PFUdA	1800218-01 BZ79699 0.26192	9.45e3	84.4	NO

Name: 180206M1_65, Date: 06-Feb-2018, Time: 23:28:46, ID: 1800218-02 BZ79700 0.25325, Description: BZ79700

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800218-02 BZ79700 0.25325	7.24e3	55.3	NO
2	2	13C5-PFHxA	1800218-02 BZ79700 0.25325	9.67e3	62.7	NO
3	3	13C3-PFHxS	1800218-02 BZ79700 0.25325	2.46e3	73.4	NO
4	4	13C8-PFOA	1800218-02 BZ79700 0.25325	8.41e3	62.0	NO
5	5	13C9-PFNA	1800218-02 BZ79700 0.25325	8.05e3	52.2	NO
6	6	13C4-PFOS	1800218-02 BZ79700 0.25325	2.19e3	58.4	NO
7	7	13C6-PFDA	1800218-02 BZ79700 0.25325	7.14e3	68.8	NO
8	8	13C7-PFUdA	1800218-02 BZ79700 0.25325	9.08e3	81.1	NO

Name: 180206M1_66, Date: 06-Feb-2018, Time: 23:40:13, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-5 PFC CS0 18A3009	1.47e4	112.0	NO
2	2	13C5-PFHxA	ST180206M1-5 PFC CS0 18A3009	1.82e4	118.3	NO
3	3	13C3-PFHxS	ST180206M1-5 PFC CS0 18A3009	3.77e3	112.7	NO
4	4	13C8-PFOA	ST180206M1-5 PFC CS0 18A3009	1.35e4	99.5	NO
5	5	13C9-PFNA	ST180206M1-5 PFC CS0 18A3009	1.63e4	105.9	NO
6	6	13C4-PFOS	ST180206M1-5 PFC CS0 18A3009	4.18e3	111.4	NO
7	7	13C6-PFDA	ST180206M1-5 PFC CS0 18A3009	1.36e4	131.3	NO
8	8	13C7-PFUdA	ST180206M1-5 PFC CS0 18A3009	1.50e4	133.7	NO

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Name: 180206M1_68, Date: 07-Feb-2018, Time: 00:03:06, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_69, Date: 07-Feb-2018, Time: 00:14:36, ID: 1800225-01 WT1801251435MK 0.26369, Description: WT1801251435MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800225-01 WT1801251435MK 0.26369	7.03e3	53.7	NO
2	2	13C5-PFHxA	1800225-01 WT1801251435MK 0.26369	9.15e3	59.3	NO
3	3	13C3-PFHxS	1800225-01 WT1801251435MK 0.26369	2.00e3	59.8	NO
4	4	13C8-PFOA	1800225-01 WT1801251435MK 0.26369	7.66e3	56.5	NO
5	5	13C9-PFNA	1800225-01 WT1801251435MK 0.26369	8.83e3	57.3	NO
6	6	13C4-PFOS	1800225-01 WT1801251435MK 0.26369	2.33e3	62.1	NO
7	7	13C6-PFDA	1800225-01 WT1801251435MK 0.26369	7.61e3	73.4	NO
8	8	13C7-PFUdA	1800225-01 WT1801251435MK 0.26369	8.16e3	72.9	NO

Name: 180206M1_70, Date: 07-Feb-2018, Time: 00:26:05, ID: 1800225-02 FB1801251440MK 0.25785, Description: FB1801251440MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800225-02 FB1801251440MK 0.25785	7.93e3	60.5	NO
2	2	13C5-PFHxA	1800225-02 FB1801251440MK 0.25785	9.50e3	61.7	NO
3	3	13C3-PFHxS	1800225-02 FB1801251440MK 0.25785	2.34e3	69.9	NO
4	4	13C8-PFOA	1800225-02 FB1801251440MK 0.25785	8.42e3	62.1	NO
5	5	13C9-PFNA	1800225-02 FB1801251440MK 0.25785	1.03e4	67.0	NO
6	6	13C4-PFOS	1800225-02 FB1801251440MK 0.25785	2.17e3	57.9	NO
7	7	13C6-PFDA	1800225-02 FB1801251440MK 0.25785	7.21e3	69.6	NO
8	8	13C7-PFUdA	1800225-02 FB1801251440MK 0.25785	7.93e3	70.8	NO

Name: 180206M1_71, Date: 07-Feb-2018, Time: 00:37:34, ID: 1800225-03 WT1801251450MK 0.26447, Description: WT1801251450MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800225-03 WT1801251450MK 0.26447	8.10e3	61.8	NO
2	2	13C5-PFHxA	1800225-03 WT1801251450MK 0.26447	9.55e3	62.0	NO
3	3	13C3-PFHxS	1800225-03 WT1801251450MK 0.26447	2.31e3	68.9	NO
4	4	13C8-PFOA	1800225-03 WT1801251450MK 0.26447	7.99e3	58.9	NO
5	5	13C9-PFNA	1800225-03 WT1801251450MK 0.26447	7.57e3	49.1	YES
6	6	13C4-PFOS	1800225-03 WT1801251450MK 0.26447	2.72e3	72.3	NO
7	7	13C6-PFDA	1800225-03 WT1801251450MK 0.26447	6.39e3	61.7	NO
8	8	13C7-PFUdA	1800225-03 WT1801251450MK 0.26447	1.06e4	94.5	NO

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Name: 180206M1_72, Date: 07-Feb-2018, Time: 00:49:03, ID: 1800225-04 WSOFT1801251520MK 0.26174, Description: WSOFT1801251520MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800225-04 WSOFT1801251520MK 0....	6.78e3	51.8	NO
2	2	13C5-PFHxA	1800225-04 WSOFT1801251520MK 0....	8.19e3	53.2	NO
3	3	13C3-PFHxS	1800225-04 WSOFT1801251520MK 0....	2.10e3	62.7	NO
4	4	13C8-PFOA	1800225-04 WSOFT1801251520MK 0....	7.11e3	52.4	NO
5	5	13C9-PFNA	1800225-04 WSOFT1801251520MK 0....	7.77e3	50.4	NO
6	6	13C4-PFOS	1800225-04 WSOFT1801251520MK 0....	1.75e3	46.6	YES
7	7	13C6-PFDA	1800225-04 WSOFT1801251520MK 0....	6.72e3	64.8	NO
8	8	13C7-PFUdA	1800225-04 WSOFT1801251520MK 0....	7.96e3	71.1	NO

Name: 180206M1_73, Date: 07-Feb-2018, Time: 01:00:33, ID: 1800225-05 WR1801251535MK 0.26502, Description: WR1801251535MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800225-05 WR1801251535MK 0.26502	6.19e3	47.3	YES
2	2	13C5-PFHxA	1800225-05 WR1801251535MK 0.26502	7.92e3	51.4	NO
3	3	13C3-PFHxS	1800225-05 WR1801251535MK 0.26502	1.88e3	56.1	NO
4	4	13C8-PFOA	1800225-05 WR1801251535MK 0.26502	6.82e3	50.3	NO
5	5	13C9-PFNA	1800225-05 WR1801251535MK 0.26502	7.37e3	47.8	YES
6	6	13C4-PFOS	1800225-05 WR1801251535MK 0.26502	1.97e3	52.4	NO
7	7	13C6-PFDA	1800225-05 WR1801251535MK 0.26502	6.00e3	57.9	NO
8	8	13C7-PFUdA	1800225-05 WR1801251535MK 0.26502	8.48e3	75.7	NO

Name: 180206M1_74, Date: 07-Feb-2018, Time: 01:12:00, ID: 1800235-01 SW1801230935JLB 0.25866, Description: SW1801230935JLB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800235-01 SW1801230935JLB 0.25866	8.10e3	61.9	NO
2	2	13C5-PFHxA	1800235-01 SW1801230935JLB 0.25866	9.85e3	63.9	NO
3	3	13C3-PFHxS	1800235-01 SW1801230935JLB 0.25866	2.55e3	76.3	NO
4	4	13C8-PFOA	1800235-01 SW1801230935JLB 0.25866	8.79e3	64.8	NO
5	5	13C9-PFNA	1800235-01 SW1801230935JLB 0.25866	9.03e3	58.6	NO
6	6	13C4-PFOS	1800235-01 SW1801230935JLB 0.25866	2.64e3	70.4	NO
7	7	13C6-PFDA	1800235-01 SW1801230935JLB 0.25866	7.75e3	74.7	NO
8	8	13C7-PFUdA	1800235-01 SW1801230935JLB 0.25866	9.04e3	80.7	NO

Name: 180206M1_75, Date: 07-Feb-2018, Time: 01:23:29, ID: 1800235-03 SW1801231035JLB 0.25488, Description: SW1801231035JLB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800235-03 SW1801231035JLB 0.25488	7.83e3	59.8	NO
2	2	13C5-PFHxA	1800235-03 SW1801231035JLB 0.25488	8.78e3	57.0	NO
3	3	13C3-PFHxS	1800235-03 SW1801231035JLB 0.25488	2.67e3	79.7	NO
4	4	13C8-PFOA	1800235-03 SW1801231035JLB 0.25488	8.71e3	64.2	NO
5	5	13C9-PFNA	1800235-03 SW1801231035JLB 0.25488	8.68e3	56.3	NO
6	6	13C4-PFOS	1800235-03 SW1801231035JLB 0.25488	2.32e3	61.9	NO
7	7	13C6-PFDA	1800235-03 SW1801231035JLB 0.25488	7.84e3	75.6	NO
8	8	13C7-PFUdA	1800235-03 SW1801231035JLB 0.25488	9.31e3	83.2	NO

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Name: 180206M1_76, Date: 07-Feb-2018, Time: 01:34:56, ID: 1800245-01 GW1923180125RAP 0.26309, Description: GW1923180125RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800245-01 GW1923180125RAP 0.263...	7.71e3	58.9	NO
2	2	13C5-PFHxA	1800245-01 GW1923180125RAP 0.263...	9.46e3	61.4	NO
3	3	13C3-PFHxS	1800245-01 GW1923180125RAP 0.263...	2.31e3	68.9	NO
4	4	13C8-PFOA	1800245-01 GW1923180125RAP 0.263...	8.83e3	65.1	NO
5	5	13C9-PFNA	1800245-01 GW1923180125RAP 0.263...	8.22e3	53.3	NO
6	6	13C4-PFOS	1800245-01 GW1923180125RAP 0.263...	2.22e3	59.0	NO
7	7	13C6-PFDA	1800245-01 GW1923180125RAP 0.263...	6.60e3	63.6	NO
8	8	13C7-PFUdA	1800245-01 GW1923180125RAP 0.263...	8.14e3	72.7	NO

Name: 180206M1_77, Date: 07-Feb-2018, Time: 01:46:23, ID: 1800245-02 GW2933180125RAP 0.24912, Description: GW2933180125RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800245-02 GW2933180125RAP 0.249...	7.82e3	59.7	NO
2	2	13C5-PFHxA	1800245-02 GW2933180125RAP 0.249...	8.72e3	56.6	NO
3	3	13C3-PFHxS	1800245-02 GW2933180125RAP 0.249...	2.42e3	72.3	NO
4	4	13C8-PFOA	1800245-02 GW2933180125RAP 0.249...	9.43e3	69.5	NO
5	5	13C9-PFNA	1800245-02 GW2933180125RAP 0.249...	7.80e3	50.6	NO
6	6	13C4-PFOS	1800245-02 GW2933180125RAP 0.249...	2.23e3	59.4	NO
7	7	13C6-PFDA	1800245-02 GW2933180125RAP 0.249...	8.51e3	82.1	NO
8	8	13C7-PFUdA	1800245-02 GW2933180125RAP 0.249...	9.28e3	82.8	NO

Name: 180206M1_78, Date: 07-Feb-2018, Time: 01:57:50, ID: 1800245-03 GW3943180125RAP 0.24954, Description: GW3943180125RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800245-03 GW3943180125RAP 0.249...	7.09e3	54.2	NO
2	2	13C5-PFHxA	1800245-03 GW3943180125RAP 0.249...	7.90e3	51.3	NO
3	3	13C3-PFHxS	1800245-03 GW3943180125RAP 0.249...	2.08e3	62.3	NO
4	4	13C8-PFOA	1800245-03 GW3943180125RAP 0.249...	6.51e3	48.0	YES
5	5	13C9-PFNA	1800245-03 GW3943180125RAP 0.249...	9.65e3	62.6	NO
6	6	13C4-PFOS	1800245-03 GW3943180125RAP 0.249...	2.33e3	62.0	NO
7	7	13C6-PFDA	1800245-03 GW3943180125RAP 0.249...	7.21e3	69.6	NO
8	8	13C7-PFUdA	1800245-03 GW3943180125RAP 0.249...	9.12e3	81.4	NO

Name: 180206M1_79, Date: 07-Feb-2018, Time: 02:09:20, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

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Name: 180206M1_80, Date: 07-Feb-2018, Time: 02:20:49, ID: ST180206M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-6 PFC CS3 18A3012	1.49e4	114.1	NO
2	2	13C5-PFHxA	ST180206M1-6 PFC CS3 18A3012	1.90e4	123.4	NO
3	3	13C3-PFHxS	ST180206M1-6 PFC CS3 18A3012	4.39e3	131.4	NO
4	4	13C8-PFOA	ST180206M1-6 PFC CS3 18A3012	1.59e4	117.0	NO
5	5	13C9-PFNA	ST180206M1-6 PFC CS3 18A3012	1.43e4	92.7	NO
6	6	13C4-PFOS	ST180206M1-6 PFC CS3 18A3012	4.27e3	113.7	NO
7	7	13C6-PFDA	ST180206M1-6 PFC CS3 18A3012	1.51e4	145.8	NO
8	8	13C7-PFUdA	ST180206M1-6 PFC CS3 18A3012	1.79e4	160.1	YES

Name: 180206M1_81, Date: 07-Feb-2018, Time: 02:32:19, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_82, Date: 07-Feb-2018, Time: 02:43:48, ID: B8A0167-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BS1 OPR 0.125	9.63e3	73.5	NO
2	2	13C5-PFHxA	B8A0167-BS1 OPR 0.125	1.14e4	73.8	NO
3	3	13C3-PFHxS	B8A0167-BS1 OPR 0.125	2.74e3	81.8	NO
4	4	13C8-PFOA	B8A0167-BS1 OPR 0.125	9.92e3	73.1	NO
5	5	13C9-PFNA	B8A0167-BS1 OPR 0.125	1.18e4	76.8	NO
6	6	13C4-PFOS	B8A0167-BS1 OPR 0.125	2.03e3	54.0	NO
7	7	13C6-PFDA	B8A0167-BS1 OPR 0.125	5.84e3	56.3	NO
8	8	13C7-PFUdA	B8A0167-BS1 OPR 0.125	2.01e3	18.0	YES

Name: 180206M1_83, Date: 07-Feb-2018, Time: 02:55:18, ID: B8A0167-BSD1 LCSD 0.125, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BSD1 LCSD 0.125	9.26e3	70.7	NO
2	2	13C5-PFHxA	B8A0167-BSD1 LCSD 0.125	1.14e4	74.2	NO
3	3	13C3-PFHxS	B8A0167-BSD1 LCSD 0.125	2.56e3	76.5	NO
4	4	13C8-PFOA	B8A0167-BSD1 LCSD 0.125	9.09e3	67.0	NO
5	5	13C9-PFNA	B8A0167-BSD1 LCSD 0.125	7.60e3	49.3	YES
6	6	13C4-PFOS	B8A0167-BSD1 LCSD 0.125	1.95e3	52.0	NO
7	7	13C6-PFDA	B8A0167-BSD1 LCSD 0.125	4.04e3	39.0	YES
8	8	13C7-PFUdA	B8A0167-BSD1 LCSD 0.125	2.63e3	23.5	YES

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Name: 180206M1_84, Date: 07-Feb-2018, Time: 03:06:44, ID: B8A0167-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BLK1 Method Blank 0.125	9.28e3	70.9	NO
2	2	13C5-PFHxA	B8A0167-BLK1 Method Blank 0.125	1.06e4	68.6	NO
3	3	13C3-PFHxS	B8A0167-BLK1 Method Blank 0.125	2.50e3	74.8	NO
4	4	13C8-PFOA	B8A0167-BLK1 Method Blank 0.125	1.06e4	77.9	NO
5	5	13C9-PFNA	B8A0167-BLK1 Method Blank 0.125	1.03e4	66.9	NO
6	6	13C4-PFOS	B8A0167-BLK1 Method Blank 0.125	2.10e3	55.9	NO
7	7	13C6-PFDA	B8A0167-BLK1 Method Blank 0.125	7.10e3	68.4	NO
8	8	13C7-PFUdA	B8A0167-BLK1 Method Blank 0.125	4.35e3	38.9	YES

Name: 180206M1_85, Date: 07-Feb-2018, Time: 03:18:14, ID: 1800156-09 MINNE-06-SW01-011718 0.12113, Description: MINNE-06-SW01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-09 MINNE-06-SW01-011718 0...	8.97e3	68.5	NO
2	2	13C5-PFHxA	1800156-09 MINNE-06-SW01-011718 0...	1.17e4	76.0	NO
3	3	13C3-PFHxS	1800156-09 MINNE-06-SW01-011718 0...	2.97e3	88.8	NO
4	4	13C8-PFOA	1800156-09 MINNE-06-SW01-011718 0...	1.06e4	78.4	NO
5	5	13C9-PFNA	1800156-09 MINNE-06-SW01-011718 0...	1.00e4	65.0	NO
6	6	13C4-PFOS	1800156-09 MINNE-06-SW01-011718 0...	2.47e3	65.7	NO
7	7	13C6-PFDA	1800156-09 MINNE-06-SW01-011718 0...	7.78e3	75.0	NO
8	8	13C7-PFUdA	1800156-09 MINNE-06-SW01-011718 0...	9.38e3	83.8	NO

Name: 180206M1_86, Date: 07-Feb-2018, Time: 03:29:43, ID: 1800156-10 MINNE-GW-DUP02-011218 0.12287, Description: MINNE-GW-DUP02-011218

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-10 MINNE-GW-DUP02-01121...	9.13e3	69.7	NO
2	2	13C5-PFHxA	1800156-10 MINNE-GW-DUP02-01121...	1.08e4	70.1	NO
3	3	13C3-PFHxS	1800156-10 MINNE-GW-DUP02-01121...	2.40e3	71.7	NO
4	4	13C8-PFOA	1800156-10 MINNE-GW-DUP02-01121...	9.08e3	66.9	NO
5	5	13C9-PFNA	1800156-10 MINNE-GW-DUP02-01121...	8.49e3	55.1	NO
6	6	13C4-PFOS	1800156-10 MINNE-GW-DUP02-01121...	1.84e3	49.1	YES
7	7	13C6-PFDA	1800156-10 MINNE-GW-DUP02-01121...	5.83e3	56.2	NO
8	8	13C7-PFUdA	1800156-10 MINNE-GW-DUP02-01121...	2.78e3	24.8	YES

Name: 180206M1_87, Date: 07-Feb-2018, Time: 03:41:10, ID: 1800156-11 MINNE-GW-TW01A-011218 0.12321, Description: MINNE-GW-TW01A-011218

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-11 MINNE-GW-TW01A-01121...	9.26e3	70.7	NO
2	2	13C5-PFHxA	1800156-11 MINNE-GW-TW01A-01121...	1.14e4	73.8	NO
3	3	13C3-PFHxS	1800156-11 MINNE-GW-TW01A-01121...	2.76e3	82.5	NO
4	4	13C8-PFOA	1800156-11 MINNE-GW-TW01A-01121...	1.01e4	74.2	NO
5	5	13C9-PFNA	1800156-11 MINNE-GW-TW01A-01121...	9.21e3	59.7	NO
6	6	13C4-PFOS	1800156-11 MINNE-GW-TW01A-01121...	2.11e3	56.3	NO
7	7	13C6-PFDA	1800156-11 MINNE-GW-TW01A-01121...	6.36e3	61.4	NO
8	8	13C7-PFUdA	1800156-11 MINNE-GW-TW01A-01121...	4.52e3	40.3	YES

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Name: 180206M1_88, Date: 07-Feb-2018, Time: 03:52:37, ID: 1800159-12 MINNE-GW-TW10-011718 0.1059, Description: MINNE-GW-TW10-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800159-12 MINNE-GW-TW10-011718 ...	9.82e3	75.0	NO
2	2	13C5-PFHxA	1800159-12 MINNE-GW-TW10-011718 ...	1.18e4	76.4	NO
3	3	13C3-PFHxS	1800159-12 MINNE-GW-TW10-011718 ...	2.84e3	85.0	NO
4	4	13C8-PFOA	1800159-12 MINNE-GW-TW10-011718 ...	1.04e4	76.6	NO
5	5	13C9-PFNA	1800159-12 MINNE-GW-TW10-011718 ...	1.03e4	66.6	NO
6	6	13C4-PFOS	1800159-12 MINNE-GW-TW10-011718 ...	2.25e3	60.0	NO
7	7	13C6-PFDA	1800159-12 MINNE-GW-TW10-011718 ...	7.66e3	73.8	NO
8	8	13C7-PFUdA	1800159-12 MINNE-GW-TW10-011718 ...	9.44e3	84.3	NO

Name: 180206M1_89, Date: 07-Feb-2018, Time: 04:04:04, ID: 1800178-12 YEAGR-SW-DUP01-011718 0.12161, Description: YEAGR-SW-DUP01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800178-12 YEAGR-SW-DUP01-01171...	8.45e3	64.5	NO
2	2	13C5-PFHxA	1800178-12 YEAGR-SW-DUP01-01171...	9.54e3	61.9	NO
3	3	13C3-PFHxS	1800178-12 YEAGR-SW-DUP01-01171...	2.16e3	64.6	NO
4	4	13C8-PFOA	1800178-12 YEAGR-SW-DUP01-01171...	9.47e3	69.8	NO
5	5	13C9-PFNA	1800178-12 YEAGR-SW-DUP01-01171...	7.85e3	50.9	NO
6	6	13C4-PFOS	1800178-12 YEAGR-SW-DUP01-01171...	2.06e3	55.0	NO
7	7	13C6-PFDA	1800178-12 YEAGR-SW-DUP01-01171...	5.14e3	49.6	YES
8	8	13C7-PFUdA	1800178-12 YEAGR-SW-DUP01-01171...	5.92e3	52.9	NO

Name: 180206M1_90, Date: 07-Feb-2018, Time: 04:15:30, ID: 1800179-12 YEAGR-GW-BW02-011918 0.11851, Description: YEAGR-GW-BW02-011918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800179-12 YEAGR-GW-BW02-011918...	8.58e3	65.6	NO
2	2	13C5-PFHxA	1800179-12 YEAGR-GW-BW02-011918...	1.05e4	68.3	NO
3	3	13C3-PFHxS	1800179-12 YEAGR-GW-BW02-011918...	2.75e3	82.1	NO
4	4	13C8-PFOA	1800179-12 YEAGR-GW-BW02-011918...	8.37e3	61.7	NO
5	5	13C9-PFNA	1800179-12 YEAGR-GW-BW02-011918...	9.65e3	62.6	NO
6	6	13C4-PFOS	1800179-12 YEAGR-GW-BW02-011918...	2.50e3	66.6	NO
7	7	13C6-PFDA	1800179-12 YEAGR-GW-BW02-011918...	6.86e3	66.1	NO
8	8	13C7-PFUdA	1800179-12 YEAGR-GW-BW02-011918...	8.17e3	73.0	NO

Name: 180206M1_91, Date: 07-Feb-2018, Time: 04:26:57, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA	5.68e0	0.1	YES
8	8	13C7-PFUdA	IPA			NO

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Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-7 PFC CS3 18A3012	1.58e4	120.4	NO
2	2	13C5-PFHxA	ST180206M1-7 PFC CS3 18A3012	1.82e4	118.1	NO
3	3	13C3-PFHxS	ST180206M1-7 PFC CS3 18A3012	3.83e3	114.6	NO
4	4	13C8-PFOA	ST180206M1-7 PFC CS3 18A3012	1.98e4	146.0	NO
5	5	13C9-PFNA	ST180206M1-7 PFC CS3 18A3012	1.96e4	127.2	NO
6	6	13C4-PFOS	ST180206M1-7 PFC CS3 18A3012	4.16e3	110.9	NO
7	7	13C6-PFDA	ST180206M1-7 PFC CS3 18A3012	1.49e4	143.4	NO
8	8	13C7-PFUdA	ST180206M1-7 PFC CS3 18A3012	1.45e4	129.2	NO

Name: 180206M1_93, Date: 07-Feb-2018, Time: 04:49:56, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-BS1 OPR 1	9.68e3	73.9	NO
2	2	13C5-PFHxA	B8A0197-BS1 OPR 1	1.11e4	72.2	NO
3	3	13C3-PFHxS	B8A0197-BS1 OPR 1	2.17e3	64.8	NO
4	4	13C8-PFOA	B8A0197-BS1 OPR 1	9.38e3	69.1	NO
5	5	13C9-PFNA	B8A0197-BS1 OPR 1	8.27e3	53.6	NO
6	6	13C4-PFOS	B8A0197-BS1 OPR 1	1.06e3	28.1	YES
7	7	13C6-PFDA	B8A0197-BS1 OPR 1	2.13e3	20.5	YES
8	8	13C7-PFUdA	B8A0197-BS1 OPR 1	3.91e2	3.5	YES

Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-BLK1 Method Blank 1	8.82e3	67.4	NO
2	2	13C5-PFHxA	B8A0197-BLK1 Method Blank 1	1.26e4	81.7	NO
3	3	13C3-PFHxS	B8A0197-BLK1 Method Blank 1	2.51e3	74.9	NO
4	4	13C8-PFOA	B8A0197-BLK1 Method Blank 1	9.93e3	73.2	NO
5	5	13C9-PFNA	B8A0197-BLK1 Method Blank 1	1.18e4	76.4	NO
6	6	13C4-PFOS	B8A0197-BLK1 Method Blank 1	2.03e3	54.0	NO
7	7	13C6-PFDA	B8A0197-BLK1 Method Blank 1	4.41e3	42.5	YES
8	8	13C7-PFUdA	B8A0197-BLK1 Method Blank 1	2.07e3	18.5	YES

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Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-MS1 Matrix Spike 1.27	9.70e3	74.1	NO
2	2	13C5-PFHxA	B8A0197-MS1 Matrix Spike 1.27	1.14e4	74.0	NO
3	3	13C3-PFHxS	B8A0197-MS1 Matrix Spike 1.27	2.85e3	85.1	NO
4	4	13C8-PFOA	B8A0197-MS1 Matrix Spike 1.27	9.54e3	70.3	NO
5	5	13C9-PFNA	B8A0197-MS1 Matrix Spike 1.27	7.79e3	50.6	NO
6	6	13C4-PFOS	B8A0197-MS1 Matrix Spike 1.27	1.55e3	41.3	YES
7	7	13C6-PFDA	B8A0197-MS1 Matrix Spike 1.27	3.90e3	37.6	YES
8	8	13C7-PFUdA	B8A0197-MS1 Matrix Spike 1.27	9.62e2	8.6	YES

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-MSD1 Matrix Spike Dup 1.21	9.90e3	75.6	NO
2	2	13C5-PFHxA	B8A0197-MSD1 Matrix Spike Dup 1.21	1.04e4	67.7	NO
3	3	13C3-PFHxS	B8A0197-MSD1 Matrix Spike Dup 1.21	2.72e3	81.2	NO
4	4	13C8-PFOA	B8A0197-MSD1 Matrix Spike Dup 1.21	9.79e3	72.2	NO
5	5	13C9-PFNA	B8A0197-MSD1 Matrix Spike Dup 1.21	8.45e3	54.8	NO
6	6	13C4-PFOS	B8A0197-MSD1 Matrix Spike Dup 1.21	1.81e3	48.2	YES
7	7	13C6-PFDA	B8A0197-MSD1 Matrix Spike Dup 1.21	4.22e3	40.7	YES
8	8	13C7-PFUdA	B8A0197-MSD1 Matrix Spike Dup 1.21	1.11e3	9.9	YES

Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-01 FT-SS501-0001 1.23	8.99e3	68.7	NO
2	2	13C5-PFHxA	1800140-01 FT-SS501-0001 1.23	1.11e4	72.3	NO
3	3	13C3-PFHxS	1800140-01 FT-SS501-0001 1.23	2.88e3	86.2	NO
4	4	13C8-PFOA	1800140-01 FT-SS501-0001 1.23	8.39e3	61.9	NO
5	5	13C9-PFNA	1800140-01 FT-SS501-0001 1.23	8.42e3	54.6	NO
6	6	13C4-PFOS	1800140-01 FT-SS501-0001 1.23	2.26e3	60.2	NO
7	7	13C6-PFDA	1800140-01 FT-SS501-0001 1.23	5.26e3	50.7	NO
8	8	13C7-PFUdA	1800140-01 FT-SS501-0001 1.23	4.29e3	38.3	YES

Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-02 FT-SS502-0001 1.17	8.45e3	64.5	NO
2	2	13C5-PFHxA	1800140-02 FT-SS502-0001 1.17	1.08e4	69.8	NO
3	3	13C3-PFHxS	1800140-02 FT-SS502-0001 1.17	2.92e3	87.2	NO
4	4	13C8-PFOA	1800140-02 FT-SS502-0001 1.17	8.86e3	65.3	NO
5	5	13C9-PFNA	1800140-02 FT-SS502-0001 1.17	1.03e4	66.9	NO
6	6	13C4-PFOS	1800140-02 FT-SS502-0001 1.17	2.37e3	63.0	NO
7	7	13C6-PFDA	1800140-02 FT-SS502-0001 1.17	5.51e3	53.1	NO
8	8	13C7-PFUdA	1800140-02 FT-SS502-0001 1.17	3.50e3	31.2	YES

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Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-03 FT-SS503-0001 1.34	9.30e3	71.0	NO
2	2	13C5-PFHxA	1800140-03 FT-SS503-0001 1.34	1.20e4	78.2	NO
3	3	13C3-PFHxS	1800140-03 FT-SS503-0001 1.34	3.02e3	90.3	NO
4	4	13C8-PFOA	1800140-03 FT-SS503-0001 1.34	9.56e3	70.5	NO
5	5	13C9-PFNA	1800140-03 FT-SS503-0001 1.34	8.66e3	56.2	NO
6	6	13C4-PFOS	1800140-03 FT-SS503-0001 1.34	2.88e3	76.7	NO
7	7	13C6-PFDA	1800140-03 FT-SS503-0001 1.34	6.43e3	62.0	NO
8	8	13C7-PFUdA	1800140-03 FT-SS503-0001 1.34	6.11e3	54.5	NO

Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-04 FT-SB504-2022 1.26	9.00e3	68.8	NO
2	2	13C5-PFHxA	1800140-04 FT-SB504-2022 1.26	1.12e4	72.9	NO
3	3	13C3-PFHxS	1800140-04 FT-SB504-2022 1.26	2.53e3	75.7	NO
4	4	13C8-PFOA	1800140-04 FT-SB504-2022 1.26	8.39e3	61.8	NO
5	5	13C9-PFNA	1800140-04 FT-SB504-2022 1.26	9.15e3	59.3	NO
6	6	13C4-PFOS	1800140-04 FT-SB504-2022 1.26	2.28e3	60.6	NO
7	7	13C6-PFDA	1800140-04 FT-SB504-2022 1.26	7.34e3	70.7	NO
8	8	13C7-PFUdA	1800140-04 FT-SB504-2022 1.26	6.02e3	53.8	NO

Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-05 FT-SB505-1618 1.21	8.96e3	68.4	NO
2	2	13C5-PFHxA	1800140-05 FT-SB505-1618 1.21	1.21e4	78.3	NO
3	3	13C3-PFHxS	1800140-05 FT-SB505-1618 1.21	2.62e3	78.4	NO
4	4	13C8-PFOA	1800140-05 FT-SB505-1618 1.21	1.09e4	80.4	NO
5	5	13C9-PFNA	1800140-05 FT-SB505-1618 1.21	8.16e3	52.9	NO
6	6	13C4-PFOS	1800140-05 FT-SB505-1618 1.21	1.46e3	39.0	YES
7	7	13C6-PFDA	1800140-05 FT-SB505-1618 1.21	3.30e3	31.8	YES
8	8	13C7-PFUdA	1800140-05 FT-SB505-1618 1.21	8.96e2	8.0	YES

Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-06 FT-SB506-2022 1.26	9.27e3	70.8	NO
2	2	13C5-PFHxA	1800140-06 FT-SB506-2022 1.26	1.17e4	76.1	NO
3	3	13C3-PFHxS	1800140-06 FT-SB506-2022 1.26	2.68e3	80.1	NO
4	4	13C8-PFOA	1800140-06 FT-SB506-2022 1.26	1.02e4	75.6	NO
5	5	13C9-PFNA	1800140-06 FT-SB506-2022 1.26	9.13e3	59.2	NO
6	6	13C4-PFOS	1800140-06 FT-SB506-2022 1.26	1.26e3	33.5	YES
7	7	13C6-PFDA	1800140-06 FT-SB506-2022 1.26	2.63e3	25.4	YES
8	8	13C7-PFUdA	1800140-06 FT-SB506-2022 1.26	1.09e3	9.7	YES

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Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-07 FT-SB507-1819 1.27	8.83e3	67.4	NO
2	2	13C5-PFHxA	1800140-07 FT-SB507-1819 1.27	1.08e4	70.1	NO
3	3	13C3-PFHxS	1800140-07 FT-SB507-1819 1.27	3.04e3	90.8	NO
4	4	13C8-PFOA	1800140-07 FT-SB507-1819 1.27	8.75e3	64.5	NO
5	5	13C9-PFNA	1800140-07 FT-SB507-1819 1.27	8.84e3	57.3	NO
6	6	13C4-PFOS	1800140-07 FT-SB507-1819 1.27	1.60e3	42.5	YES
7	7	13C6-PFDA	1800140-07 FT-SB507-1819 1.27	5.09e3	49.1	YES
8	8	13C7-PFUdA	1800140-07 FT-SB507-1819 1.27	1.44e3	12.9	YES

Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-08 FT-SB508-1617 1.23	1.07e4	81.8	NO
2	2	13C5-PFHxA	1800140-08 FT-SB508-1617 1.23	1.28e4	83.3	NO
3	3	13C3-PFHxS	1800140-08 FT-SB508-1617 1.23	3.32e3	99.2	NO
4	4	13C8-PFOA	1800140-08 FT-SB508-1617 1.23	1.16e4	85.5	NO
5	5	13C9-PFNA	1800140-08 FT-SB508-1617 1.23	1.25e4	81.0	NO
6	6	13C4-PFOS	1800140-08 FT-SB508-1617 1.23	2.55e3	68.0	NO
7	7	13C6-PFDA	1800140-08 FT-SB508-1617 1.23	6.58e3	63.5	NO
8	8	13C7-PFUdA	1800140-08 FT-SB508-1617 1.23	3.79e3	33.9	YES

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-09 FT-SB509-1718 1.33	9.52e3	72.7	NO
2	2	13C5-PFHxA	1800140-09 FT-SB509-1718 1.33	1.11e4	72.3	NO
3	3	13C3-PFHxS	1800140-09 FT-SB509-1718 1.33	2.74e3	81.9	NO
4	4	13C8-PFOA	1800140-09 FT-SB509-1718 1.33	1.09e4	80.4	NO
5	5	13C9-PFNA	1800140-09 FT-SB509-1718 1.33	7.41e3	48.1	YES
6	6	13C4-PFOS	1800140-09 FT-SB509-1718 1.33	1.12e3	29.9	YES
7	7	13C6-PFDA	1800140-09 FT-SB509-1718 1.33	3.20e3	30.9	YES
8	8	13C7-PFUdA	1800140-09 FT-SB509-1718 1.33	1.19e3	10.6	YES

Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-10 FT-SB510-0910 1.16	9.90e3	75.6	NO
2	2	13C5-PFHxA	1800140-10 FT-SB510-0910 1.16	1.35e4	87.6	NO
3	3	13C3-PFHxS	1800140-10 FT-SB510-0910 1.16	2.86e3	85.4	NO
4	4	13C8-PFOA	1800140-10 FT-SB510-0910 1.16	1.15e4	84.8	NO
5	5	13C9-PFNA	1800140-10 FT-SB510-0910 1.16	9.97e3	64.7	NO
6	6	13C4-PFOS	1800140-10 FT-SB510-0910 1.16	2.73e3	72.7	NO
7	7	13C6-PFDA	1800140-10 FT-SB510-0910 1.16	8.02e3	77.3	NO
8	8	13C7-PFUdA	1800140-10 FT-SB510-0910 1.16	5.36e3	47.8	YES

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Name: 180206M1_108, Date: 07-Feb-2018, Time: 07:42:05, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA	5.42e0	0.1	YES
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-8 PFC CS3 18A3012	1.68e4	128.0	NO
2	2	13C5-PFHxA	ST180206M1-8 PFC CS3 18A3012	2.06e4	133.7	NO
3	3	13C3-PFHxS	ST180206M1-8 PFC CS3 18A3012	4.71e3	140.9	NO
4	4	13C8-PFOA	ST180206M1-8 PFC CS3 18A3012	2.03e4	150.0	YES
5	5	13C9-PFNA	ST180206M1-8 PFC CS3 18A3012	1.57e4	101.7	NO
6	6	13C4-PFOS	ST180206M1-8 PFC CS3 18A3012	4.26e3	113.5	NO
7	7	13C6-PFDA	ST180206M1-8 PFC CS3 18A3012	1.29e4	124.2	NO
8	8	13C7-PFUdA	ST180206M1-8 PFC CS3 18A3012	1.92e4	171.4	YES

Name: 180206M1_110, Date: 07-Feb-2018, Time: 08:04:58, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA	6.62e0	0.0	YES
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-11 FT-SB510-1415 1.22	9.24e3	70.6	NO
2	2	13C5-PFHxA	1800140-11 FT-SB510-1415 1.22	1.11e4	72.1	NO
3	3	13C3-PFHxS	1800140-11 FT-SB510-1415 1.22	2.84e3	84.8	NO
4	4	13C8-PFOA	1800140-11 FT-SB510-1415 1.22	9.05e3	66.7	NO
5	5	13C9-PFNA	1800140-11 FT-SB510-1415 1.22	8.40e3	54.5	NO
6	6	13C4-PFOS	1800140-11 FT-SB510-1415 1.22	2.39e3	63.5	NO
7	7	13C6-PFDA	1800140-11 FT-SB510-1415 1.22	5.64e3	54.4	NO
8	8	13C7-PFUdA	1800140-11 FT-SB510-1415 1.22	2.77e3	24.7	YES

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Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-12 FT-SB511-1617 1.24	9.11e3	69.6	NO
2	2	13C5-PFHxA	1800140-12 FT-SB511-1617 1.24	1.10e4	71.1	NO
3	3	13C3-PFHxS	1800140-12 FT-SB511-1617 1.24	2.46e3	73.4	NO
4	4	13C8-PFOA	1800140-12 FT-SB511-1617 1.24	1.00e4	73.9	NO
5	5	13C9-PFNA	1800140-12 FT-SB511-1617 1.24	1.12e4	72.9	NO
6	6	13C4-PFOS	1800140-12 FT-SB511-1617 1.24	2.47e3	65.8	NO
7	7	13C6-PFDA	1800140-12 FT-SB511-1617 1.24	7.35e3	70.9	NO
8	8	13C7-PFUdA	1800140-12 FT-SB511-1617 1.24	6.13e3	54.8	NO

Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-13 FT-SS512-0001 1.2	7.76e3	59.3	NO
2	2	13C5-PFHxA	1800140-13 FT-SS512-0001 1.2	9.91e3	64.3	NO
3	3	13C3-PFHxS	1800140-13 FT-SS512-0001 1.2	2.63e3	78.5	NO
4	4	13C8-PFOA	1800140-13 FT-SS512-0001 1.2	8.25e3	60.8	NO
5	5	13C9-PFNA	1800140-13 FT-SS512-0001 1.2	6.27e3	40.7	YES
6	6	13C4-PFOS	1800140-13 FT-SS512-0001 1.2	1.84e3	49.0	YES
7	7	13C6-PFDA	1800140-13 FT-SS512-0001 1.2	2.42e3	23.4	YES
8	8	13C7-PFUdA	1800140-13 FT-SS512-0001 1.2	8.57e2	7.7	YES

Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-14 FT-SB512-0708 1.22	8.99e3	68.6	NO
2	2	13C5-PFHxA	1800140-14 FT-SB512-0708 1.22	9.95e3	64.6	NO
3	3	13C3-PFHxS	1800140-14 FT-SB512-0708 1.22	2.70e3	80.8	NO
4	4	13C8-PFOA	1800140-14 FT-SB512-0708 1.22	9.88e3	72.8	NO
5	5	13C9-PFNA	1800140-14 FT-SB512-0708 1.22	8.59e3	55.7	NO
6	6	13C4-PFOS	1800140-14 FT-SB512-0708 1.22	1.23e3	32.7	YES
7	7	13C6-PFDA	1800140-14 FT-SB512-0708 1.22	1.96e3	18.9	YES
8	8	13C7-PFUdA	1800140-14 FT-SB512-0708 1.22	5.63e2	5.0	YES

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-15 FT-SB512-2223 1.2	8.67e3	66.2	NO
2	2	13C5-PFHxA	1800140-15 FT-SB512-2223 1.2	1.22e4	78.9	NO
3	3	13C3-PFHxS	1800140-15 FT-SB512-2223 1.2	2.65e3	79.2	NO
4	4	13C8-PFOA	1800140-15 FT-SB512-2223 1.2	9.53e3	70.3	NO
5	5	13C9-PFNA	1800140-15 FT-SB512-2223 1.2	6.73e3	43.6	YES
6	6	13C4-PFOS	1800140-15 FT-SB512-2223 1.2	1.04e3	27.6	YES
7	7	13C6-PFDA	1800140-15 FT-SB512-2223 1.2	2.23e3	21.5	YES
8	8	13C7-PFUdA	1800140-15 FT-SB512-2223 1.2	5.92e2	5.3	YES

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Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-IIS AREAS.qld

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Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-16 FT-SS513-0001 1.19	7.86e3	60.0	NO
2	2	13C5-PFHxA	1800140-16 FT-SS513-0001 1.19	9.42e3	61.1	NO
3	3	13C3-PFHxS	1800140-16 FT-SS513-0001 1.19	2.94e3	88.0	NO
4	4	13C8-PFOA	1800140-16 FT-SS513-0001 1.19	9.52e3	70.2	NO
5	5	13C9-PFNA	1800140-16 FT-SS513-0001 1.19	1.10e4	71.3	NO
6	6	13C4-PFOS	1800140-16 FT-SS513-0001 1.19	3.28e3	87.4	NO
7	7	13C6-PFDA	1800140-16 FT-SS513-0001 1.19	9.01e3	86.9	NO
8	8	13C7-PFUdA	1800140-16 FT-SS513-0001 1.19	1.57e4	140.6	NO

Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-17 FT-SB513-1819 1.22	8.88e3	67.8	NO
2	2	13C5-PFHxA	1800140-17 FT-SB513-1819 1.22	1.15e4	74.6	NO
3	3	13C3-PFHxS	1800140-17 FT-SB513-1819 1.22	2.61e3	77.9	NO
4	4	13C8-PFOA	1800140-17 FT-SB513-1819 1.22	9.90e3	73.0	NO
5	5	13C9-PFNA	1800140-17 FT-SB513-1819 1.22	5.80e3	37.6	YES
6	6	13C4-PFOS	1800140-17 FT-SB513-1819 1.22	6.79e2	18.1	YES
7	7	13C6-PFDA	1800140-17 FT-SB513-1819 1.22	2.02e3	19.5	YES
8	8	13C7-PFUdA	1800140-17 FT-SB513-1819 1.22	7.03e2	6.3	YES

Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-18 FT-Dup01-20180116 1.2	9.25e3	70.6	NO
2	2	13C5-PFHxA	1800140-18 FT-Dup01-20180116 1.2	1.10e4	71.6	NO
3	3	13C3-PFHxS	1800140-18 FT-Dup01-20180116 1.2	2.90e3	86.7	NO
4	4	13C8-PFOA	1800140-18 FT-Dup01-20180116 1.2	1.08e4	79.8	NO
5	5	13C9-PFNA	1800140-18 FT-Dup01-20180116 1.2	1.02e4	66.1	NO
6	6	13C4-PFOS	1800140-18 FT-Dup01-20180116 1.2	1.63e3	43.5	YES
7	7	13C6-PFDA	1800140-18 FT-Dup01-20180116 1.2	3.36e3	32.4	YES
8	8	13C7-PFUdA	1800140-18 FT-Dup01-20180116 1.2	1.42e3	12.7	YES

Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-19 FT-Dup02-20180117 1.21	1.04e4	79.2	NO
2	2	13C5-PFHxA	1800140-19 FT-Dup02-20180117 1.21	1.38e4	89.3	NO
3	3	13C3-PFHxS	1800140-19 FT-Dup02-20180117 1.21	3.09e3	92.5	NO
4	4	13C8-PFOA	1800140-19 FT-Dup02-20180117 1.21	1.17e4	86.2	NO
5	5	13C9-PFNA	1800140-19 FT-Dup02-20180117 1.21	9.21e3	59.7	NO
6	6	13C4-PFOS	1800140-19 FT-Dup02-20180117 1.21	2.27e3	60.4	NO
7	7	13C6-PFDA	1800140-19 FT-Dup02-20180117 1.21	4.65e3	44.9	YES
8	8	13C7-PFUdA	1800140-19 FT-Dup02-20180117 1.21	2.82e3	25.2	YES

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Name: 180206M1_120, Date: 07-Feb-2018, Time: 09:59:50, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA	5.41e0	0.0	YES
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-9 PFC CS3 18A3012	1.70e4	130.0	NO
2	2	13C5-PFHxA	ST180206M1-9 PFC CS3 18A3012	2.10e4	136.1	NO
3	3	13C3-PFHxS	ST180206M1-9 PFC CS3 18A3012	4.43e3	132.4	NO
4	4	13C8-PFOA	ST180206M1-9 PFC CS3 18A3012	1.83e4	134.7	NO
5	5	13C9-PFNA	ST180206M1-9 PFC CS3 18A3012	2.18e4	141.4	NO
6	6	13C4-PFOS	ST180206M1-9 PFC CS3 18A3012	4.06e3	108.0	NO
7	7	13C6-PFDA	ST180206M1-9 PFC CS3 18A3012	1.34e4	129.6	NO
8	8	13C7-PFUdA	ST180206M1-9 PFC CS3 18A3012	1.66e4	148.2	NO

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Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-9.qld

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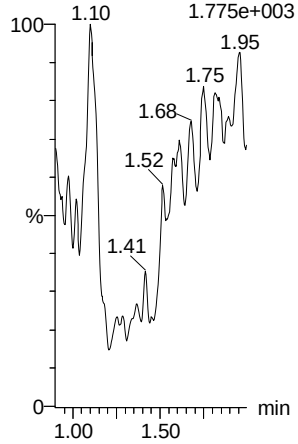
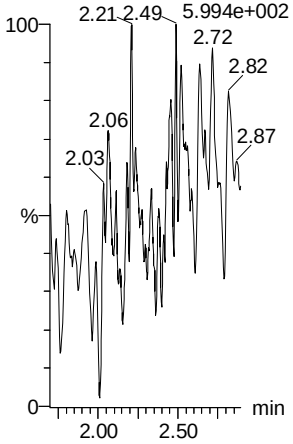
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

PFBA



PFPeA



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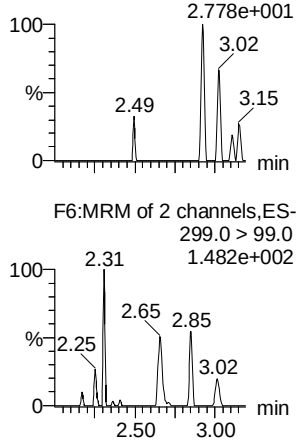

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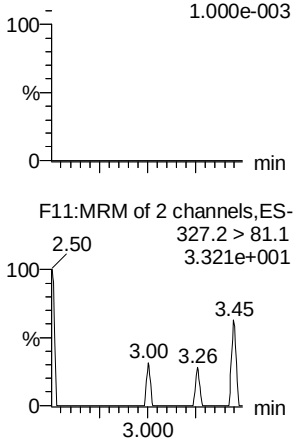

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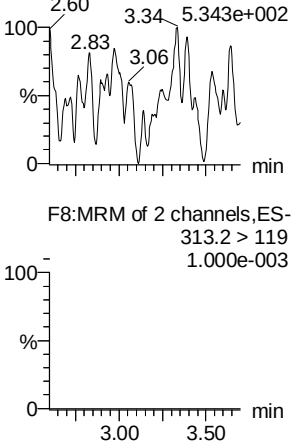

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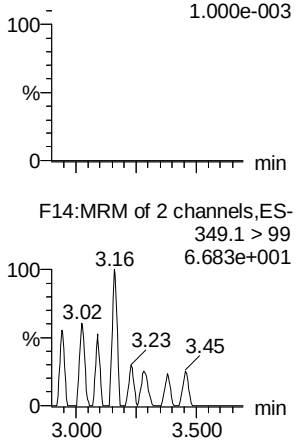

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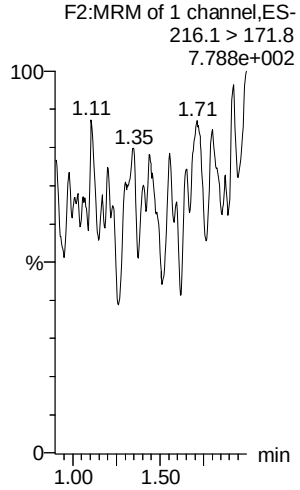

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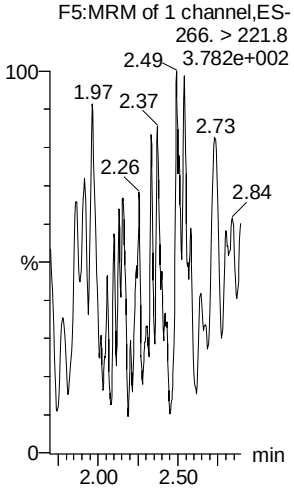

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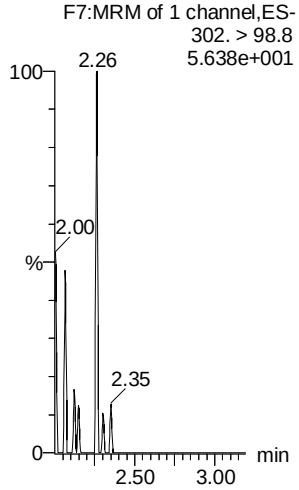

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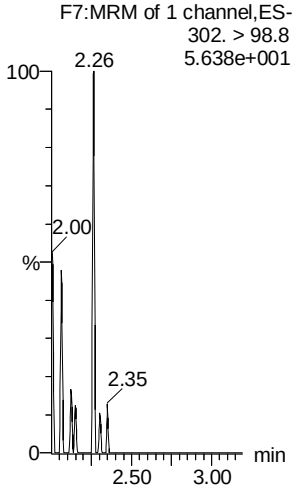

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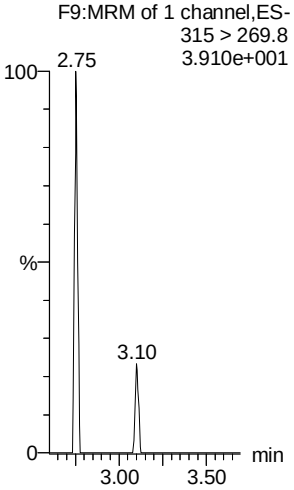

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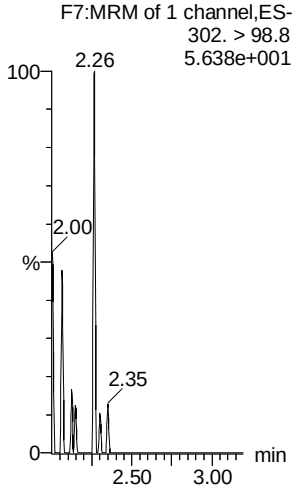

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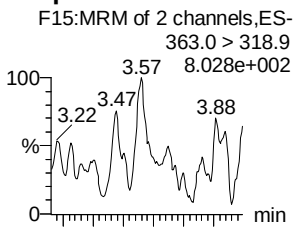
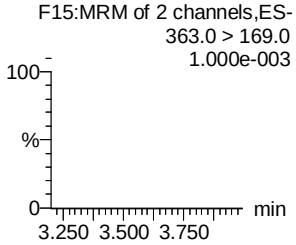
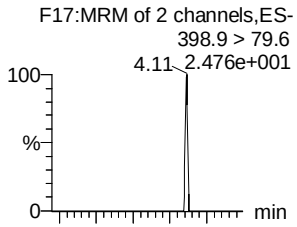
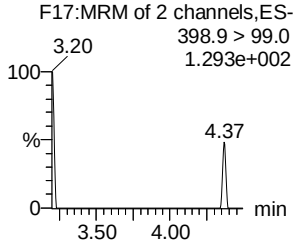
PFHpA





L-PFHxS





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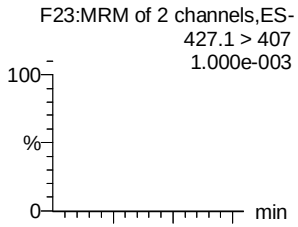
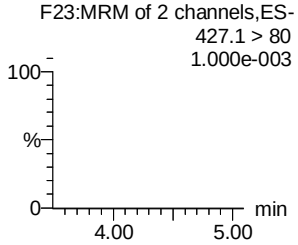
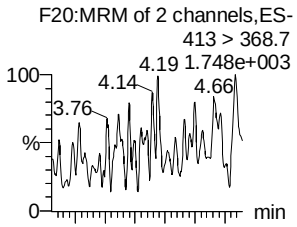
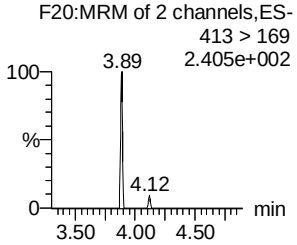




L-PFOA





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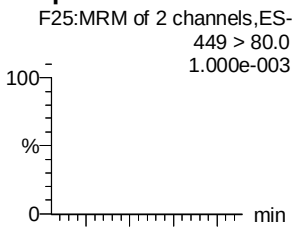

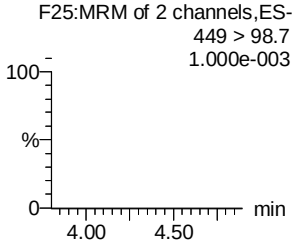

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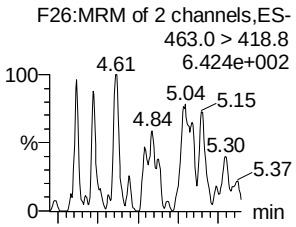
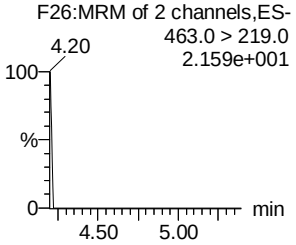
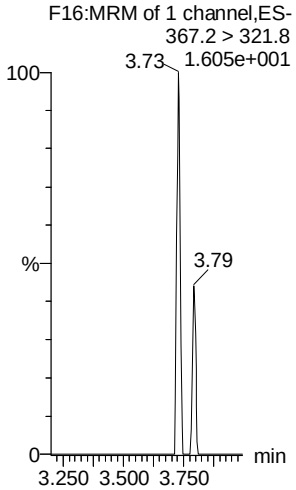
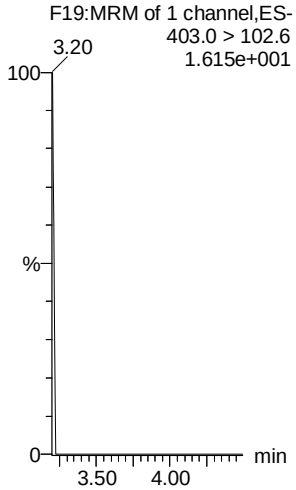




13C4-PFHpA



18O2-PFHxS



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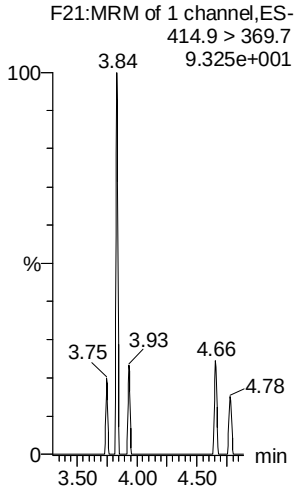

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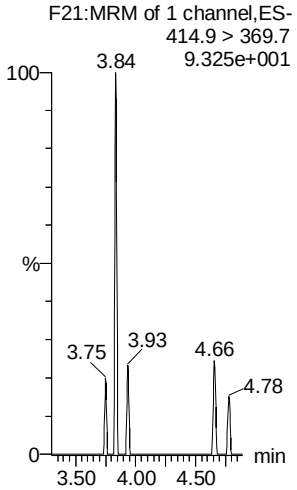
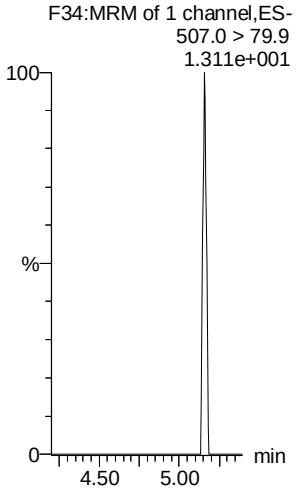


13C8-PFOS



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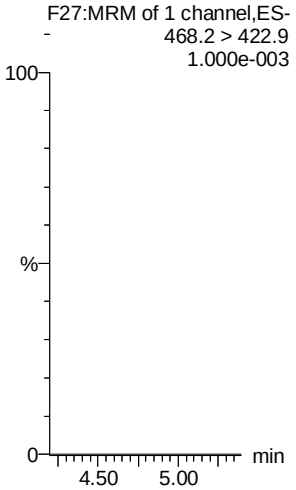

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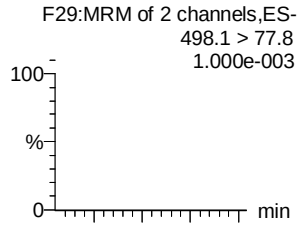
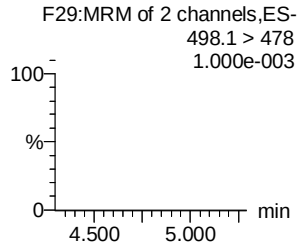
Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

PFOSA





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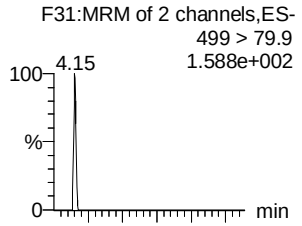
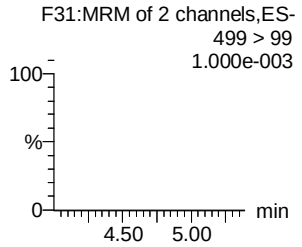
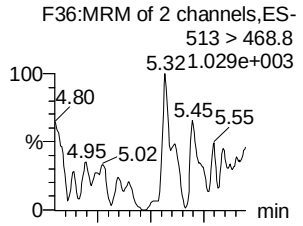
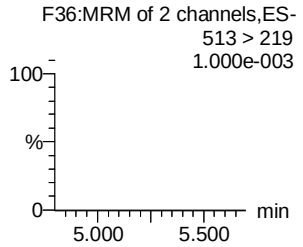


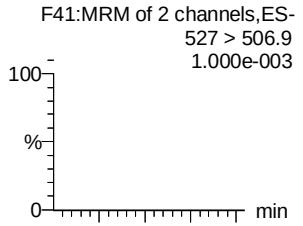


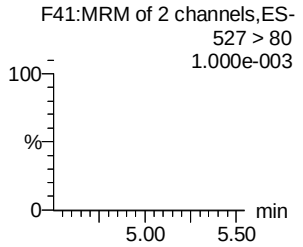
PFDA



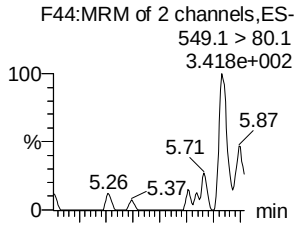


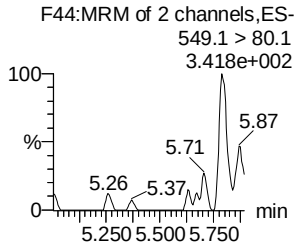
8:2 FTS



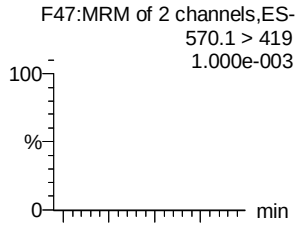


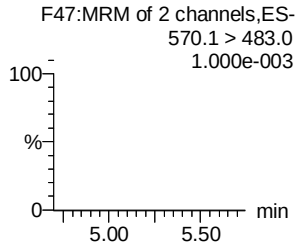
PFNS



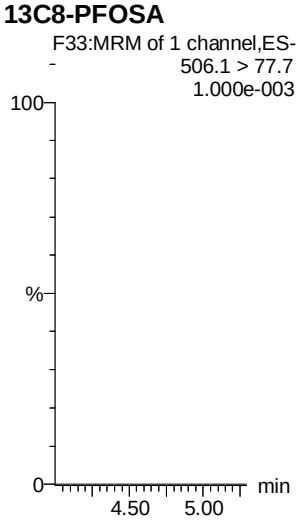


N-MeFOSAA

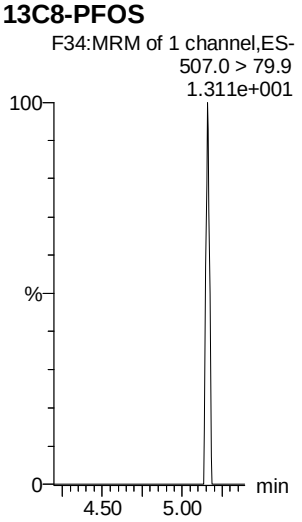




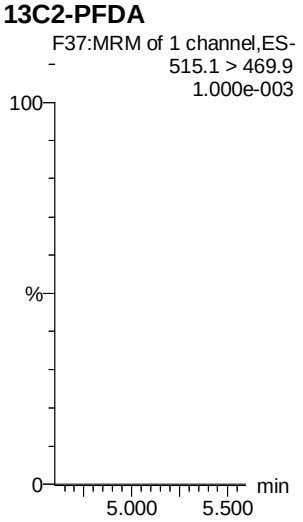
13C8-PFOSA



13C8-PFOS



13C2-PFDA



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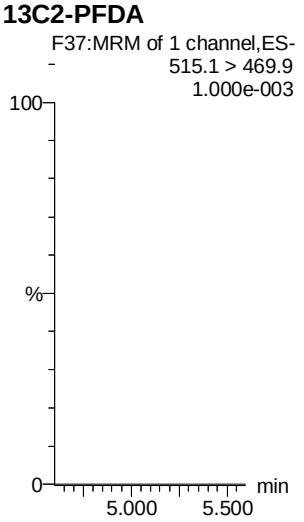
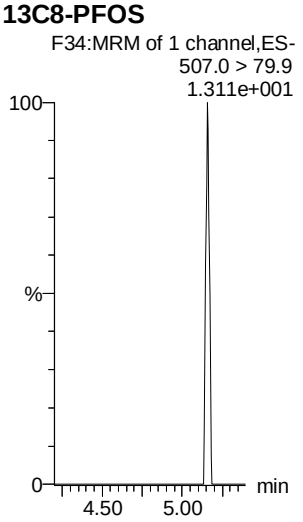
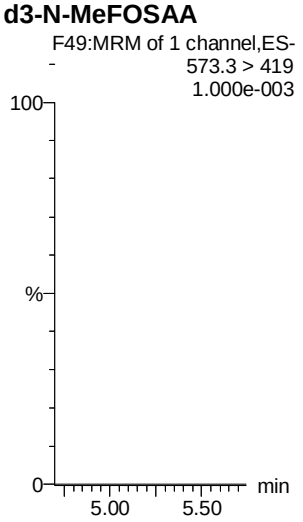


13C8-PFOS



d3-N-MeFOSAA



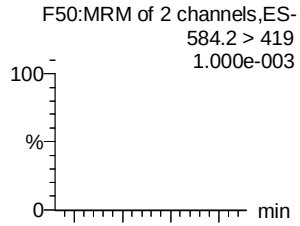
AC 2/7/2018

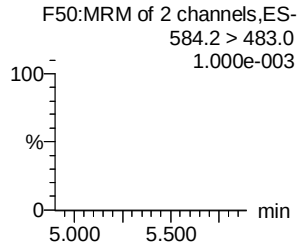
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-9.qld

Last Altered: Wednesday, February 07, 2018 12:41:38 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:42:03 Pacific Standard Time

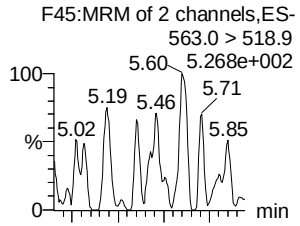
Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

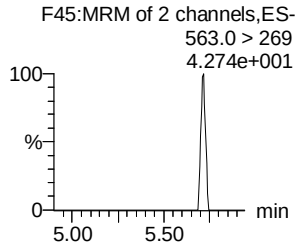
N-EtFOSAA



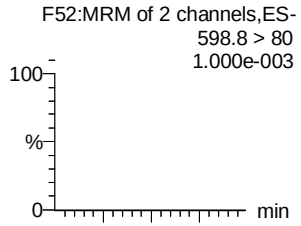


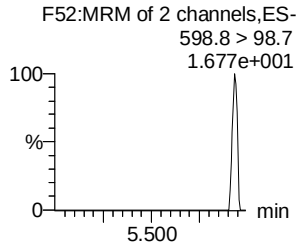
PFUdA



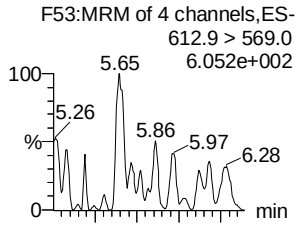


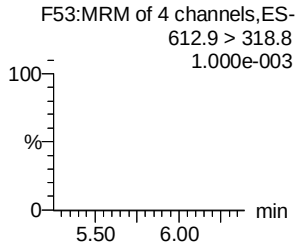
PFDS



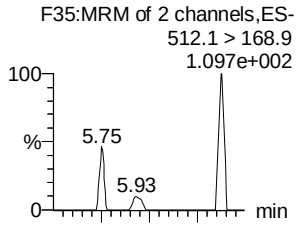


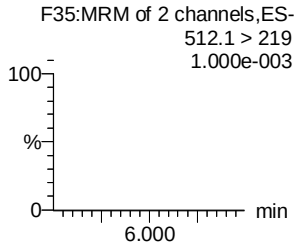
PFDoA



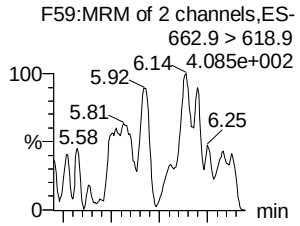


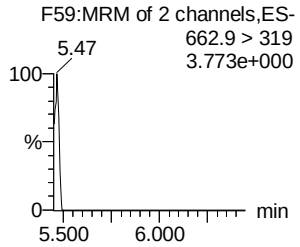
N-MeFOSA



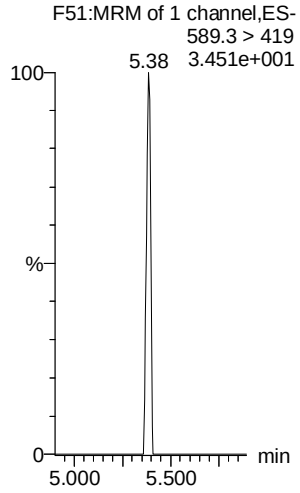


PFTrDA

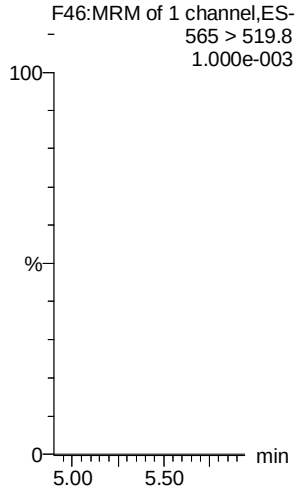




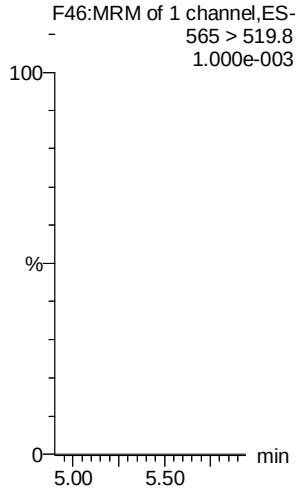
d5-N-EtFOSAA



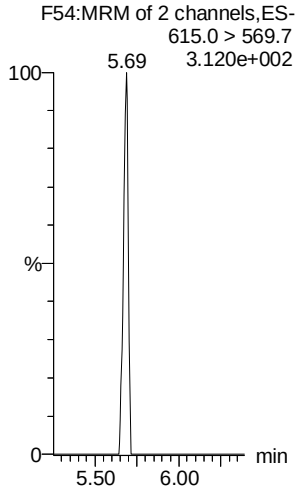
13C2-PFUdA



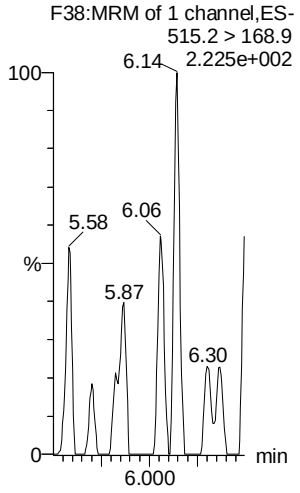
13C2-PFUdA



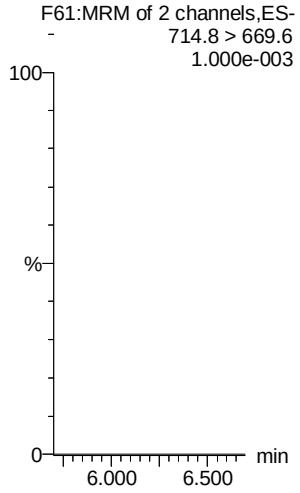
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA



AC 2/7/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-9.qld

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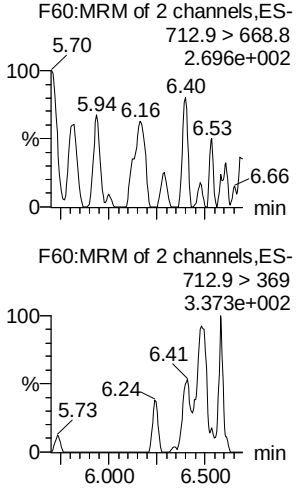
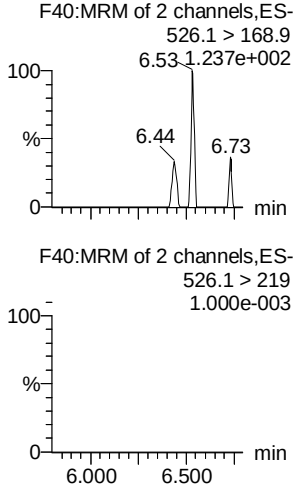
Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

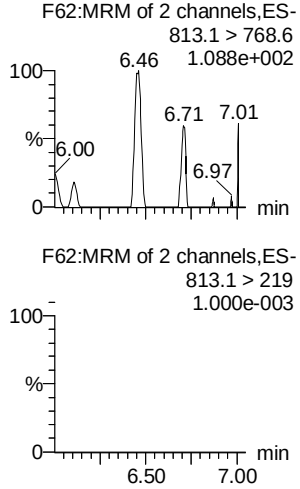
PFTeDA



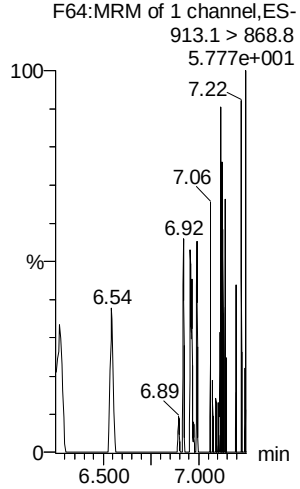
N-EtFOSA



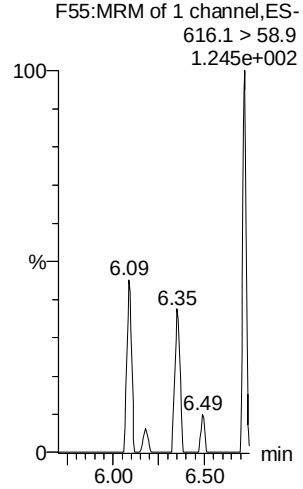
PFHxDA



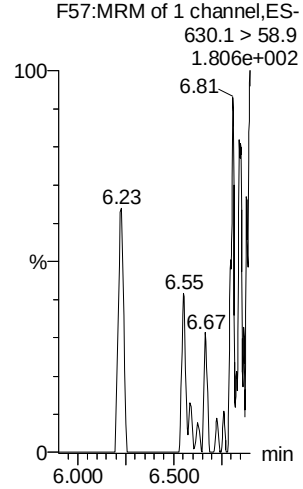
PFODA



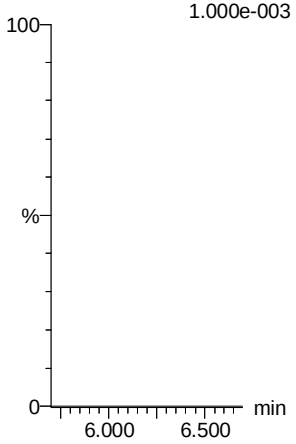
N-MeFOSE



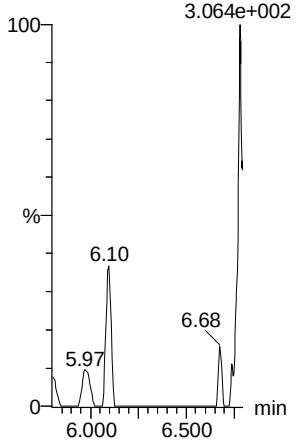
N-EtFOSE



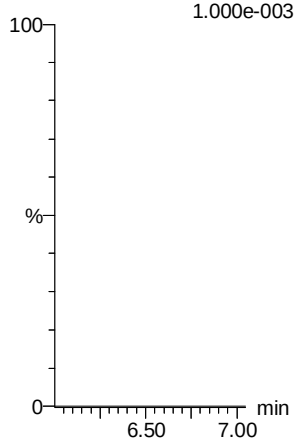
13C2-PFTeDA



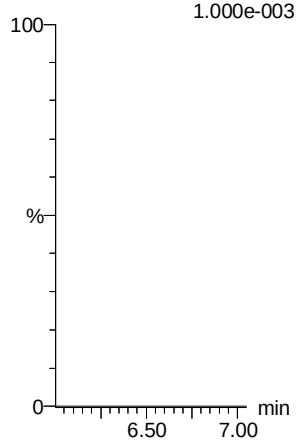
d5-N-ETFOSA



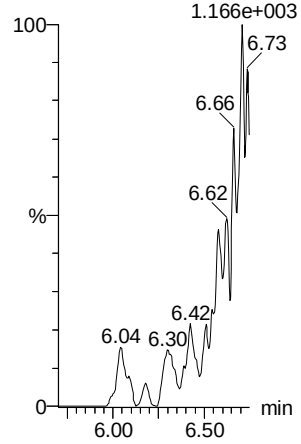
13C2-PFHxDA



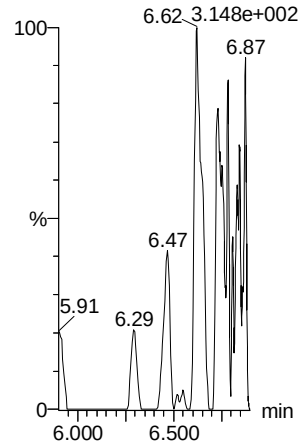
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



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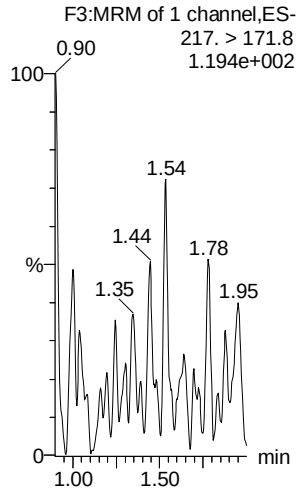
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-9.qld

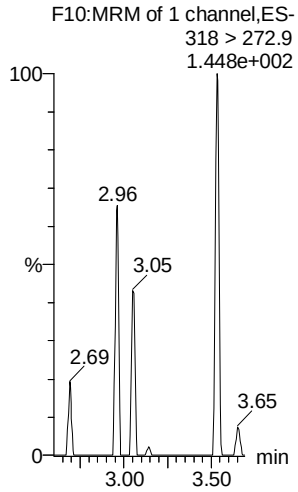
Last Altered: Wednesday, February 07, 2018 12:41:38 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:42:03 Pacific Standard Time

Name: 180206M1_9, Date: 06-Feb-2018, Time: 12:27:46, ID: IPA, Description: IPA

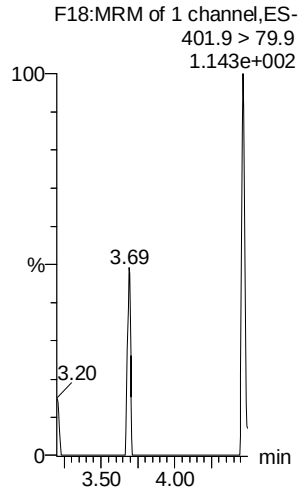
13C4-PFBA



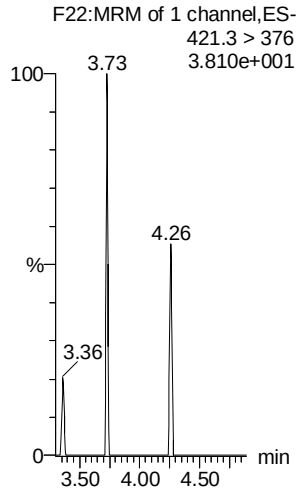
13C5-PFHxA



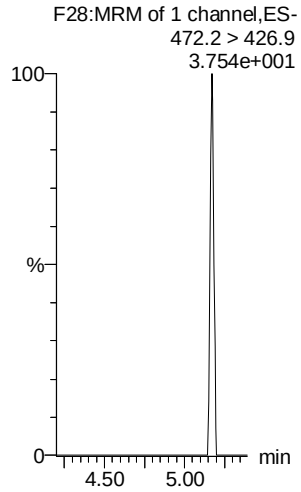
13C3-PFHxS



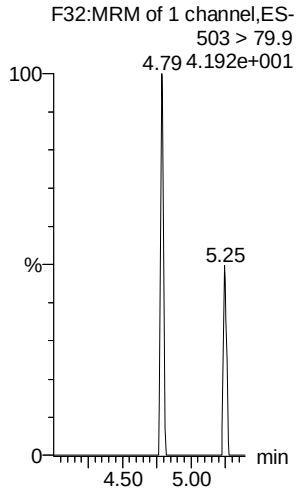
13C8-PFOA



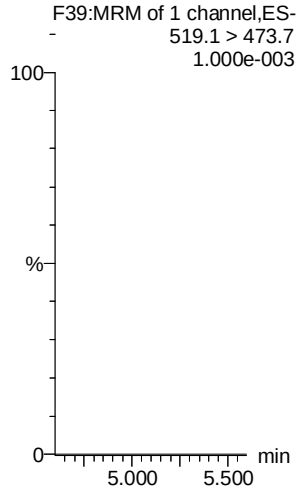
13C9-PFNA



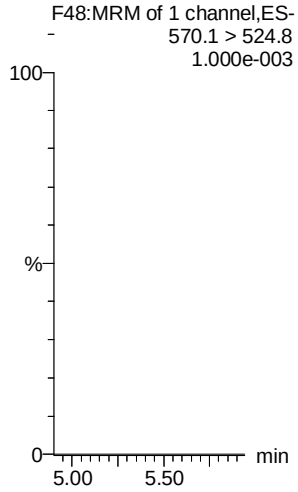
13C4-PFOS



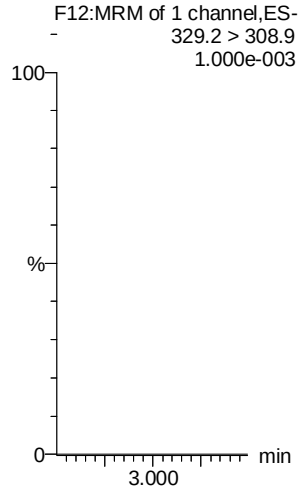
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



AC 2/7/2018

Quantify Sample Summary Report **MassLynx MassLynx V4.1 SCN945 SCN960**
Vista Analytical Laboratory

Ⓐ = 8:2 FTS < 70%.
Ⓑ = PFUdA, PFTrDA, PFTeDA > 130%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

AD 2/7/18
JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

70-130%.

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	
1	1	PFBA	213.0 > 168.8	1.21e3	1.32e4		1.0000	1.46	1.48	1.15	1.025	102.5	
2	2	PFPeA	263.1 > 218.9	1.31e3	1.65e4		1.0000	2.42	2.42	0.992	0.9316	93.2	
3	3	PFBS	299.0 > 79.7	2.87e2	1.93e3		1.0000	2.69	2.70	1.85	0.9906	99.1	
4	4	4:2 FTS	327.2>307.2	3.08e2	1.93e3		1.0000	3.10	3.09	1.99	1.207	120.7	
5	5	PFHxA	313.2 > 268.9	1.55e3	4.75e3		1.0000	3.19	3.19	1.63	1.056	105.6	
6	6	PFPeS	349.1>80.1	3.00e2	1.93e3		1.0000	3.39	3.38	1.94	0.9302	93.0	
7	7	PFHpA	363.0 > 318.9	1.43e3	1.24e4		1.0000	3.81	3.79	1.44	1.106	110.6	
8	8	L-PFHxS	398.9 > 79.6	2.05e2	1.32e3		1.0000	3.96	3.94	1.94	1.008	100.8	
9	10	6:2 FTS	427.1 > 407	2.91e2	1.64e4		1.0000	4.28	4.24	0.222	0.8736	87.4	
10	11	L-PFOA	413 > 368.7	1.22e3	1.64e4		1.0000	4.33	4.30	0.931	0.8452	84.5	
11	13	PFHpS	449 > 80.0	3.15e2	3.85e3		1.0000	4.44	4.40	1.02	0.9348	93.5	
12	14	PFNA	463.0 > 418.8	1.47e3	1.54e4		1.0000	4.76	4.72	1.19	0.9295	93.0	
13	15	PFOSA	498.1 > 77.8	3.41e2	3.24e3		1.0000	4.83	4.79	1.32	1.251	125.1	
14	16	L-PFOS	499 > 79.9	2.96e2	3.85e3		1.0000	4.84	4.80	0.961	0.9220	92.2	
15	18	PFDA	513 > 468.8	1.67e3	1.44e4		1.0000	5.14	5.08	1.46	1.294	129.4	
16	19	8:2 FTS	527 > 506.9	2.17e2	1.64e4		1.0000	5.12	5.05	0.165	0.6869	68.7	Ⓐ
17	20	PFNS	549.1>80.1	2.89e2	3.85e3		1.0000	5.20	5.14	0.937	1.099	109.9	
18	21	N-MeFOSAA	570.1 > 419	8.41e2	6.63e3		1.0000	5.29	5.23	1.59	1.231	123.1	
19	22	N-EtFOSAA	584.2 > 419	5.62e2	7.69e3		1.0000	5.45	5.38	0.913	0.9156	91.6	
20	23	PFUdA	563.0 > 518.9	1.74e3	1.42e4		1.0000	5.46	5.40	1.53	1.354	135.4	Ⓑ
21	24	PFDS	598.8 > 80	3.62e2	1.10e4		1.0000	5.51	5.44	0.412	0.9278	92.8	
22	25	PFDoA	612.9 > 569.0	1.69e3	1.10e4		1.0000	5.74	5.67	1.92	0.9069	90.7	
23	26	N-MeFOSA	512.1 > 168.9	6.93e2	1.87e4		1.0000	5.84	5.82	5.55	5.794	115.9	
24	27	PFTrDA	662.9 > 618.9	1.72e3	3.57e3		1.0000	5.98	5.91	6.03	1.503	150.3	Ⓑ
25	28	PFTeDA	712.9 > 668.8	8.61e2	3.57e3		1.0000	6.20	6.12	3.02	1.370	137.0	Ⓑ
26	29	N-EtFOSA	526.1 > 168.9	9.08e2	2.84e4		1.0000	6.22	6.18	4.80	5.223	104.5	
27	30	PFHxDA	813.1 > 768.6	4.61e2	2.84e3		1.0000	6.51	6.45	0.813	0.9942	99.4	
28	31	PFODA	913.1 > 868.8	6.30e2	2.84e3		1.0000	6.74	6.67	1.11	1.190	119.0	
29	32	N-MeFOSE	616.1 > 58.9	7.06e2	2.51e4		1.0000	6.31	6.27	4.22	4.202	84.0	
30	33	N-EtFOSE	630.1 > 58.9	1.06e3	2.65e4		1.0000	6.45	6.42	5.97	5.150	103.0	
31	34	MPFBA	216.1 > 171.8	1.32e4	1.47e4	0.876	1.0000	1.46	1.48	11.2	12.83	102.7	

50-150%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

50-150%.

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.65e4	1.82e4	0.868	1.0000	2.42	2.42	11.3	13.05	104.4
33	36	13C3-PFBS	302. > 98.8	1.93e3	1.82e4	0.109	1.0000	2.69	2.69	1.33	12.14	97.1
34	37	13C2-PFHxA	315 > 269.8	4.75e3	1.82e4	0.694	1.0000	3.19	3.19	3.26	4.691	93.8
35	38	13C4-PFHpA	367.2 > 321.8	1.24e4	1.82e4	0.694	1.0000	3.81	3.79	8.48	12.21	97.7
36	39	18O2-PFHxS	403.0 > 102.6	1.32e3	3.78e3	0.350	1.0000	3.96	3.94	4.37	12.50	100.0
37	40	13C2-6:2 FTS	429.1 > 408.9	3.35e3	1.35e4	0.242	1.0000	4.28	4.24	3.10	12.79	102.3
38	41	13C2-PFOA	414.9 > 369.7	1.64e4	1.35e4	1.069	1.0000	4.33	4.30	15.2	14.20	113.6
39	42	13C5-PFNA	468.2 > 422.9	1.54e4	1.63e4	0.929	1.0000	4.76	4.72	11.8	12.69	101.5
40	43	13C8-PFOSA	506.1 > 77.7	3.24e3	1.50e4	0.226	1.0000	4.83	4.79	2.70	11.96	95.7
41	44	13C8-PFOS	507.0 > 79.9	3.85e3	4.18e3	1.041	1.0000	4.84	4.80	11.5	11.06	88.5
42	45	13C2-PFDA	515.1 > 469.9	1.44e4	1.36e4	1.217	1.0000	5.14	5.08	13.2	10.83	86.6
43	46	13C2-8:2 FTS	529.1 > 508.7	2.17e3	1.82e4	0.131	1.0000	5.12	5.05	1.49	11.33	90.6
44	47	d3-N-MeFOSAA	573.3 > 419	6.63e3	1.50e4	0.432	1.0000	5.29	5.22	5.53	12.79	102.3
45	48	d5-N-EtFOSAA	589.3 > 419	7.69e3	1.50e4	0.476	1.0000	5.45	5.37	6.42	13.49	107.9
46	49	13C2-PFUdA	565 > 519.8	1.42e4	1.50e4	0.969	1.0000	5.46	5.40	11.9	12.24	97.9
47	50	13C2-PFDoA	615.0 > 569.7	1.10e4	1.50e4	0.605	1.0000	5.74	5.67	9.17	15.15	121.2
48	51	d3-N-MeFOSA	515.2 > 168.9	1.87e4	1.50e4	0.116	1.0000	5.84	5.84	15.6	135.3	90.2
49	52	13C2-PFTeDA	714.8 > 669.6	3.57e3	1.50e4	0.331	1.0000	6.20	6.12	2.98	8.996	72.0
50	53	d5-N-ETFOSA	531.1 > 168.9	2.84e4	1.50e4	0.171	1.0000	6.22	6.19	23.7	138.2	92.1
51	54	13C2-PFHxDA	815 > 769.7	2.84e3	1.50e4	0.577	1.0000	6.51	6.44	2.37	4.102	82.0
52	55	d7-N-MeFOSE	623.1 > 58.9	2.51e4	1.50e4	0.152	1.0000	6.31	6.26	21.0	138.1	92.1
53	56	d9-N-EtFOSE	639.2 > 58.8	2.65e4	1.50e4	0.142	1.0000	6.45	6.42	22.1	155.6	103.8
54	57	13C4-PFBA	217. > 171.8	1.47e4	1.47e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.82e4	1.82e4	1.000	1.0000	3.19	3.18	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.78e3	3.78e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.35e4	1.35e4	1.000	1.0000	4.33	4.29	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.63e4	1.63e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.18e3	4.18e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.36e4	1.36e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.50e4	1.50e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	3.86e3	1.82e4	0.287	1.0000	3.10	3.09	2.64	9.217	73.7

50-150%.

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180206M1_1	IPA	06-Feb-18	10:56:05
2	180206M1_2	CS3 TESTER	06-Feb-18	11:07:35
3	180206M1_3	IPA	06-Feb-18	11:19:04
4	180206M1_4	ST180206M1-1 PFC CS0 18A3009	06-Feb-18	11:30:34
5	180206M1_5	B8A0172-BS1 OPR 0.125	06-Feb-18	11:41:58
6	180206M1_6	B8A0172-BLK1 Method Blank 0.125	06-Feb-18	11:53:25
7	180206M1_7	1800180-07 YEAGR-EB-02-012018 0.11998	06-Feb-18	12:04:52
8	180206M1_8	B8A0166-BS1 OPR 0.25	06-Feb-18	12:16:19
9	180206M1_9	IPA	06-Feb-18	12:27:46
10	180206M1_10	ST180206M1-2 PFC CS3 18A3012	06-Feb-18	12:39:16
11	180206M1_11	IPA	06-Feb-18	12:50:42
12	180206M1_12	B8A0155-BS1 OPR 0.125	06-Feb-18	13:20:45
13	180206M1_13	B8A0155-BLK1 Method Blank 0.125	06-Feb-18	13:32:14
14	180206M1_14	B8A0155-MS1 Matrix Spike 0.1176	06-Feb-18	13:43:41
15	180206M1_15	B8A0155-MSD1 Matrix Spike Dup 0.11695	06-Feb-18	13:55:10
16	180206M1_16	1800100-09 MINNE-GW-TW12-010918 0.11992	06-Feb-18	14:06:41
17	180206M1_17	1800100-10 MINNE-GW-TW14-010918 0.11685	06-Feb-18	14:18:07
18	180206M1_18	1800100-11 MINNE-GW-TW15-010918 0.11738	06-Feb-18	14:29:37
19	180206M1_19	no data		
20	180206M1_20	no data		
21	180206M1_21	1800100-17 MINNE-GW-TW11-011018 0.11832	06-Feb-18	14:41:06
22	180206M1_22	1800100-18 MINNE-GW-TW17-011018 0.11988	06-Feb-18	14:52:37
23	180206M1_23	1800100-19 MINNE-GW-TW18-011018 0.11609	06-Feb-18	15:04:03
24	180206M1_24	B8A0162-MS1 Matrix Spike 0.12293	06-Feb-18	15:15:30
25	180206M1_25	B8A0162-MSD1 Matrix Spike Dup 0.12128	06-Feb-18	15:26:57
26	180206M1_26	B8A0162-MS2 Matrix Spike 0.11755	06-Feb-18	15:38:23
27	180206M1_27	B8A0162-MSD2 Matrix Spike Dup 0.12186	06-Feb-18	15:49:51
28	180206M1_28	1800177-06 YEAGR-06-SW01-011718 0.12192	06-Feb-18	16:01:17
29	180206M1_29	no data		
30	180206M1_30	1800195-03 PITTS-GW-DUP01-011618 0.12017	06-Feb-18	16:12:44
31	180206M1_31	IPA	06-Feb-18	16:24:14

Dataset: Untitled

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Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
32	180206M1_32	ST180206M1-3 PFC CS3 18A3012	06-Feb-18	16:35:41
33	180206M1_33	IPA	06-Feb-18	16:47:08
34	180206M1_34	1800195-04 PITTS-GW-TW01B-011618 0.11986	06-Feb-18	16:58:35
35	180206M1_35	1800195-05 PITTS-GW-TW03-011718 0.12099	06-Feb-18	17:10:04
36	180206M1_36	1800195-06 PITTS-GW-TW07-011718 0.12041	06-Feb-18	17:21:34
37	180206M1_37	no data		
38	180206M1_38	1800195-07 PITTS-GW-TW13-011618 0.12	06-Feb-18	17:33:03
39	180206M1_39	1800195-08 PITTS-GW-TW15-011618 0.12086	06-Feb-18	17:44:33
40	180206M1_40	1800195-09 PITTS-GW-TW16-011618 0.11819	06-Feb-18	17:56:01
41	180206M1_41	1800195-10 PITTS-GW-TW17-011618 0.11997	06-Feb-18	18:07:31
42	180206M1_42	1800195-11 PITTS-GW-TW18-011618 0.12121	06-Feb-18	18:19:02
43	180206M1_43	1800177-06@5X YEAGR-06-SW01-011718 0.1...	06-Feb-18	18:30:28
44	180206M1_44	B8A0162-MS1@5X Matrix Spike 0.12293	06-Feb-18	18:41:55
45	180206M1_45	B8A0162-MSD1@5X Matrix Spike Dup 0.12128	06-Feb-18	18:53:22
46	180206M1_46	1800195-06@5X PITTS-GW-TW07-011718 0.1...	06-Feb-18	19:04:49
47	180206M1_47	B8A0162-MS2@5X Matrix Spike 0.11755	06-Feb-18	19:16:15
48	180206M1_48	1702193-01 921691257 3	06-Feb-18	20:13:42
49	180206M1_49	B8A0172-MS1@5X Matrix Spike 0.119	06-Feb-18	20:25:06
50	180206M1_50	B8A0172-MSD1@5X Matrix Spike Dup 0.11886	06-Feb-18	20:36:33
51	180206M1_51	1800180-10@5X YEAGR-GW-DUP01-011918 0...	06-Feb-18	20:48:03
52	180206M1_52	1800180-11@5X YEAGR-GW-ML-FL014-MW0...	06-Feb-18	20:59:31
53	180206M1_53	IPA	06-Feb-18	21:11:00
54	180206M1_54	1800180-17 YEAGR-09-SW01-012018 0.1174	06-Feb-18	21:22:30
55	180206M1_55	B8B0018-BS1 OPR 3	06-Feb-18	21:33:59
56	180206M1_56	B8B0018-BLK1 Method Blank 3	06-Feb-18	21:45:30
57	180206M1_57	1800219-01 Kenneth Kolker 3	06-Feb-18	21:56:59
58	180206M1_58	B8B0017-BS1 OPR 0.25	06-Feb-18	22:08:26
59	180206M1_59	B8B0017-BSD1 LCSD 0.25	06-Feb-18	22:19:56
60	180206M1_60	B8B0017-BLK1 Method Blank 0.25	06-Feb-18	22:31:25
61	180206M1_61	1800186-01RE1 REEPDW132 0.11965	06-Feb-18	22:42:55
62	180206M1_62	1800186-02RE1 REEPDW133 0.11325	06-Feb-18	22:54:22
63	180206M1_63	1800186-03RE1 REEPDW134 0.12036	06-Feb-18	23:05:52
64	180206M1_64	1800218-01 BZ79699 0.26192	06-Feb-18	23:17:19
65	180206M1_65	1800218-02 BZ79700 0.25325	06-Feb-18	23:28:46

(A) RI. AC 2/7/18

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
66	180206M1_66	IPA	06-Feb-18	23:40:13
67	180206M1_67	ST180206M1-5 PFC CS0 18A3009	06-Feb-18	23:51:40
68	180206M1_68	IPA	07-Feb-18	00:03:06
69	180206M1_69	1800225-01 WT1801251435MK 0.26369	07-Feb-18	00:14:36
70	180206M1_70	1800225-02 FB1801251440MK 0.25785	07-Feb-18	00:26:05
71	180206M1_71	1800225-03 WT1801251450MK 0.26447	07-Feb-18	00:37:34
72	180206M1_72	1800225-04 WSOFT1801251520MK 0.26174	07-Feb-18	00:49:03
73	180206M1_73	1800225-05 WR1801251535MK 0.26502	07-Feb-18	01:00:33
74	180206M1_74	1800235-01 SW1801230935JLB 0.25866	07-Feb-18	01:12:00
75	180206M1_75	1800235-03 SW1801231035JLB 0.25488	07-Feb-18	01:23:29
76	180206M1_76	1800245-01 GW1923180125RAP 0.26309	07-Feb-18	01:34:56
77	180206M1_77	1800245-02 GW2933180125RAP 0.24912	07-Feb-18	01:46:23
78	180206M1_78	1800245-03 GW3943180125RAP 0.24954	07-Feb-18	01:57:50
79	180206M1_79	IPA	07-Feb-18	02:09:20
80	180206M1_80	ST180206M1-6 PFC CS3 18A3012	07-Feb-18	02:20:49
81	180206M1_81	IPA	07-Feb-18	02:32:19
82	180206M1_82	B8A0167-BS1 OPR 0.125	07-Feb-18	02:43:48
83	180206M1_83	B8A0167-BSD1 LCSD 0.125	07-Feb-18	02:55:18
84	180206M1_84	B8A0167-BLK1 Method Blank 0.125	07-Feb-18	03:06:44
85	180206M1_85	1800156-09 MINNE-06-SW01-011718 0.12113	07-Feb-18	03:18:14
86	180206M1_86	1800156-10 MINNE-GW-DUP02-011218 0.12287	07-Feb-18	03:29:43
87	180206M1_87	1800156-11 MINNE-GW-TW01A-011218 0.12321	07-Feb-18	03:41:10
88	180206M1_88	1800159-12 MINNE-GW-TW10-011718 0.1059	07-Feb-18	03:52:37
89	180206M1_89	1800178-12 YEAGR-SW-DUP01-011718 0.12161	07-Feb-18	04:04:04
90	180206M1_90	1800179-12 YEAGR-GW-BW02-011918 0.11851	07-Feb-18	04:15:30
91	180206M1_91	IPA	07-Feb-18	04:26:57
92	180206M1_92	ST180206M1-7 PFC CS3 18A3012	07-Feb-18	04:38:27
93	180206M1_93	IPA	07-Feb-18	04:49:56
94	180206M1_94	B8A0197-BS1 OPR 1	07-Feb-18	05:01:25
95	180206M1_95	B8A0197-BLK1 Method Blank 1	07-Feb-18	05:12:54
96	180206M1_96	B8A0197-MS1 Matrix Spike 1.27	07-Feb-18	05:24:25
97	180206M1_97	B8A0197-MSD1 Matrix Spike Dup 1.21	07-Feb-18	05:35:54
98	180206M1_98	1800140-01 FT-SS501-0001 1.23	07-Feb-18	05:47:24
99	180206M1_99	1800140-02 FT-SS502-0001 1.17	07-Feb-18	05:58:52

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

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101	180206M1_101	1800140-04 FT-SB504-2022 1.26	07-Feb-18	06:21:51
102	180206M1_102	1800140-05 FT-SB505-1618 1.21	07-Feb-18	06:33:20
103	180206M1_103	1800140-06 FT-SB506-2022 1.26	07-Feb-18	06:44:47
104	180206M1_104	1800140-07 FT-SB507-1819 1.27	07-Feb-18	06:56:17
105	180206M1_105	1800140-08 FT-SB508-1617 1.23	07-Feb-18	07:07:44
106	180206M1_106	1800140-09 FT-SB509-1718 1.33	07-Feb-18	07:19:10
107	180206M1_107	1800140-10 FT-SB510-0910 1.16	07-Feb-18	07:30:38
108	180206M1_108	IPA	07-Feb-18	07:42:05
109	180206M1_109	ST180206M1-8 PFC CS3 18A3012	07-Feb-18	07:53:31
110	180206M1_110	IPA	07-Feb-18	08:04:58
111	180206M1_111	1800140-11 FT-SB510-1415 1.22	07-Feb-18	08:16:25
112	180206M1_112	1800140-12 FT-SB511-1617 1.24	07-Feb-18	08:27:54
113	180206M1_113	1800140-13 FT-SS512-0001 1.2	07-Feb-18	08:39:24
114	180206M1_114	1800140-14 FT-SB512-0708 1.22	07-Feb-18	08:50:54
115	180206M1_115	1800140-15 FT-SB512-2223 1.2	07-Feb-18	09:02:22
116	180206M1_116	1800140-16 FT-SS513-0001 1.19	07-Feb-18	09:13:52
117	180206M1_117	1800140-17 FT-SB513-1819 1.22	07-Feb-18	09:25:21
118	180206M1_118	1800140-18 FT-Dup01-20180116 1.2	07-Feb-18	09:36:51
119	180206M1_119	1800140-19 FT-Dup02-20180117 1.21	07-Feb-18	09:48:20
120	180206M1_120	IPA	07-Feb-18	09:59:50
121	180206M1_121	ST180206M1-9 PFC CS3 18A3012	07-Feb-18	10:11:19
122	180206M1_122	IPA	07-Feb-18	10:22:48

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

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Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

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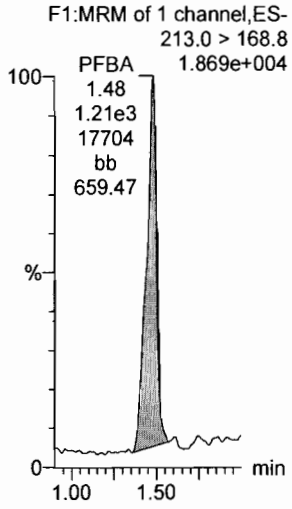

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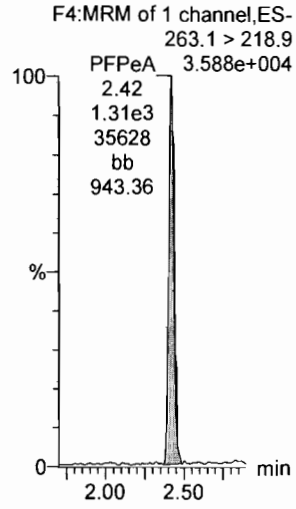

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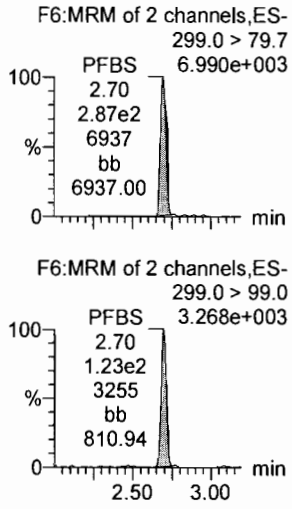

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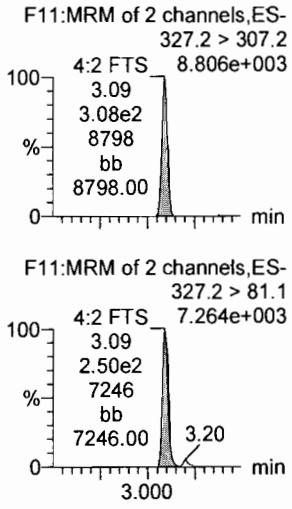

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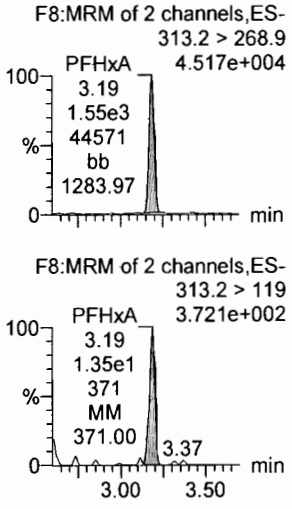

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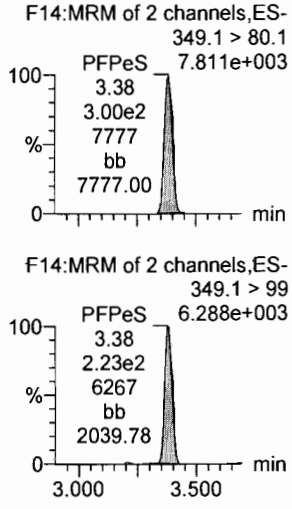

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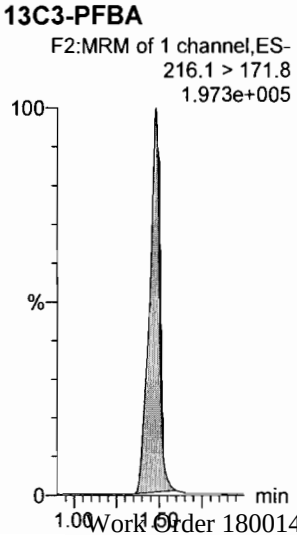

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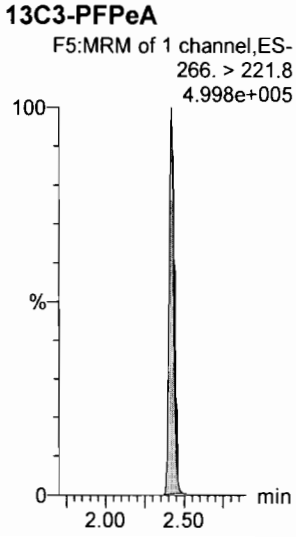

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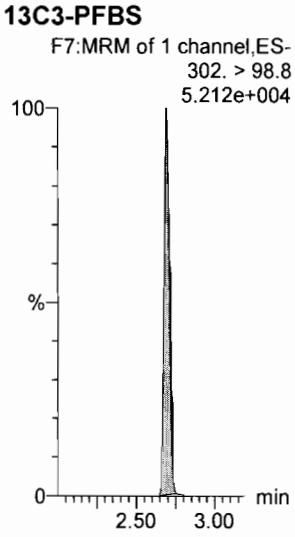

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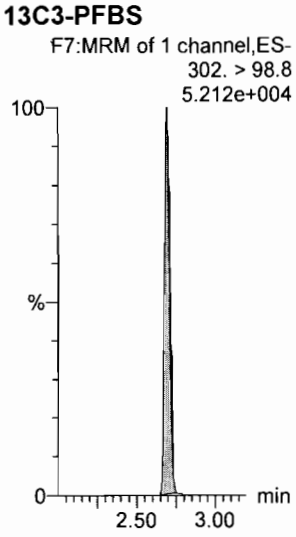

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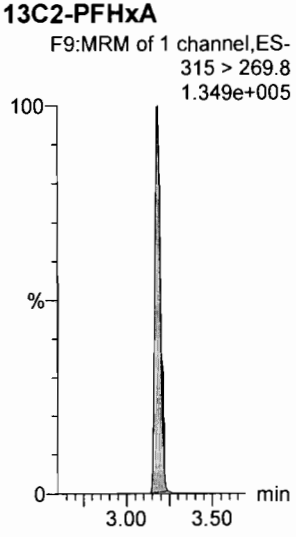

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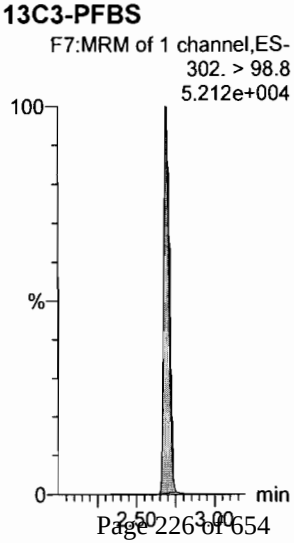

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Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

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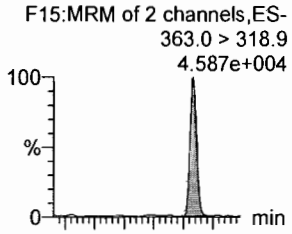

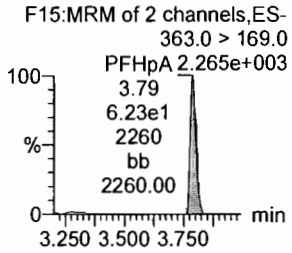

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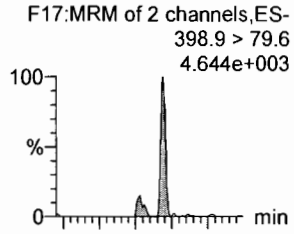

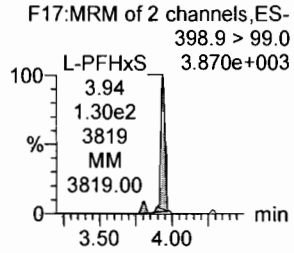

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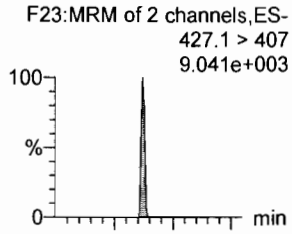

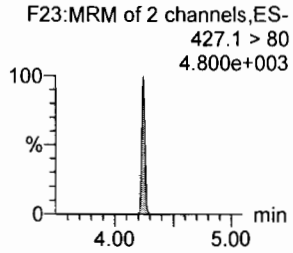

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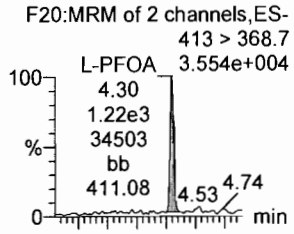

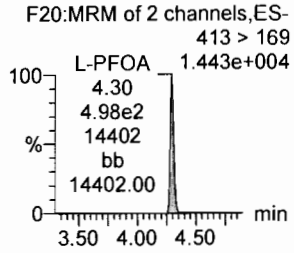

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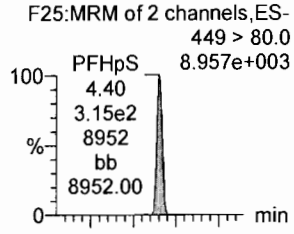

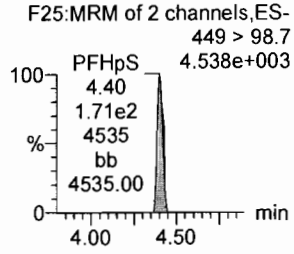

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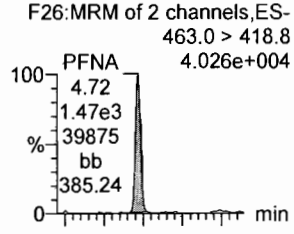

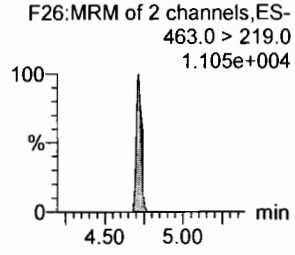

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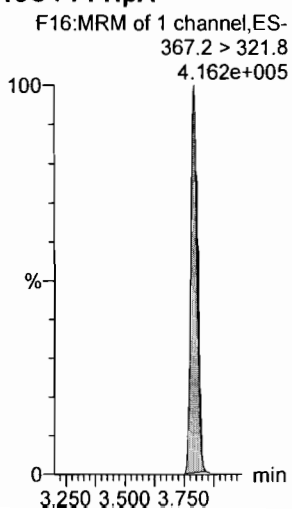

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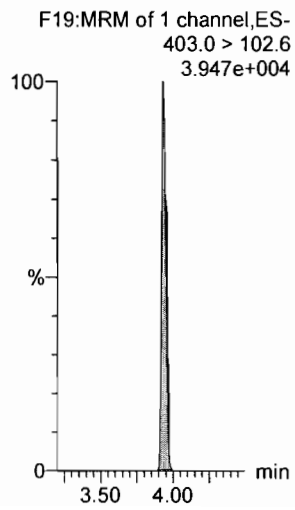

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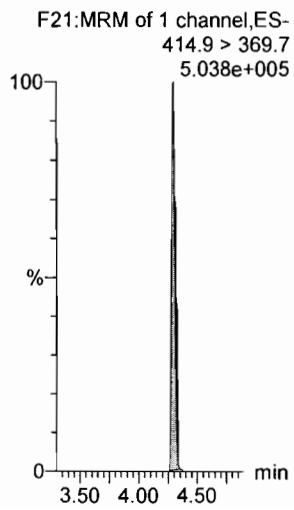

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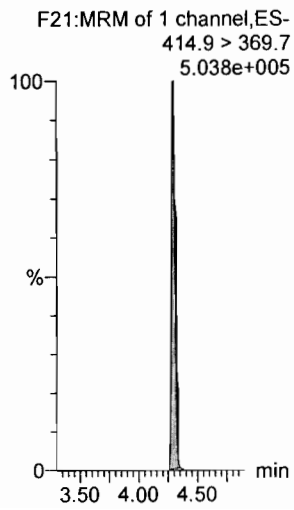

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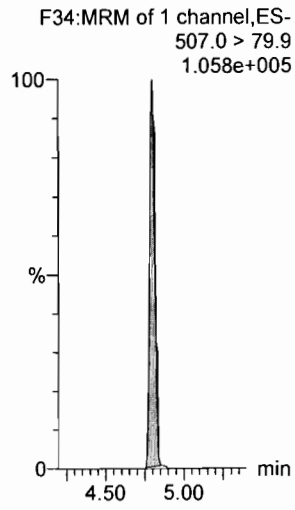

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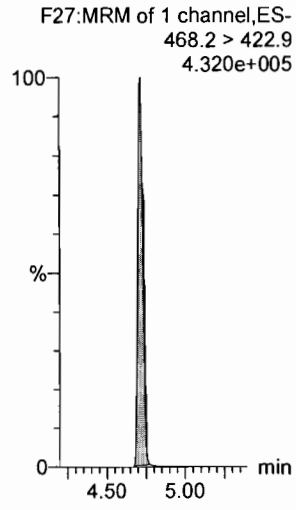

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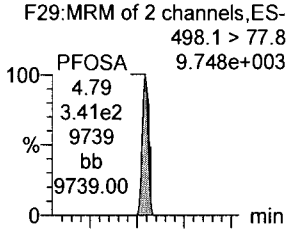

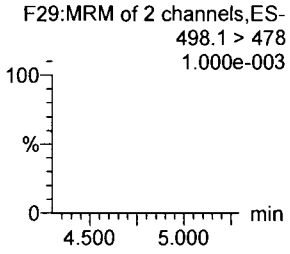

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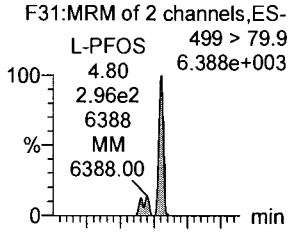

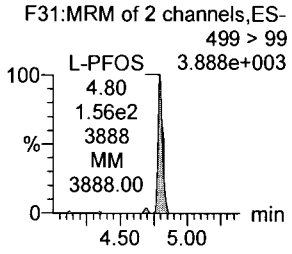

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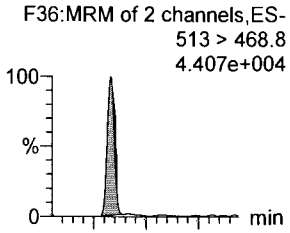

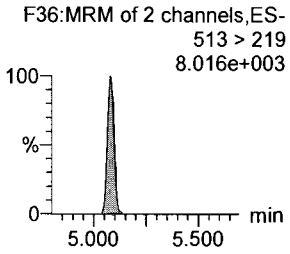

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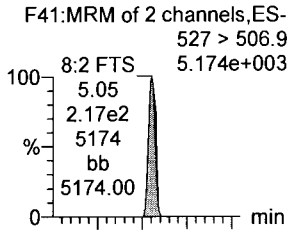

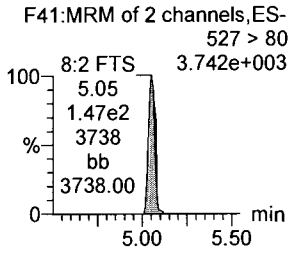

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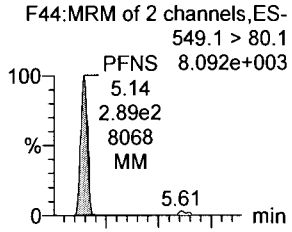

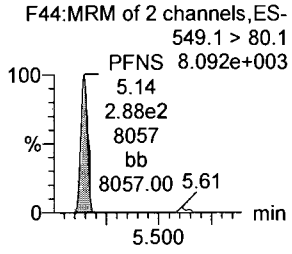

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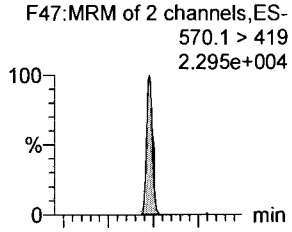

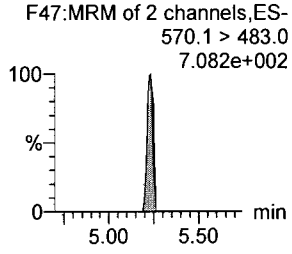

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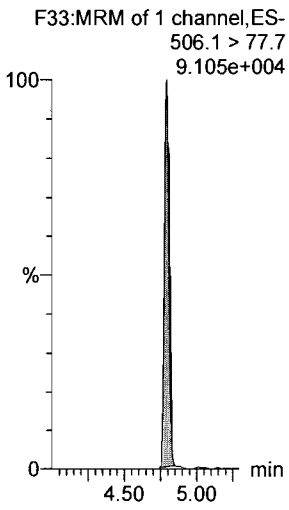

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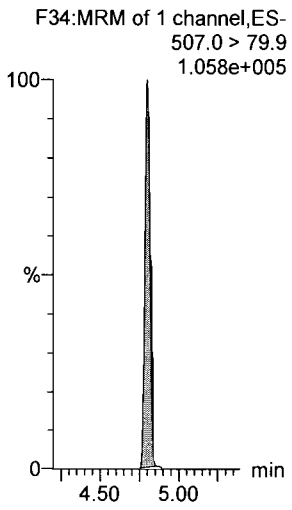

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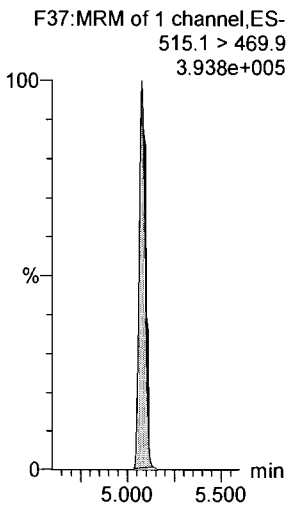

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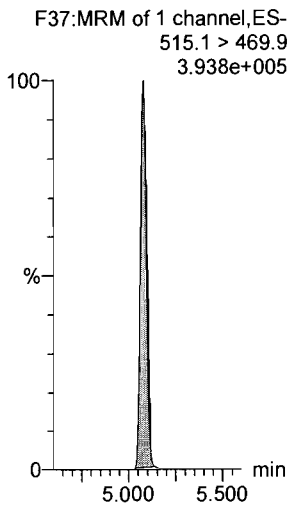

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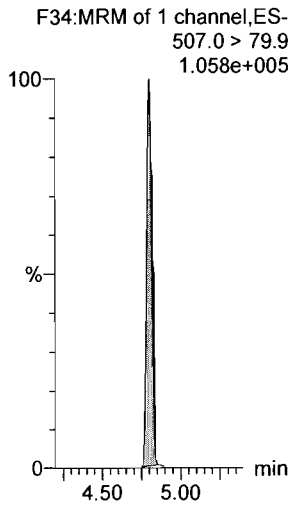
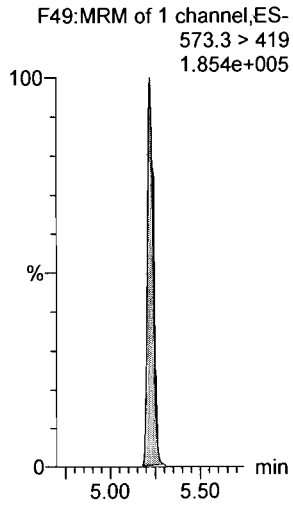


d3-N-MeFOSAA

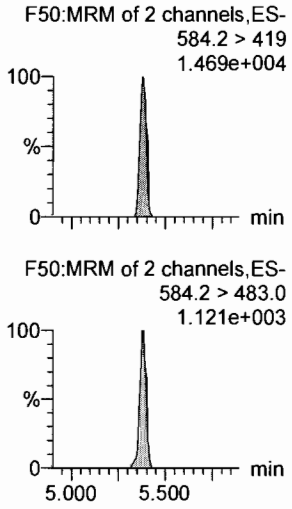


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

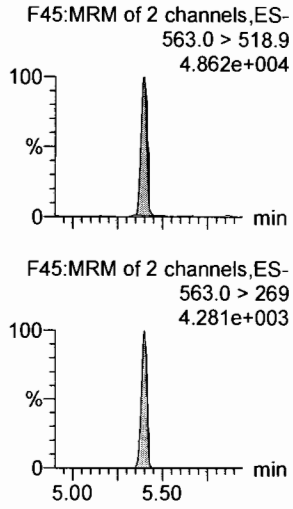
Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

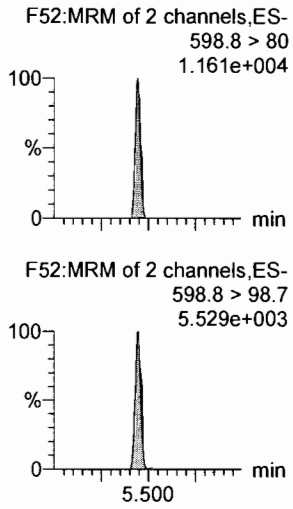
N-EtFOSAA



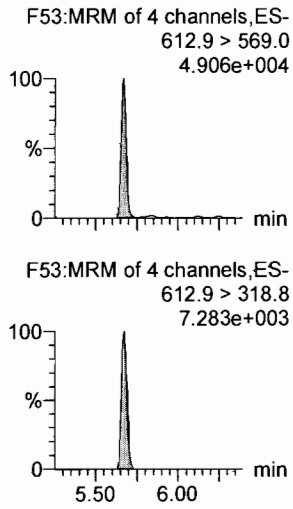
PFUdA



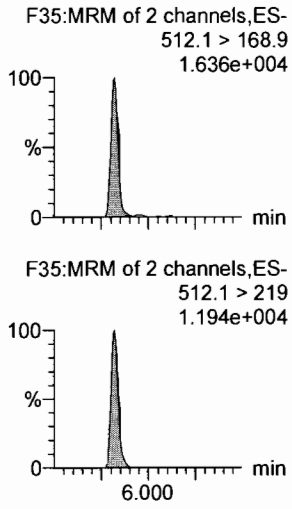
PFDS



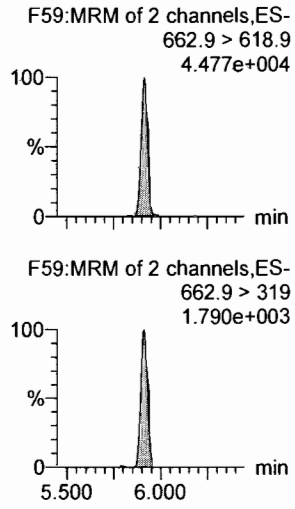
PFDoA



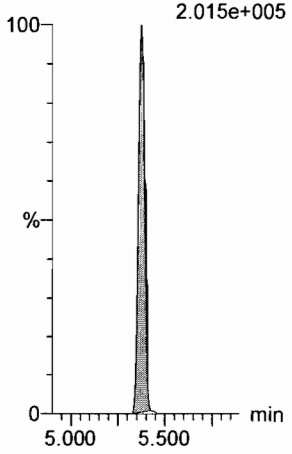
N-MeFOSA



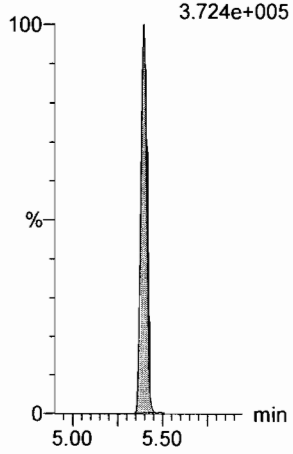
PFTrDA



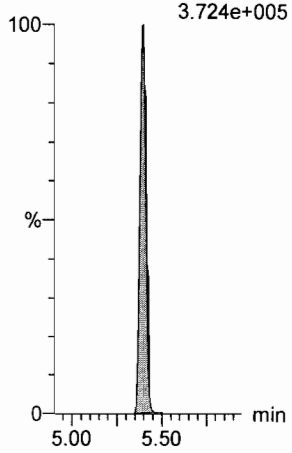
d5-N-EtFOSAA



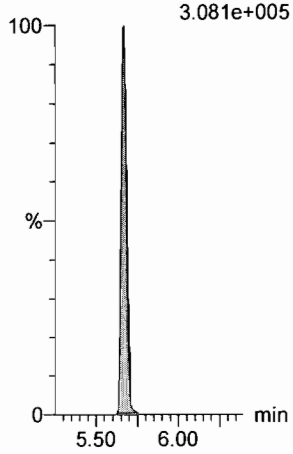
13C2-PFUdA



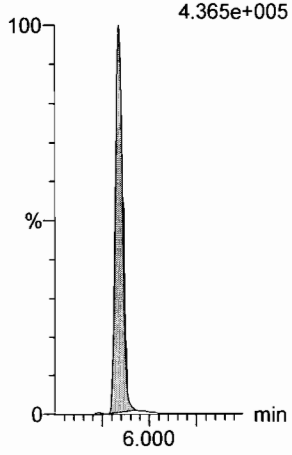
13C2-PFUdA



13C2-PFDoA



d3-N-MeFOSA



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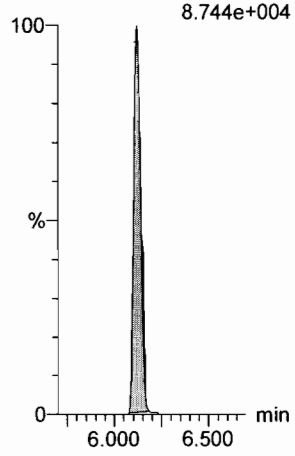
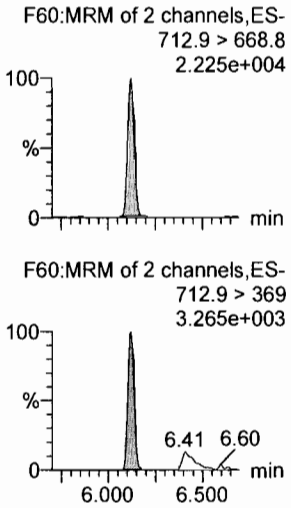


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

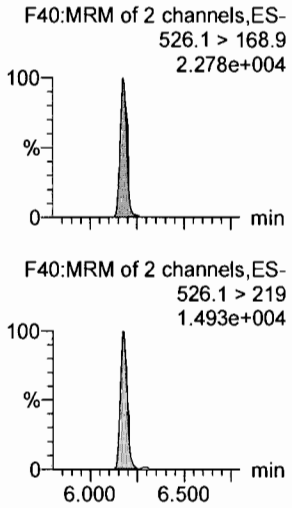
Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

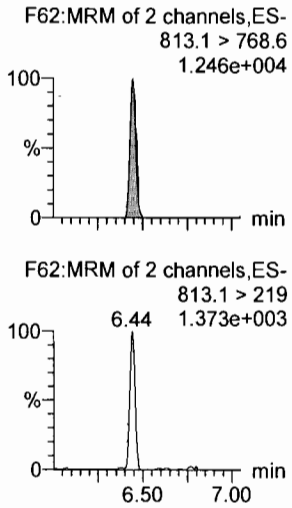
PFTeDA



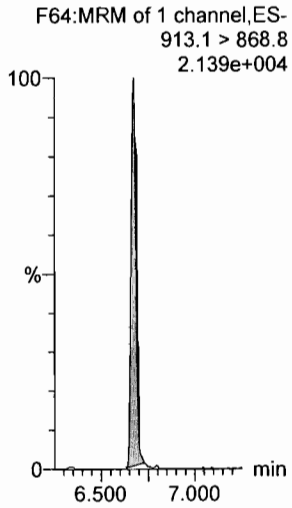
N-EtFOSA



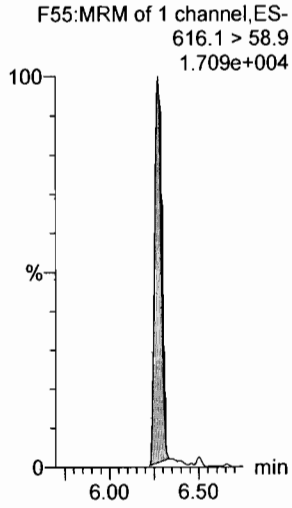
PFHxDA



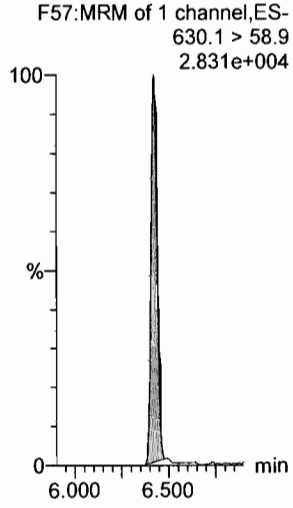
PFODA



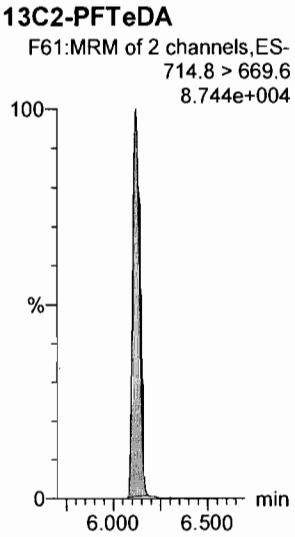
N-MeFOSE



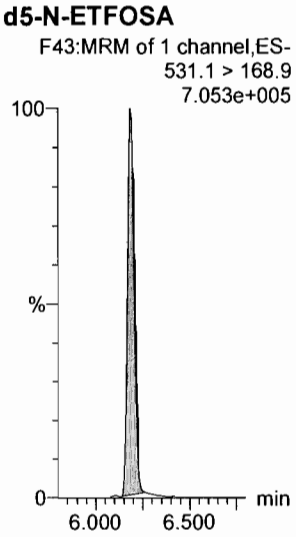
N-EtFOSE



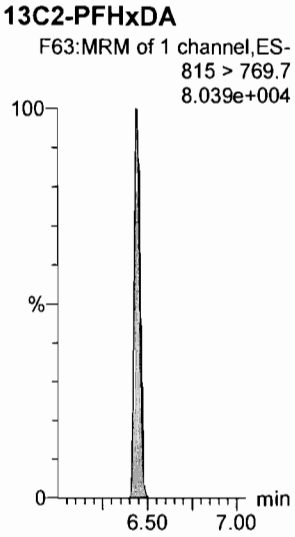
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA



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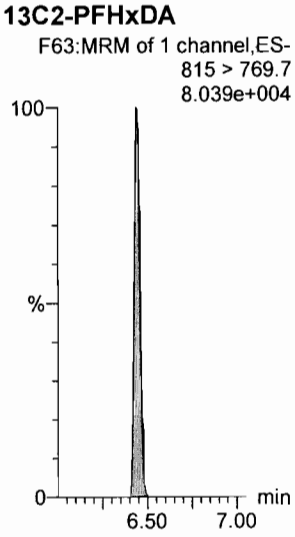
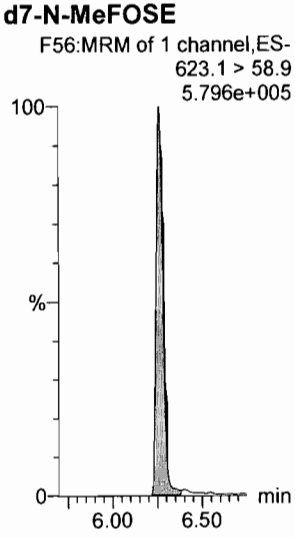
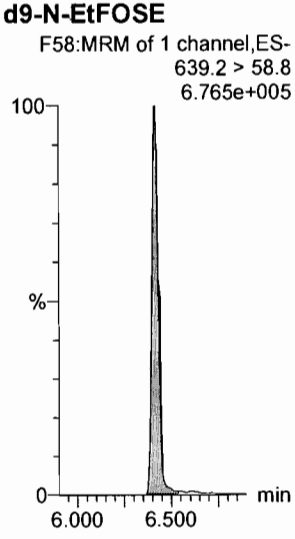


d7-N-MeFOSE



d9-N-EtFOSE

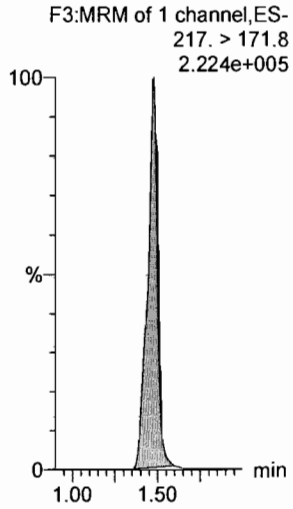


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

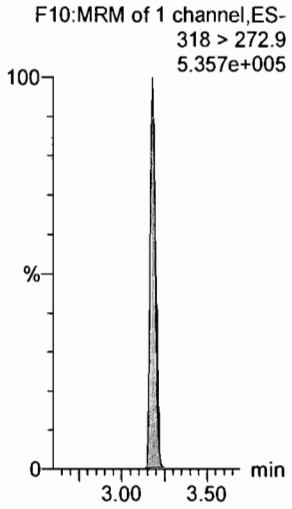
Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

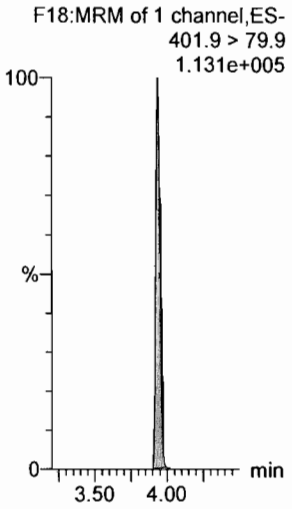
13C4-PFBA



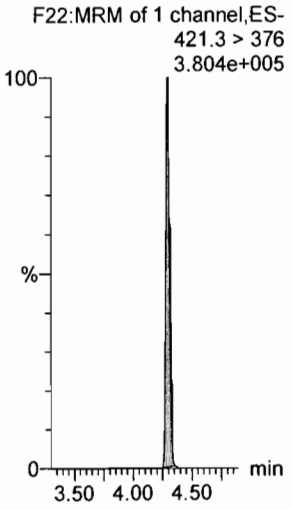
13C5-PFHxA



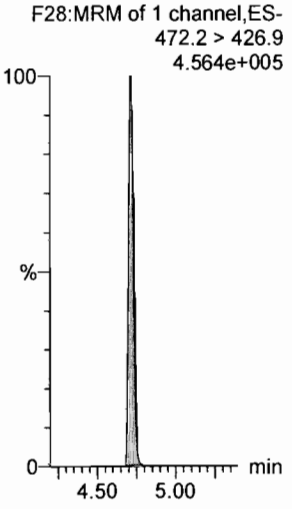
13C3-PFHxS



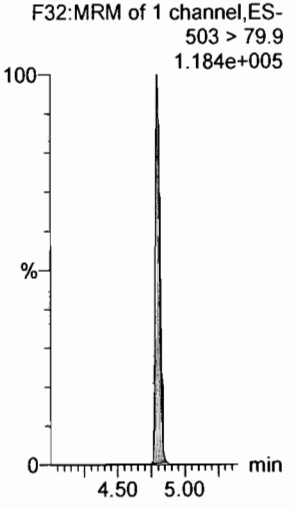
13C8-PFOA



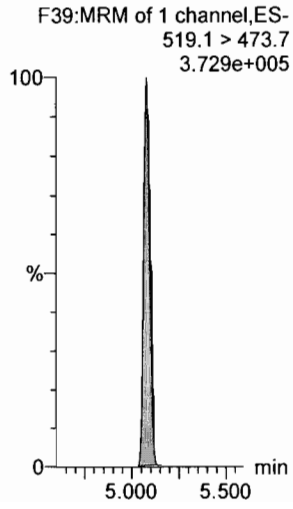
13C9-PFNA



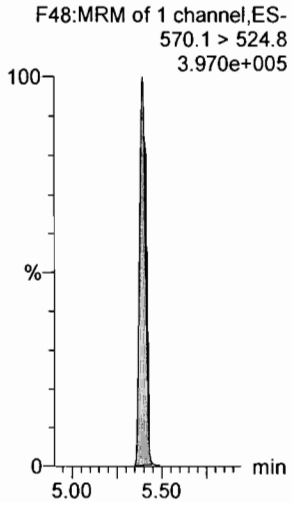
13C4-PFOS



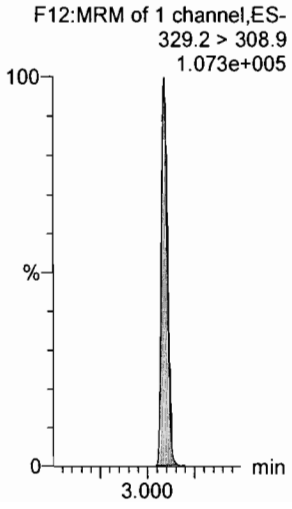
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

Ⓐ = 6:2 FTS < 70%

Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
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AD 2/7/18
JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

70-130%

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.29e4	1.39e4		1.0000	1.46	1.48	11.6	10.54	105.4
2	2	PFPeA	263.1 > 218.9	1.28e4	1.58e4		1.0000	2.42	2.42	10.1	10.34	103.4
3	3	PFBS	299.0 > 79.7	2.70e3	2.00e3		1.0000	2.69	2.70	16.9	8.937	89.4
4	4	4:2 FTS	327.2>307.2	2.69e3	2.00e3		1.0000	3.10	3.09	16.8	10.05	100.5
5	5	PFHxA	313.2 > 268.9	1.45e4	4.96e3		1.0000	3.19	3.19	14.6	9.662	96.6
6	6	PFPeS	349.1>80.1	3.24e3	2.00e3		1.0000	3.39	3.38	20.3	10.35	103.5
7	7	PFHpA	363.0 > 318.9	1.38e4	1.29e4		1.0000	3.81	3.79	13.3	10.75	107.5
8	8	L-PFHxS	398.9 > 79.6	2.08e3	1.41e3		1.0000	3.96	3.94	18.4	9.975	99.8
9	10	6:2 FTS	427.1 > 407	2.86e3	2.03e4		1.0000	4.28	4.24	1.76	6.800	68.0 Ⓐ
10	11	L-PFOA	413 > 368.7	1.59e4	2.03e4		1.0000	4.33	4.30	9.76	10.22	102.2
11	13	PFHpS	449 > 80.0	3.73e3	4.43e3		1.0000	4.44	4.40	10.5	9.202	92.0
12	14	PFNA	463.0 > 418.8	1.74e4	1.62e4		1.0000	4.76	4.72	13.4	10.89	108.9
13	15	PFOSA	498.1 > 77.8	2.81e3	2.99e3		1.0000	4.83	4.79	11.7	11.05	110.5
14	16	L-PFOS	499 > 79.9	3.63e3	4.43e3		1.0000	4.84	4.80	10.2	9.145	91.5
15	18	PFDA	513 > 468.8	1.55e4	1.54e4		1.0000	5.14	5.08	12.6	10.17	101.7
16	19	8:2 FTS	527 > 506.9	3.35e3	2.03e4		1.0000	5.12	5.05	2.06	8.934	89.3
17	20	PFNS	549.1>80.1	3.21e3	4.43e3		1.0000	5.20	5.14	9.06	10.62	106.2
18	21	N-MeFOSAA	570.1 > 419	8.48e3	7.44e3		1.0000	5.29	5.23	14.3	10.57	105.7
19	22	N-EtFOSAA	584.2 > 419	6.69e3	8.51e3		1.0000	5.45	5.38	9.83	9.225	92.3
20	23	PFUdA	563.0 > 518.9	1.26e4	1.93e4		1.0000	5.46	5.39	8.14	7.799	78.0
21	24	PFDS	598.8 > 80	4.31e3	1.17e4		1.0000	5.51	5.44	4.60	9.819	98.2
22	25	PFDoA	612.9 > 569.0	1.59e4	1.17e4		1.0000	5.74	5.67	16.9	11.09	110.9
23	26	N-MeFOSA	512.1 > 168.9	6.68e3	1.97e4		1.0000	5.84	5.83	51.0	56.02	112.0
24	27	PFTrDA	662.9 > 618.9	1.66e4	4.11e3		1.0000	5.98	5.91	50.4	12.96	129.6
25	28	PFTeDA	712.9 > 668.8	8.24e3	4.11e3		1.0000	6.20	6.12	25.0	11.44	114.4
26	29	N-EtFOSA	526.1 > 168.9	9.11e3	3.03e4		1.0000	6.22	6.18	45.1	49.67	99.3
27	30	PFHxDA	813.1 > 768.6	5.22e3	3.60e3		1.0000	6.51	6.44	7.25	9.963	99.6
28	31	PFODA	913.1 > 868.8	7.01e3	3.60e3		1.0000	6.74	6.67	9.73	10.51	105.1
29	32	N-MeFOSE	616.1 > 58.9	8.81e3	2.19e4		1.0000	6.31	6.27	60.4	60.15	120.3
30	33	N-EtFOSE	630.1 > 58.9	1.13e4	2.40e4		1.0000	6.45	6.42	70.7	60.69	121.4
31	34	13C3PFBA	216.1 > 171.8	1.39e4	1.58e4	0.876	1.0000	1.46	1.48	11.1	12.62	101.0

50-150%

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
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Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.58e4	1.82e4	0.868	1.0000	2.42	2.42	10.9	12.54	100.4
33	36	13C3-PFBS	302. > 98.8	2.00e3	1.82e4	0.109	1.0000	2.69	2.70	1.37	12.58	100.6
34	37	13C2-PFHxA	315 > 269.8	4.96e3	1.82e4	0.694	1.0000	3.19	3.19	3.41	4.906	98.1
35	38	13C4-PFHpA	367.2 > 321.8	1.29e4	1.82e4	0.694	1.0000	3.81	3.79	8.87	12.78	102.2
36	39	18O2-PFHxS	403.0 > 102.6	1.41e3	3.83e3	0.350	1.0000	3.96	3.94	4.61	13.18	105.5
37	40	13C2-6:2 FTS	429.1 > 408.9	3.96e3	1.98e4	0.242	1.0000	4.28	4.24	2.50	10.30	82.4
38	41	13C2-PFOA	414.9 > 369.7	2.03e4	1.98e4	1.069	1.0000	4.33	4.30	12.8	11.99	95.9
39	42	13C5-PFNA	468.2 > 422.9	1.62e4	1.96e4	0.929	1.0000	4.76	4.72	10.4	11.14	89.1
40	43	13C8-PFOSA	506.1 > 77.7	2.99e3	1.45e4	0.226	1.0000	4.83	4.79	2.59	11.44	91.5
41	44	13C8-PFOS	507.0 > 79.9	4.43e3	4.16e3	1.041	1.0000	4.84	4.80	13.3	12.78	102.3
42	45	13C2-PFDA	515.1 > 469.9	1.54e4	1.49e4	1.217	1.0000	5.14	5.08	12.9	10.61	84.9
43	46	13C2-8:2 FTS	529.1 > 508.7	2.13e3	1.82e4	0.131	1.0000	5.12	5.05	1.46	11.14	89.1
44	47	d3-N-MeFOSAA	573.3 > 419	7.44e3	1.45e4	0.432	1.0000	5.29	5.22	6.42	14.85	118.8
45	48	d5-N-EtFOSAA	589.3 > 419	8.51e3	1.45e4	0.476	1.0000	5.45	5.37	7.35	15.44	123.5
46	49	13C2-PFUdA	565 > 519.8	1.93e4	1.45e4	0.969	1.0000	5.46	5.39	16.7	17.20	137.6
47	50	13C2-PFDoA	615.0 > 569.7	1.17e4	1.45e4	0.605	1.0000	5.74	5.67	10.1	16.72	133.8
48	51	d3-N-MeFOSA	515.2 > 168.9	1.97e4	1.45e4	0.116	1.0000	5.84	5.84	17.0	146.9	98.0
49	52	13C2-PFTeDA	714.8 > 669.6	4.11e3	1.45e4	0.331	1.0000	6.20	6.12	3.55	10.73	85.8
50	53	d5-N-ETFOSA	531.1 > 168.9	3.03e4	1.45e4	0.171	1.0000	6.22	6.19	26.2	152.6	101.7
51	54	13C2-PFHxDA	815 > 769.7	3.60e3	1.45e4	0.577	1.0000	6.51	6.44	3.11	5.390	107.8
52	55	d7-N-MeFOSE	623.1 > 58.9	2.19e4	1.45e4	0.152	1.0000	6.31	6.27	18.9	124.6	83.1
53	56	d9-N-EtFOSE	639.2 > 58.8	2.40e4	1.45e4	0.142	1.0000	6.45	6.41	20.7	145.8	97.2
54	57	13C4-PFBA	217. > 171.8	1.58e4	1.58e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.82e4	1.82e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.83e3	3.83e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.98e4	1.98e4	1.000	1.0000	4.33	4.30	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.96e4	1.96e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.16e3	4.16e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.49e4	1.49e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.45e4	1.45e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.37e3	1.82e4	0.287	1.0000	3.10	3.09	3.00	10.47	83.8

50-150%

50-150%

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Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Compound name: PFBA

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1	180206M1_1	IPA	06-Feb-18	10:56:05
2	180206M1_2	CS3 TESTER	06-Feb-18	11:07:35
3	180206M1_3	IPA	06-Feb-18	11:19:04
4	180206M1_4	ST180206M1-1 PFC CS0 18A3009	06-Feb-18	11:30:34
5	180206M1_5	B8A0172-BS1 OPR 0.125	06-Feb-18	11:41:58
6	180206M1_6	B8A0172-BLK1 Method Blank 0.125	06-Feb-18	11:53:25
7	180206M1_7	1800180-07 YEAGR-EB-02-012018 0.11998	06-Feb-18	12:04:52
8	180206M1_8	B8A0166-BS1 OPR 0.25	06-Feb-18	12:16:19
9	180206M1_9	IPA	06-Feb-18	12:27:46
10	180206M1_10	ST180206M1-2 PFC CS3 18A3012	06-Feb-18	12:39:16
11	180206M1_11	IPA	06-Feb-18	12:50:42
12	180206M1_12	B8A0155-BS1 OPR 0.125	06-Feb-18	13:20:45
13	180206M1_13	B8A0155-BLK1 Method Blank 0.125	06-Feb-18	13:32:14
14	180206M1_14	B8A0155-MS1 Matrix Spike 0.1176	06-Feb-18	13:43:41
15	180206M1_15	B8A0155-MSD1 Matrix Spike Dup 0.11695	06-Feb-18	13:55:10
16	180206M1_16	1800100-09 MINNE-GW-TW12-010918 0.11992	06-Feb-18	14:06:41
17	180206M1_17	1800100-10 MINNE-GW-TW14-010918 0.11685	06-Feb-18	14:18:07
18	180206M1_18	1800100-11 MINNE-GW-TW15-010918 0.11738	06-Feb-18	14:29:37
19	180206M1_19	no data		
20	180206M1_20	no data		
21	180206M1_21	1800100-17 MINNE-GW-TW11-011018 0.11832	06-Feb-18	14:41:06
22	180206M1_22	1800100-18 MINNE-GW-TW17-011018 0.11988	06-Feb-18	14:52:37
23	180206M1_23	1800100-19 MINNE-GW-TW18-011018 0.11609	06-Feb-18	15:04:03
24	180206M1_24	B8A0162-MS1 Matrix Spike 0.12293	06-Feb-18	15:15:30
25	180206M1_25	B8A0162-MSD1 Matrix Spike Dup 0.12128	06-Feb-18	15:26:57
26	180206M1_26	B8A0162-MS2 Matrix Spike 0.11755	06-Feb-18	15:38:23
27	180206M1_27	B8A0162-MSD2 Matrix Spike Dup 0.12186	06-Feb-18	15:49:51
28	180206M1_28	1800177-06 YEAGR-06-SW01-011718 0.12192	06-Feb-18	16:01:17
29	180206M1_29	no data		
30	180206M1_30	1800195-03 PITTS-GW-DUP01-011618 0.12017	06-Feb-18	16:12:44
31	180206M1_31	IPA	06-Feb-18	16:24:14

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Compound name: PFBA

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32	180206M1_32	ST180206M1-3 PFC CS3 18A3012	06-Feb-18	16:35:41
33	180206M1_33	IPA	06-Feb-18	16:47:08
34	180206M1_34	1800195-04 PITTS-GW-TW01B-011618 0.11986	06-Feb-18	16:58:35
35	180206M1_35	1800195-05 PITTS-GW-TW03-011718 0.12099	06-Feb-18	17:10:04
36	180206M1_36	1800195-06 PITTS-GW-TW07-011718 0.12041	06-Feb-18	17:21:34
37	180206M1_37	no data		
38	180206M1_38	1800195-07 PITTS-GW-TW13-011618 0.12	06-Feb-18	17:33:03
39	180206M1_39	1800195-08 PITTS-GW-TW15-011618 0.12086	06-Feb-18	17:44:33
40	180206M1_40	1800195-09 PITTS-GW-TW16-011618 0.11819	06-Feb-18	17:56:01
41	180206M1_41	1800195-10 PITTS-GW-TW17-011618 0.11997	06-Feb-18	18:07:31
42	180206M1_42	1800195-11 PITTS-GW-TW18-011618 0.12121	06-Feb-18	18:19:02
43	180206M1_43	1800177-06@5X YEAGR-06-SW01-011718 0.1...	06-Feb-18	18:30:28
44	180206M1_44	B8A0162-MS1@5X Matrix Spike 0.12293	06-Feb-18	18:41:55
45	180206M1_45	B8A0162-MSD1@5X Matrix Spike Dup 0.12128	06-Feb-18	18:53:22
46	180206M1_46	1800195-06@5X PITTS-GW-TW07-011718 0.1...	06-Feb-18	19:04:49
47	180206M1_47	B8A0162-MS2@5X Matrix Spike 0.11755	06-Feb-18	19:16:15
48	180206M1_48	1702193-01 921691257 3	06-Feb-18	20:13:42
49	180206M1_49	B8A0172-MS1@5X Matrix Spike 0.119	06-Feb-18	20:25:06
50	180206M1_50	B8A0172-MSD1@5X Matrix Spike Dup 0.11886	06-Feb-18	20:36:33
51	180206M1_51	1800180-10@5X YEAGR-GW-DUP01-011918 0...	06-Feb-18	20:48:03
52	180206M1_52	1800180-11@5X YEAGR-GW-ML-FL014-MW0...	06-Feb-18	20:59:31
53	180206M1_53	IPA	06-Feb-18	21:11:00
54	180206M1_54	1800180-17 YEAGR-09-SW01-012018 0.1174	06-Feb-18	21:22:30
55	180206M1_55	B8B0018-BS1 OPR 3	06-Feb-18	21:33:59
56	180206M1_56	B8B0018-BLK1 Method Blank 3	06-Feb-18	21:45:30
57	180206M1_57	1800219-01 Kenneth Kolker 3	06-Feb-18	21:56:59
58	180206M1_58	B8B0017-BS1 OPR 0.25	06-Feb-18	22:08:26
59	180206M1_59	B8B0017-BSD1 LCSD 0.25	06-Feb-18	22:19:56
60	180206M1_60	B8B0017-BLK1 Method Blank 0.25	06-Feb-18	22:31:25
61	180206M1_61	1800186-01RE1 REEPDW132 0.11965	06-Feb-18	22:42:55
62	180206M1_62	1800186-02RE1 REEPDW133 0.11325	06-Feb-18	22:54:22
63	180206M1_63	1800186-03RE1 REEPDW134 0.12036	06-Feb-18	23:05:52
64	180206M1_64	1800218-01 BZ79699 0.26192	06-Feb-18	23:17:19
65	180206M1_65	1800218-02 BZ79700 0.25325	06-Feb-18	23:28:46

(A) RI. AC 2/7/18

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
66	180206M1_66	IPA	06-Feb-18	23:40:13
67	180206M1_67	ST180206M1-5 PFC CS0 18A3009	06-Feb-18	23:51:40
68	180206M1_68	IPA	07-Feb-18	00:03:06
69	180206M1_69	1800225-01 WT1801251435MK 0.26369	07-Feb-18	00:14:36
70	180206M1_70	1800225-02 FB1801251440MK 0.25785	07-Feb-18	00:26:05
71	180206M1_71	1800225-03 WT1801251450MK 0.26447	07-Feb-18	00:37:34
72	180206M1_72	1800225-04 WSOFT1801251520MK 0.26174	07-Feb-18	00:49:03
73	180206M1_73	1800225-05 WR1801251535MK 0.26502	07-Feb-18	01:00:33
74	180206M1_74	1800235-01 SW1801230935JLB 0.25866	07-Feb-18	01:12:00
75	180206M1_75	1800235-03 SW1801231035JLB 0.25488	07-Feb-18	01:23:29
76	180206M1_76	1800245-01 GW1923180125RAP 0.26309	07-Feb-18	01:34:56
77	180206M1_77	1800245-02 GW2933180125RAP 0.24912	07-Feb-18	01:46:23
78	180206M1_78	1800245-03 GW3943180125RAP 0.24954	07-Feb-18	01:57:50
79	180206M1_79	IPA	07-Feb-18	02:09:20
80	180206M1_80	ST180206M1-6 PFC CS3 18A3012	07-Feb-18	02:20:49
81	180206M1_81	IPA	07-Feb-18	02:32:19
82	180206M1_82	B8A0167-BS1 OPR 0.125	07-Feb-18	02:43:48
83	180206M1_83	B8A0167-BSD1 LCSD 0.125	07-Feb-18	02:55:18
84	180206M1_84	B8A0167-BLK1 Method Blank 0.125	07-Feb-18	03:06:44
85	180206M1_85	1800156-09 MINNE-06-SW01-011718 0.12113	07-Feb-18	03:18:14
86	180206M1_86	1800156-10 MINNE-GW-DUP02-011218 0.12287	07-Feb-18	03:29:43
87	180206M1_87	1800156-11 MINNE-GW-TW01A-011218 0.12321	07-Feb-18	03:41:10
88	180206M1_88	1800159-12 MINNE-GW-TW10-011718 0.1059	07-Feb-18	03:52:37
89	180206M1_89	1800178-12 YEAGR-SW-DUP01-011718 0.12161	07-Feb-18	04:04:04
90	180206M1_90	1800179-12 YEAGR-GW-BW02-011918 0.11851	07-Feb-18	04:15:30
91	180206M1_91	IPA	07-Feb-18	04:26:57
92	180206M1_92	ST180206M1-7 PFC CS3 18A3012	07-Feb-18	04:38:27
93	180206M1_93	IPA	07-Feb-18	04:49:56
94	180206M1_94	B8A0197-BS1 OPR 1	07-Feb-18	05:01:25
95	180206M1_95	B8A0197-BLK1 Method Blank 1	07-Feb-18	05:12:54
96	180206M1_96	B8A0197-MS1 Matrix Spike 1.27	07-Feb-18	05:24:25
97	180206M1_97	B8A0197-MSD1 Matrix Spike Dup 1.21	07-Feb-18	05:35:54
98	180206M1_98	1800140-01 FT-SS501-0001 1.23	07-Feb-18	05:47:24
99	180206M1_99	1800140-02 FT-SS502-0001 1.17	07-Feb-18	05:58:52

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

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101	180206M1_101	1800140-04 FT-SB504-2022 1.26	07-Feb-18	06:21:51
102	180206M1_102	1800140-05 FT-SB505-1618 1.21	07-Feb-18	06:33:20
103	180206M1_103	1800140-06 FT-SB506-2022 1.26	07-Feb-18	06:44:47
104	180206M1_104	1800140-07 FT-SB507-1819 1.27	07-Feb-18	06:56:17
105	180206M1_105	1800140-08 FT-SB508-1617 1.23	07-Feb-18	07:07:44
106	180206M1_106	1800140-09 FT-SB509-1718 1.33	07-Feb-18	07:19:10
107	180206M1_107	1800140-10 FT-SB510-0910 1.16	07-Feb-18	07:30:38
108	180206M1_108	IPA	07-Feb-18	07:42:05
109	180206M1_109	ST180206M1-8 PFC CS3 18A3012	07-Feb-18	07:53:31
110	180206M1_110	IPA	07-Feb-18	08:04:58
111	180206M1_111	1800140-11 FT-SB510-1415 1.22	07-Feb-18	08:16:25
112	180206M1_112	1800140-12 FT-SB511-1617 1.24	07-Feb-18	08:27:54
113	180206M1_113	1800140-13 FT-SS512-0001 1.2	07-Feb-18	08:39:24
114	180206M1_114	1800140-14 FT-SB512-0708 1.22	07-Feb-18	08:50:54
115	180206M1_115	1800140-15 FT-SB512-2223 1.2	07-Feb-18	09:02:22
116	180206M1_116	1800140-16 FT-SS513-0001 1.19	07-Feb-18	09:13:52
117	180206M1_117	1800140-17 FT-SB513-1819 1.22	07-Feb-18	09:25:21
118	180206M1_118	1800140-18 FT-Dup01-20180116 1.2	07-Feb-18	09:36:51
119	180206M1_119	1800140-19 FT-Dup02-20180117 1.21	07-Feb-18	09:48:20
120	180206M1_120	IPA	07-Feb-18	09:59:50
121	180206M1_121	ST180206M1-9 PFC CS3 18A3012	07-Feb-18	10:11:19
122	180206M1_122	IPA	07-Feb-18	10:22:48

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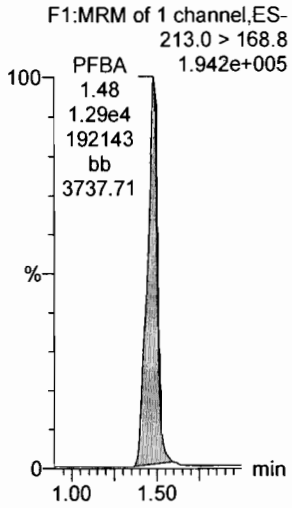
Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

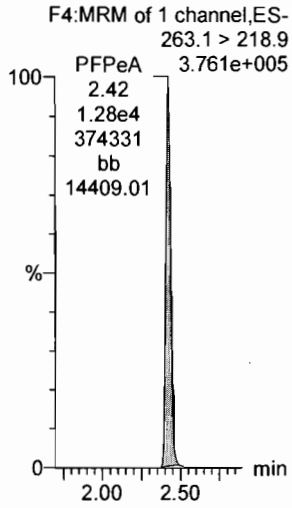
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFBA



PFPeA



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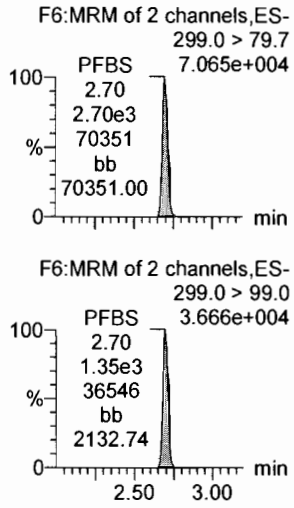

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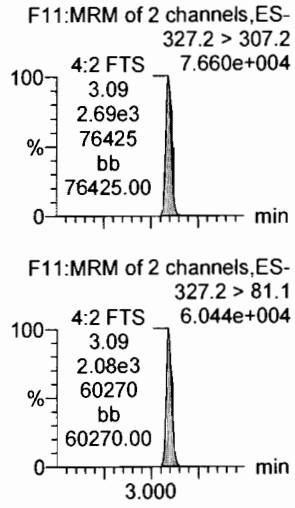

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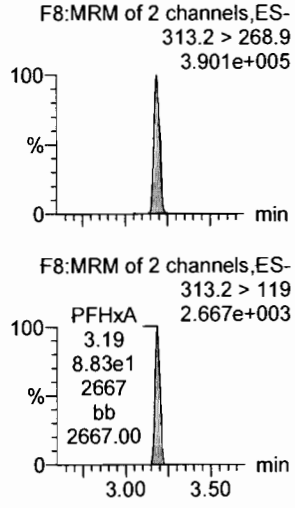

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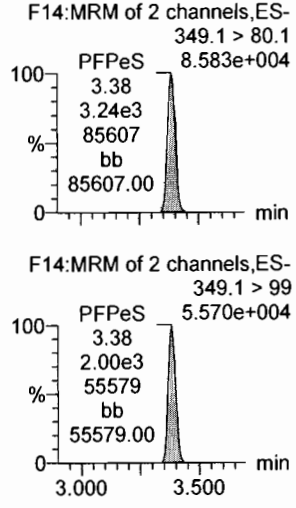

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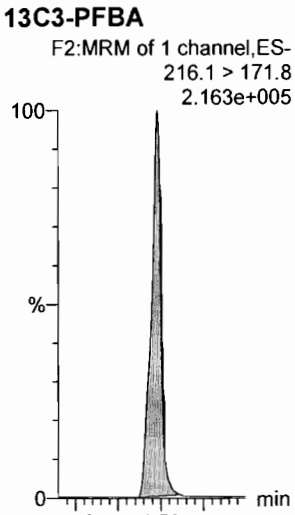

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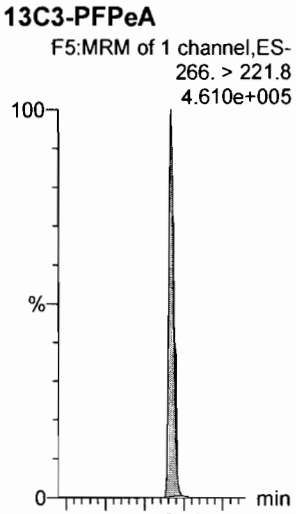

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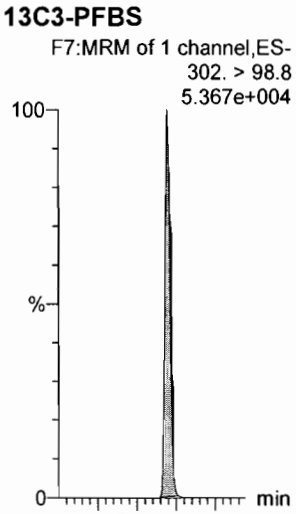

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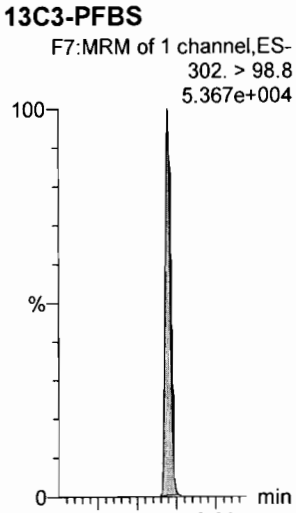
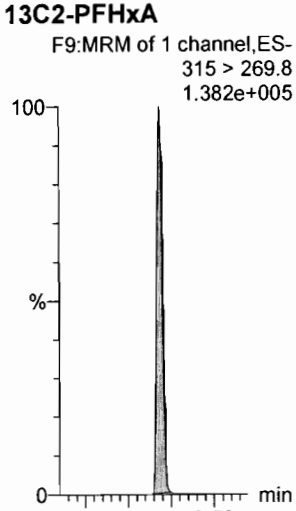


13C2-PFHxA



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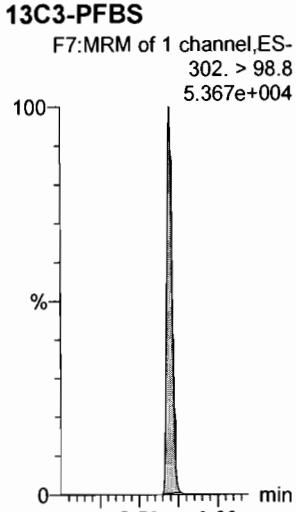

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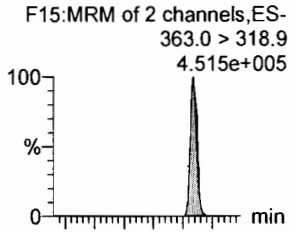
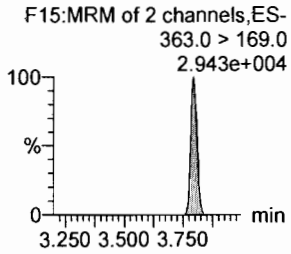
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFHpA





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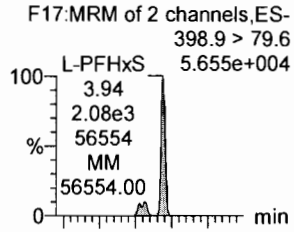
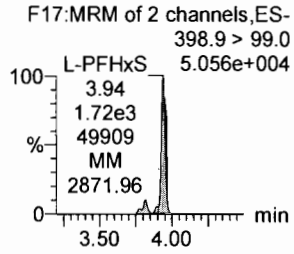
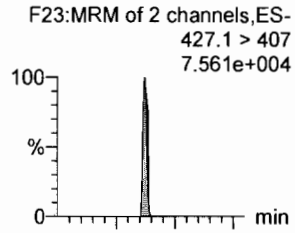
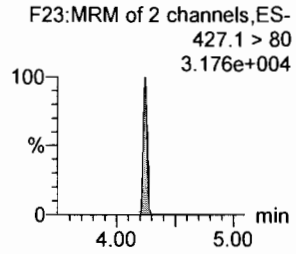




6:2 FTS





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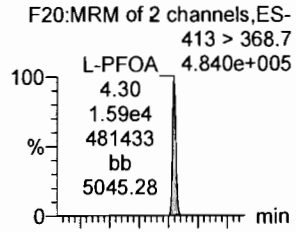

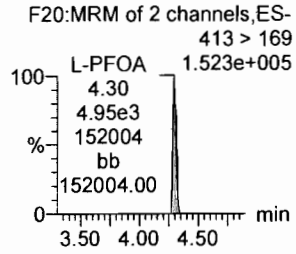

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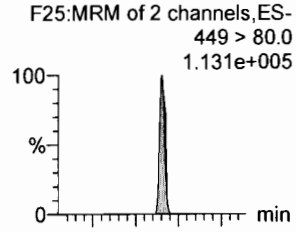

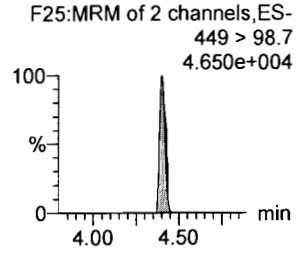

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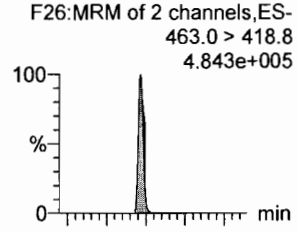

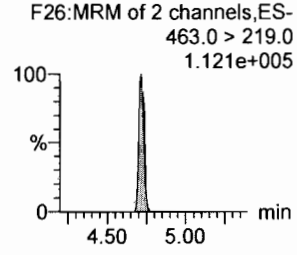

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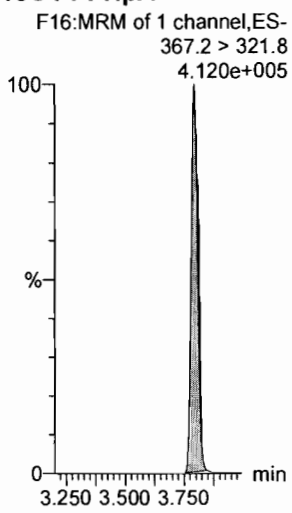
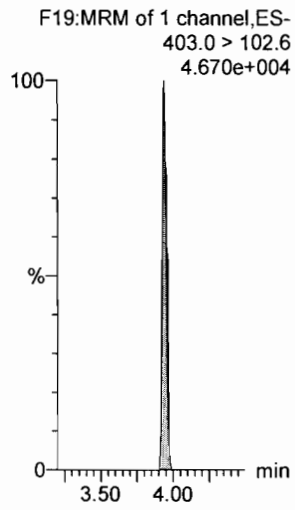


18O2-PFHxS



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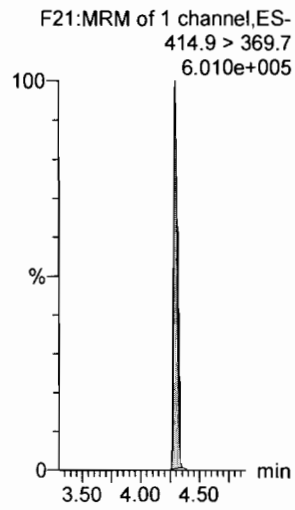

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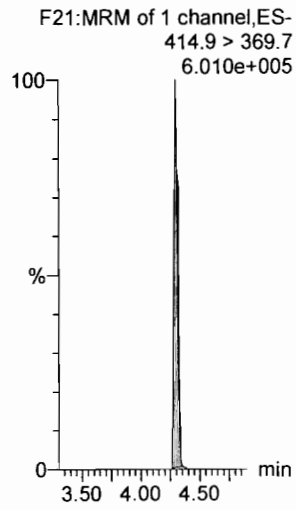

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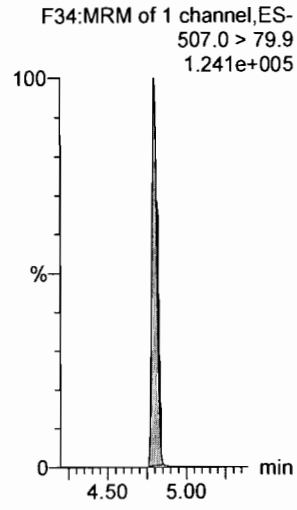

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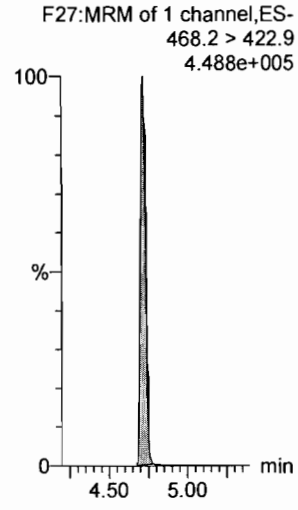

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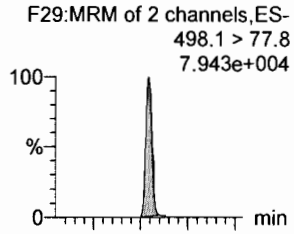
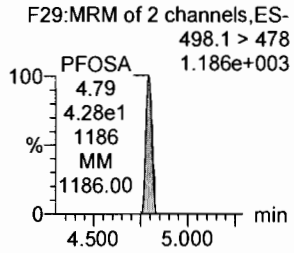
Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFOSA





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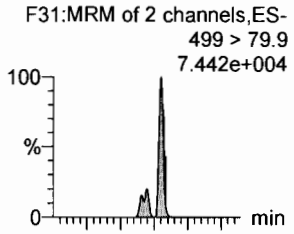

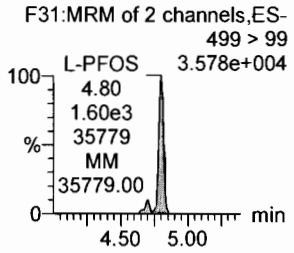

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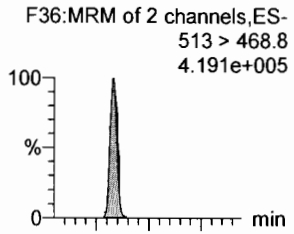

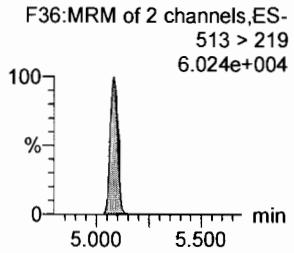

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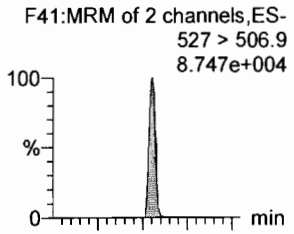

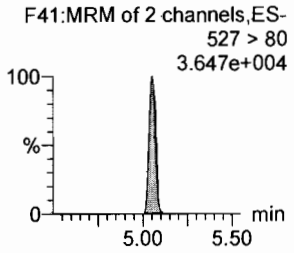

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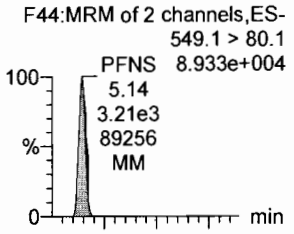

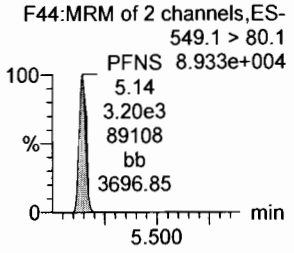

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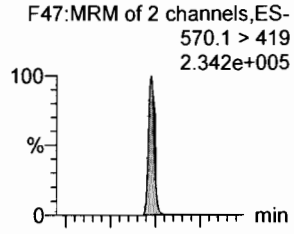

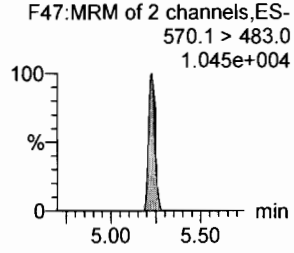

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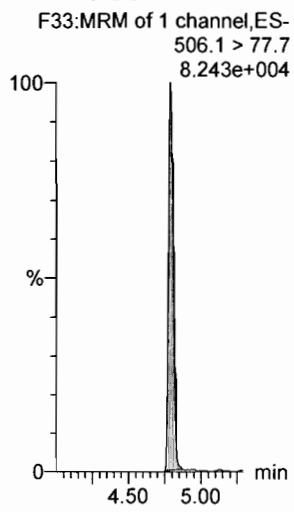

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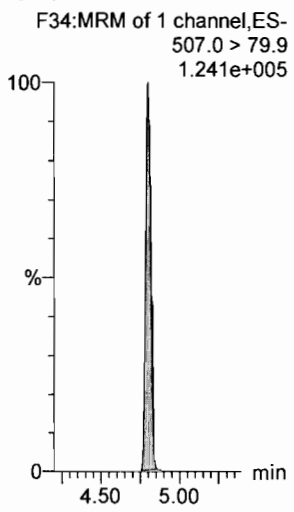

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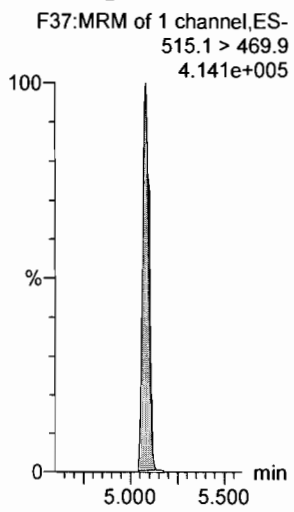

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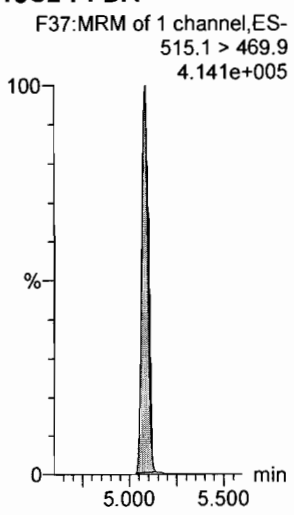

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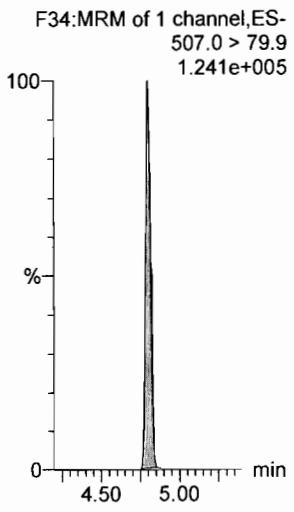
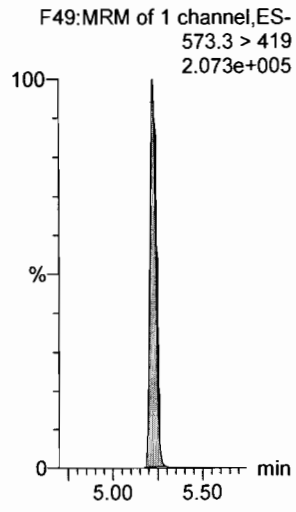


d3-N-MeFOSAA



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Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

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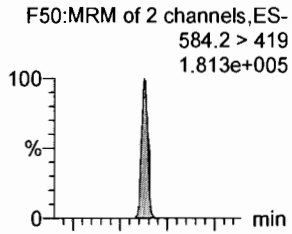

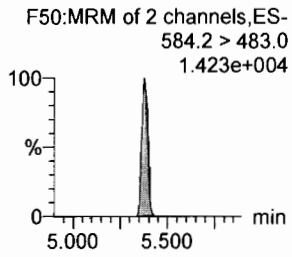

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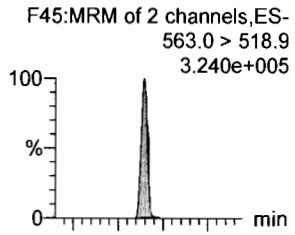

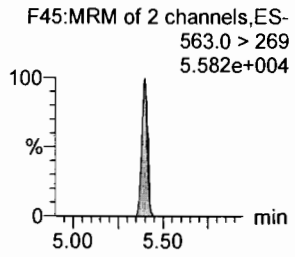

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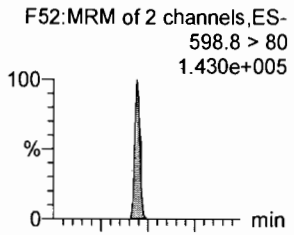
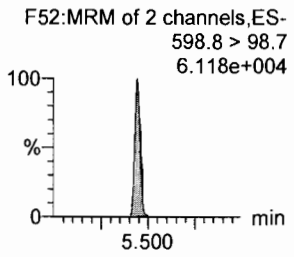
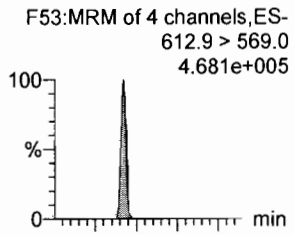
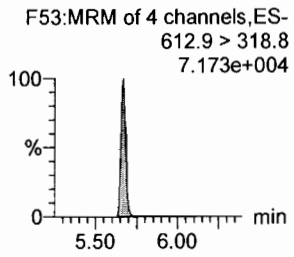




PFDoA





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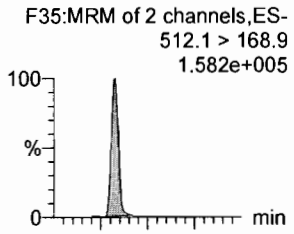

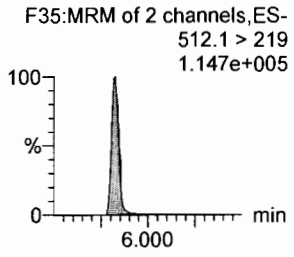

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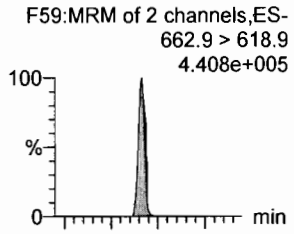
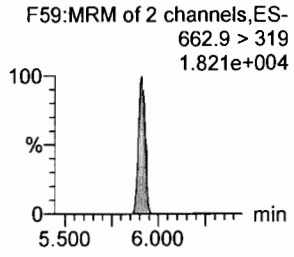
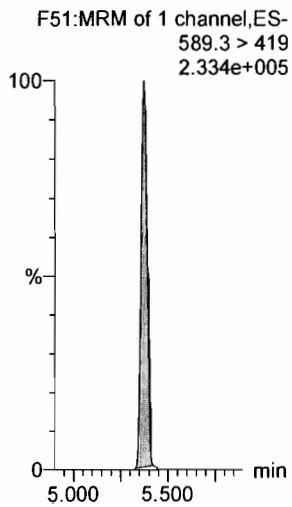




d5-N-EtFOSAA



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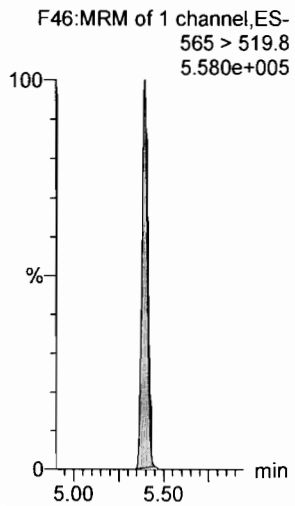

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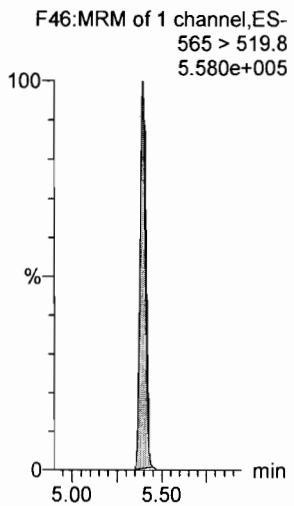
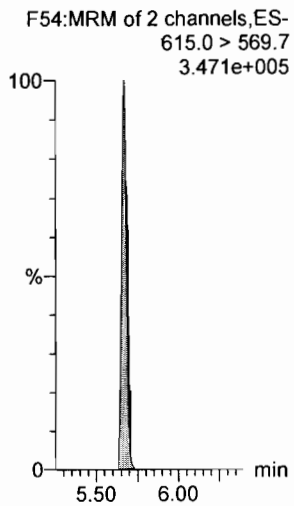
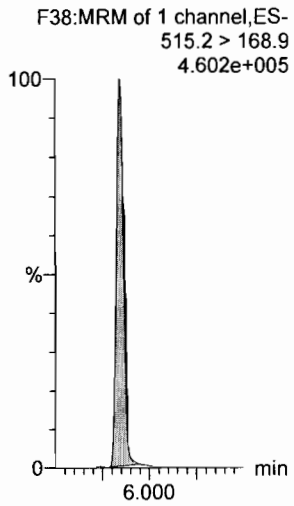


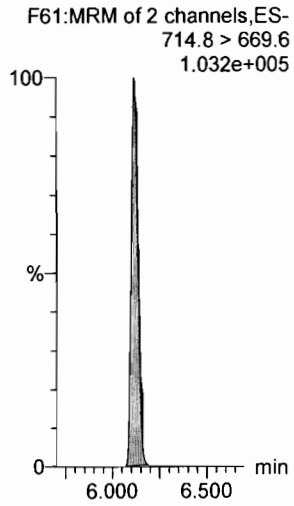
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA

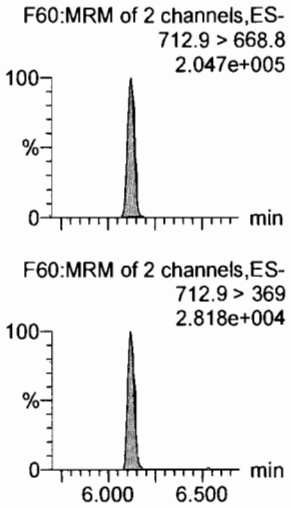


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

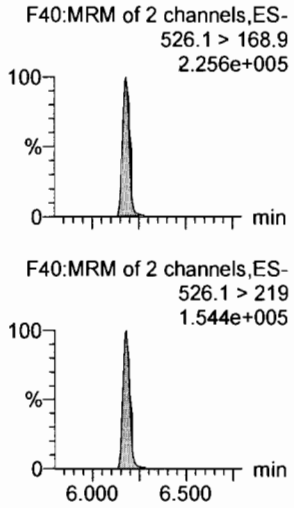
Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

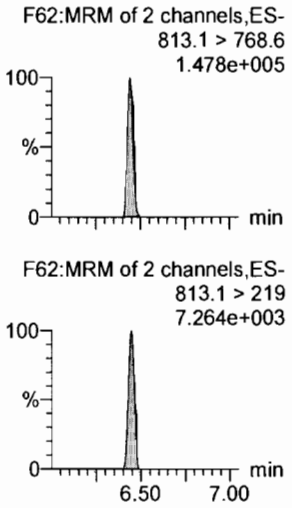
PFTeDA



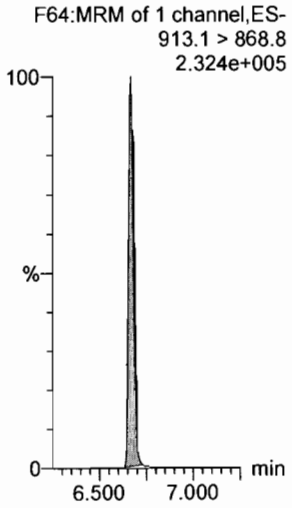
N-EtFOSA



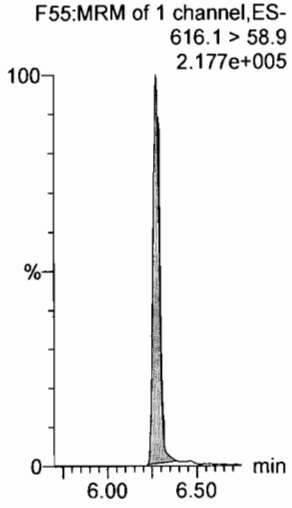
PFHxDA



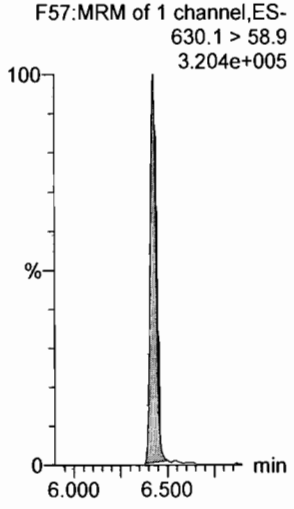
PFODA



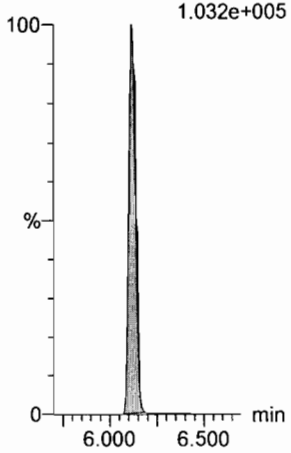
N-MeFOSE



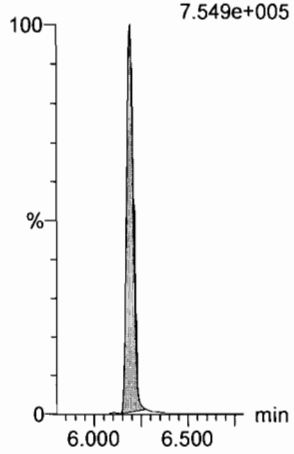
N-EtFOSE



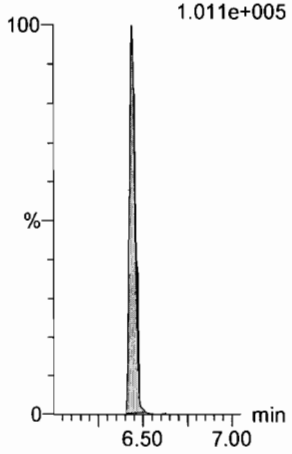
13C2-PFTeDA



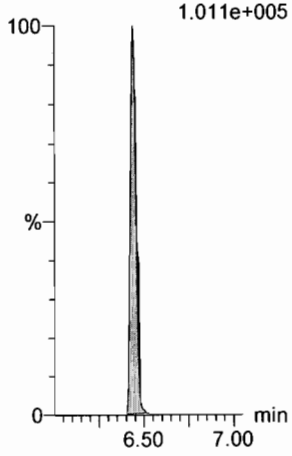
d5-N-ETFOSA



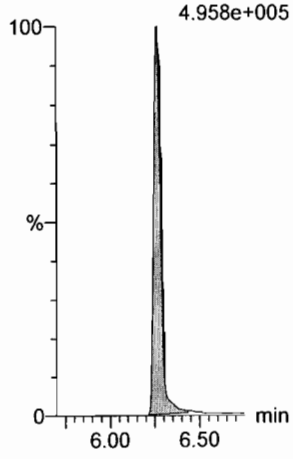
13C2-PFHxDA



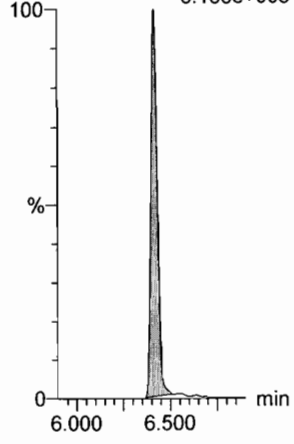
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE

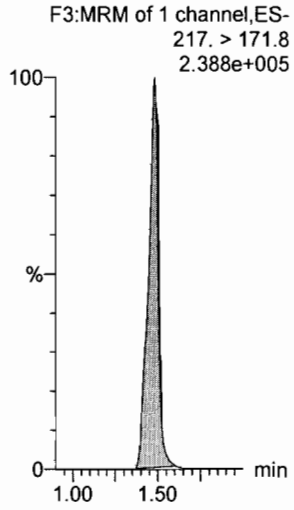


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

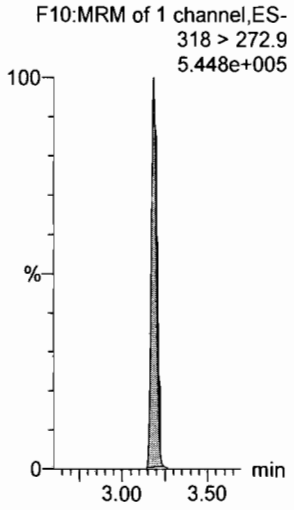
Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

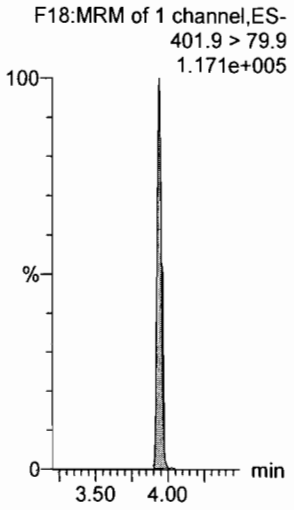
13C4-PFBA



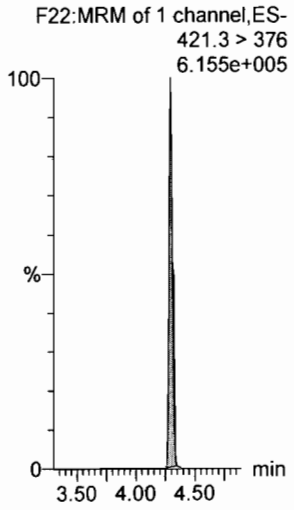
13C5-PFHxA



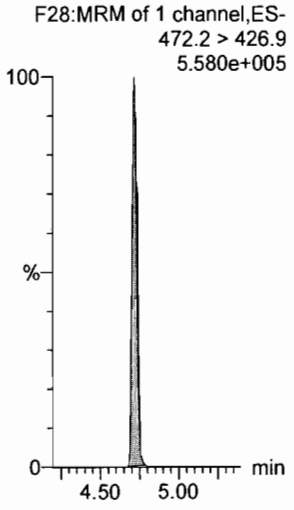
13C3-PFHxS



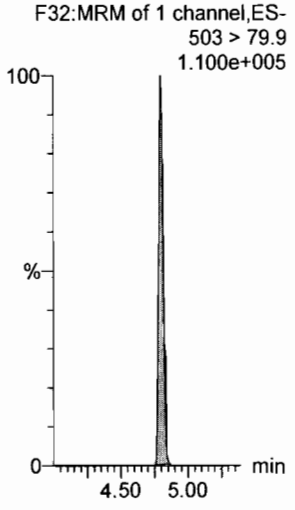
13C8-PFOA



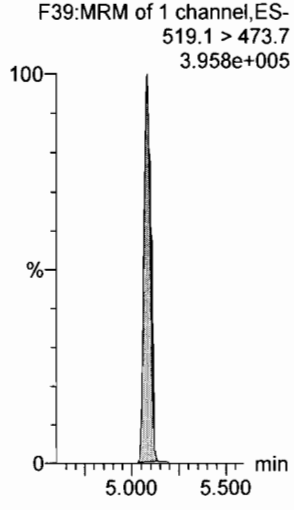
13C9-PFNA



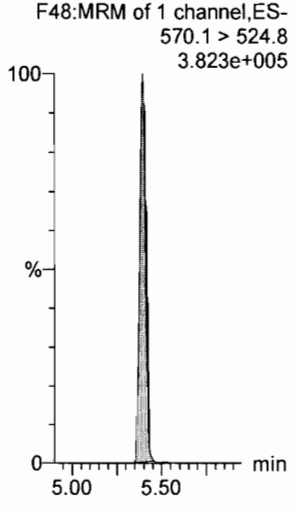
13C4-PFOS



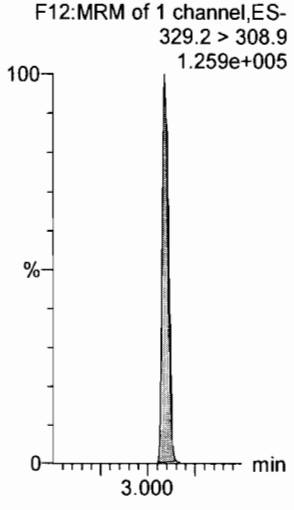
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



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Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time

Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

(A) = 6:2FTS < 70%

(B) = PFDoA > 130%

AD 2/7/18

JA. 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

70-130%

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.39e4	1.44e4		1.0000	1.46	1.49	12.0	10.99	109.9
2	2	PFPeA	263.1 > 218.9	1.37e4	1.69e4		1.0000	2.42	2.42	10.1	10.42	104.2
3	3	PFBS	299.0 > 79.7	3.36e3	2.18e3		1.0000	2.69	2.70	19.3	10.20	102.0
4	4	4:2 FTS	327.2>307.2	2.72e3	2.18e3		1.0000	3.10	3.10	15.6	9.320	93.2
5	5	PFHxA	313.2 > 268.9	1.75e4	5.49e3		1.0000	3.19	3.19	15.9	10.55	105.5
6	6	PFPeS	349.1>80.1	3.48e3	2.18e3		1.0000	3.39	3.39	20.0	10.19	101.9
7	7	PFHpA	363.0 > 318.9	1.44e4	1.30e4		1.0000	3.81	3.80	13.8	11.15	111.5
8	8	L-PFHxS	398.9 > 79.6	2.22e3	1.65e3		1.0000	3.96	3.94	16.8	9.095	91.0
9	10	6:2 FTS	427.1 > 407	3.22e3	2.22e4		1.0000	4.28	4.24	1.81	6.983	69.8 (A)
10	11	L-PFOA	413 > 368.7	1.89e4	2.22e4		1.0000	4.33	4.30	10.6	11.16	111.6
11	13	PFHpS	449 > 80.0	4.10e3	4.87e3		1.0000	4.44	4.41	10.5	9.214	92.1
12	14	PFNA	463.0 > 418.8	1.53e4	1.52e4		1.0000	4.76	4.72	12.6	10.20	102.0
13	15	PFOSA	498.1 > 77.8	3.01e3	3.45e3		1.0000	4.83	4.80	10.9	10.28	102.8
14	16	L-PFOS	499 > 79.9	3.71e3	4.87e3		1.0000	4.84	4.80	9.53	8.532	85.3
15	18	PFDA	513 > 468.8	1.47e4	1.38e4		1.0000	5.14	5.08	13.3	10.76	107.6
16	19	8:2 FTS	527 > 506.9	2.95e3	2.22e4		1.0000	5.12	5.05	1.66	7.171	71.7
17	20	PFNS	549.1>80.1	2.68e3	4.87e3		1.0000	5.20	5.14	6.87	8.058	80.6
18	21	N-MeFOSAA	570.1 > 419	8.70e3	7.14e3		1.0000	5.29	5.23	15.2	11.29	112.9
19	22	N-EtFOSAA	584.2 > 419	7.35e3	8.96e3		1.0000	5.45	5.38	10.3	9.621	96.2
20	23	PFUdA	563.0 > 518.9	1.59e4	1.90e4		1.0000	5.46	5.40	10.5	10.08	100.8
21	24	PFDS	598.8 > 80	3.70e3	1.29e4		1.0000	5.51	5.44	3.58	7.653	76.5
22	25	PFDoA	612.9 > 569.0	2.07e4	1.29e4		1.0000	5.74	5.67	20.0	13.10	131.0 (B)
23	26	N-MeFOSA	512.1 > 168.9	7.26e3	2.10e4		1.0000	5.84	5.83	51.8	56.96	113.9
24	27	PFTrDA	662.9 > 618.9	2.00e4	5.28e3		1.0000	5.98	5.91	47.5	12.20	122.0
25	28	PFTeDA	712.9 > 668.8	1.10e4	5.28e3		1.0000	6.20	6.12	26.2	11.96	119.6
26	29	N-EtFOSA	526.1 > 168.9	9.96e3	3.18e4		1.0000	6.22	6.18	47.0	51.80	103.6
27	30	PFHxDA	813.1 > 768.6	5.41e3	3.49e3		1.0000	6.51	6.44	7.76	10.69	106.9
28	31	PFODA	913.1 > 868.8	7.37e3	3.49e3		1.0000	6.74	6.67	10.6	11.44	114.4
29	32	N-MeFOSE	616.1 > 58.9	9.20e3	3.20e4		1.0000	6.31	6.27	43.1	43.09	86.2
30	33	N-EtFOSE	630.1 > 58.9	1.24e4	3.11e4		1.0000	6.45	6.42	60.0	51.48	103.0
31	34	13C8PFOA	216.1 > 171.8	1.44e4	1.68e4	0.876	1.0000	1.46	1.49	10.8	12.29	98.3

50-150%

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.69e4	2.06e4	0.868	1.0000	2.42	2.42	10.2	11.79	94.3
33	36	13C3-PFBS	302. > 98.8	2.18e3	2.06e4	0.109	1.0000	2.69	2.70	1.32	12.11	96.9
34	37	13C2-PFHxA	315 > 269.8	5.49e3	2.06e4	0.694	1.0000	3.19	3.19	3.33	4.803	96.1
35	38	13C4-PFHpA	367.2 > 321.8	1.30e4	2.06e4	0.694	1.0000	3.81	3.80	7.91	11.39	91.1
36	39	18O2-PFHxS	403.0 > 102.6	1.65e3	4.71e3	0.350	1.0000	3.96	3.94	4.39	12.54	100.3
37	40	13C2-6:2 FTS	429.1 > 408.9	4.34e3	2.03e4	0.242	1.0000	4.28	4.24	2.66	10.99	87.9
38	41	13C2-PFOA	414.9 > 369.7	2.22e4	2.03e4	1.069	1.0000	4.33	4.30	13.7	12.78	102.2
39	42	13C5-PFNA	468.2 > 422.9	1.52e4	1.57e4	0.929	1.0000	4.76	4.72	12.1	13.05	104.4
40	43	13C8-PFOSA	506.1 > 77.7	3.45e3	1.92e4	0.226	1.0000	4.83	4.79	2.24	9.931	79.4
41	44	13C8-PFOS	507.0 > 79.9	4.87e3	4.26e3	1.041	1.0000	4.84	4.80	14.3	13.71	109.7
42	45	13C2-PFDA	515.1 > 469.9	1.38e4	1.29e4	1.217	1.0000	5.14	5.08	13.4	11.00	88.0
43	46	13C2-8:2 FTS	529.1 > 508.7	2.54e3	2.06e4	0.131	1.0000	5.12	5.05	1.54	11.74	94.0
44	47	d3-N-MeFOSAA	573.3 > 419	7.14e3	1.92e4	0.432	1.0000	5.29	5.22	4.65	10.75	86.0
45	48	d5-N-EtFOSAA	589.3 > 419	8.96e3	1.92e4	0.476	1.0000	5.45	5.37	5.84	12.26	98.1
46	49	13C2-PFUdA	565 > 519.8	1.90e4	1.92e4	0.969	1.0000	5.46	5.39	12.4	12.77	102.2
47	50	13C2-PFDoA	615.0 > 569.7	1.29e4	1.92e4	0.605	1.0000	5.74	5.67	8.42	13.91	111.3
48	51	d3-N-MeFOSA	515.2 > 168.9	2.10e4	1.92e4	0.116	1.0000	5.84	5.84	13.7	118.5	79.0
49	52	13C2-PFTeDA	714.8 > 669.6	5.28e3	1.92e4	0.331	1.0000	6.20	6.12	3.44	10.38	83.1
50	53	d5-N-ETFOSA	531.1 > 168.9	3.18e4	1.92e4	0.171	1.0000	6.22	6.19	20.7	120.7	80.4
51	54	13C2-PFHxDA	815 > 769.7	3.49e3	1.92e4	0.577	1.0000	6.51	6.44	2.27	3.934	78.7
52	55	d7-N-MeFOSE	623.1 > 58.9	3.20e4	1.92e4	0.152	1.0000	6.31	6.27	20.8	137.2	91.5
53	56	d9-N-EtFOSE	639.2 > 58.8	3.11e4	1.92e4	0.142	1.0000	6.45	6.41	20.3	142.6	95.0
54	57	13C4-PFBA	217. > 171.8	1.68e4	1.68e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	2.06e4	2.06e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	4.71e3	4.71e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	2.03e4	2.03e4	1.000	1.0000	4.33	4.30	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.57e4	1.57e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.26e3	4.26e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.29e4	1.29e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.92e4	1.92e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.60e3	2.06e4	0.287	1.0000	3.10	3.10	2.79	9.727	77.8

50-150%.

50-150%.

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Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180206M1_1	IPA	06-Feb-18	10:56:05
2	180206M1_2	CS3 TESTER	06-Feb-18	11:07:35
3	180206M1_3	IPA	06-Feb-18	11:19:04
4	180206M1_4	ST180206M1-1 PFC CS0 18A3009	06-Feb-18	11:30:34
5	180206M1_5	B8A0172-BS1 OPR 0.125	06-Feb-18	11:41:58
6	180206M1_6	B8A0172-BLK1 Method Blank 0.125	06-Feb-18	11:53:25
7	180206M1_7	1800180-07 YEAGR-EB-02-012018 0.11998	06-Feb-18	12:04:52
8	180206M1_8	B8A0166-BS1 OPR 0.25	06-Feb-18	12:16:19
9	180206M1_9	IPA	06-Feb-18	12:27:46
10	180206M1_10	ST180206M1-2 PFC CS3 18A3012	06-Feb-18	12:39:16
11	180206M1_11	IPA	06-Feb-18	12:50:42
12	180206M1_12	B8A0155-BS1 OPR 0.125	06-Feb-18	13:20:45
13	180206M1_13	B8A0155-BLK1 Method Blank 0.125	06-Feb-18	13:32:14
14	180206M1_14	B8A0155-MS1 Matrix Spike 0.1176	06-Feb-18	13:43:41
15	180206M1_15	B8A0155-MSD1 Matrix Spike Dup 0.11695	06-Feb-18	13:55:10
16	180206M1_16	1800100-09 MINNE-GW-TW12-010918 0.11992	06-Feb-18	14:06:41
17	180206M1_17	1800100-10 MINNE-GW-TW14-010918 0.11685	06-Feb-18	14:18:07
18	180206M1_18	1800100-11 MINNE-GW-TW15-010918 0.11738	06-Feb-18	14:29:37
19	180206M1_19	no data		
20	180206M1_20	no data		
21	180206M1_21	1800100-17 MINNE-GW-TW11-011018 0.11832	06-Feb-18	14:41:06
22	180206M1_22	1800100-18 MINNE-GW-TW17-011018 0.11988	06-Feb-18	14:52:37
23	180206M1_23	1800100-19 MINNE-GW-TW18-011018 0.11609	06-Feb-18	15:04:03
24	180206M1_24	B8A0162-MS1 Matrix Spike 0.12293	06-Feb-18	15:15:30
25	180206M1_25	B8A0162-MSD1 Matrix Spike Dup 0.12128	06-Feb-18	15:26:57
26	180206M1_26	B8A0162-MS2 Matrix Spike 0.11755	06-Feb-18	15:38:23
27	180206M1_27	B8A0162-MSD2 Matrix Spike Dup 0.12186	06-Feb-18	15:49:51
28	180206M1_28	1800177-06 YEAGR-06-SW01-011718 0.12192	06-Feb-18	16:01:17
29	180206M1_29	no data		
30	180206M1_30	1800195-03 PITTS-GW-DUP01-011618 0.12017	06-Feb-18	16:12:44
31	180206M1_31	IPA	06-Feb-18	16:24:14

Dataset: Untitled

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Compound name: PFBA

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32	180206M1_32	ST180206M1-3 PFC CS3 18A3012	06-Feb-18	16:35:41
33	180206M1_33	IPA	06-Feb-18	16:47:08
34	180206M1_34	1800195-04 PITTS-GW-TW01B-011618 0.11986	06-Feb-18	16:58:35
35	180206M1_35	1800195-05 PITTS-GW-TW03-011718 0.12099	06-Feb-18	17:10:04
36	180206M1_36	1800195-06 PITTS-GW-TW07-011718 0.12041	06-Feb-18	17:21:34
37	180206M1_37	no data		
38	180206M1_38	1800195-07 PITTS-GW-TW13-011618 0.12	06-Feb-18	17:33:03
39	180206M1_39	1800195-08 PITTS-GW-TW15-011618 0.12086	06-Feb-18	17:44:33
40	180206M1_40	1800195-09 PITTS-GW-TW16-011618 0.11819	06-Feb-18	17:56:01
41	180206M1_41	1800195-10 PITTS-GW-TW17-011618 0.11997	06-Feb-18	18:07:31
42	180206M1_42	1800195-11 PITTS-GW-TW18-011618 0.12121	06-Feb-18	18:19:02
43	180206M1_43	1800177-06@5X YEAGR-06-SW01-011718 0.1...	06-Feb-18	18:30:28
44	180206M1_44	B8A0162-MS1@5X Matrix Spike 0.12293	06-Feb-18	18:41:55
45	180206M1_45	B8A0162-MSD1@5X Matrix Spike Dup 0.12128	06-Feb-18	18:53:22
46	180206M1_46	1800195-06@5X PITTS-GW-TW07-011718 0.1...	06-Feb-18	19:04:49
47	180206M1_47	B8A0162-MS2@5X Matrix Spike 0.11755	06-Feb-18	19:16:15
48	180206M1_48	1702193-01 921691257 3	06-Feb-18	20:13:42
49	180206M1_49	B8A0172-MS1@5X Matrix Spike 0.119	06-Feb-18	20:25:06
50	180206M1_50	B8A0172-MSD1@5X Matrix Spike Dup 0.11886	06-Feb-18	20:36:33
51	180206M1_51	1800180-10@5X YEAGR-GW-DUP01-011918 0...	06-Feb-18	20:48:03
52	180206M1_52	1800180-11@5X YEAGR-GW-ML-FL014-MW0...	06-Feb-18	20:59:31
53	180206M1_53	IPA	06-Feb-18	21:11:00
54	180206M1_54	1800180-17 YEAGR-09-SW01-012018 0.1174	06-Feb-18	21:22:30
55	180206M1_55	B8B0018-BS1 OPR 3	06-Feb-18	21:33:59
56	180206M1_56	B8B0018-BLK1 Method Blank 3	06-Feb-18	21:45:30
57	180206M1_57	1800219-01 Kenneth Kolker 3	06-Feb-18	21:56:59
58	180206M1_58	B8B0017-BS1 OPR 0.25	06-Feb-18	22:08:26
59	180206M1_59	B8B0017-BSD1 LCSD 0.25	06-Feb-18	22:19:56
60	180206M1_60	B8B0017-BLK1 Method Blank 0.25	06-Feb-18	22:31:25
61	180206M1_61	1800186-01RE1 REEPDW132 0.11965	06-Feb-18	22:42:55
62	180206M1_62	1800186-02RE1 REEPDW133 0.11325	06-Feb-18	22:54:22
63	180206M1_63	1800186-03RE1 REEPDW134 0.12036	06-Feb-18	23:05:52
64	180206M1_64	1800218-01 BZ79699 0.26192	06-Feb-18	23:17:19
65	180206M1_65	1800218-02 BZ79700 0.25325	06-Feb-18	23:28:46

(A) RI. AC 2/7/18

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Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Compound name: PFBA

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67	180206M1_67	ST180206M1-5 PFC CS0 18A3009	06-Feb-18	23:51:40
68	180206M1_68	IPA	07-Feb-18	00:03:06
69	180206M1_69	1800225-01 WT1801251435MK 0.26369	07-Feb-18	00:14:36
70	180206M1_70	1800225-02 FB1801251440MK 0.25785	07-Feb-18	00:26:05
71	180206M1_71	1800225-03 WT1801251450MK 0.26447	07-Feb-18	00:37:34
72	180206M1_72	1800225-04 WSOFT1801251520MK 0.26174	07-Feb-18	00:49:03
73	180206M1_73	1800225-05 WR1801251535MK 0.26502	07-Feb-18	01:00:33
74	180206M1_74	1800235-01 SW1801230935JLB 0.25866	07-Feb-18	01:12:00
75	180206M1_75	1800235-03 SW1801231035JLB 0.25488	07-Feb-18	01:23:29
76	180206M1_76	1800245-01 GW1923180125RAP 0.26309	07-Feb-18	01:34:56
77	180206M1_77	1800245-02 GW2933180125RAP 0.24912	07-Feb-18	01:46:23
78	180206M1_78	1800245-03 GW3943180125RAP 0.24954	07-Feb-18	01:57:50
79	180206M1_79	IPA	07-Feb-18	02:09:20
80	180206M1_80	ST180206M1-6 PFC CS3 18A3012	07-Feb-18	02:20:49
81	180206M1_81	IPA	07-Feb-18	02:32:19
82	180206M1_82	B8A0167-BS1 OPR 0.125	07-Feb-18	02:43:48
83	180206M1_83	B8A0167-BSD1 LCSD 0.125	07-Feb-18	02:55:18
84	180206M1_84	B8A0167-BLK1 Method Blank 0.125	07-Feb-18	03:06:44
85	180206M1_85	1800156-09 MINNE-06-SW01-011718 0.12113	07-Feb-18	03:18:14
86	180206M1_86	1800156-10 MINNE-GW-DUP02-011218 0.12287	07-Feb-18	03:29:43
87	180206M1_87	1800156-11 MINNE-GW-TW01A-011218 0.12321	07-Feb-18	03:41:10
88	180206M1_88	1800159-12 MINNE-GW-TW10-011718 0.1059	07-Feb-18	03:52:37
89	180206M1_89	1800178-12 YEAGR-SW-DUP01-011718 0.12161	07-Feb-18	04:04:04
90	180206M1_90	1800179-12 YEAGR-GW-BW02-011918 0.11851	07-Feb-18	04:15:30
91	180206M1_91	IPA	07-Feb-18	04:26:57
92	180206M1_92	ST180206M1-7 PFC CS3 18A3012	07-Feb-18	04:38:27
93	180206M1_93	IPA	07-Feb-18	04:49:56
94	180206M1_94	B8A0197-BS1 OPR 1	07-Feb-18	05:01:25
95	180206M1_95	B8A0197-BLK1 Method Blank 1	07-Feb-18	05:12:54
96	180206M1_96	B8A0197-MS1 Matrix Spike 1.27	07-Feb-18	05:24:25
97	180206M1_97	B8A0197-MSD1 Matrix Spike Dup 1.21	07-Feb-18	05:35:54
98	180206M1_98	1800140-01 FT-SS501-0001 1.23	07-Feb-18	05:47:24
99	180206M1_99	1800140-02 FT-SS502-0001 1.17	07-Feb-18	05:58:52

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Compound name: PFBA

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101	180206M1_101	1800140-04 FT-SB504-2022 1.26	07-Feb-18	06:21:51
102	180206M1_102	1800140-05 FT-SB505-1618 1.21	07-Feb-18	06:33:20
103	180206M1_103	1800140-06 FT-SB506-2022 1.26	07-Feb-18	06:44:47
104	180206M1_104	1800140-07 FT-SB507-1819 1.27	07-Feb-18	06:56:17
105	180206M1_105	1800140-08 FT-SB508-1617 1.23	07-Feb-18	07:07:44
106	180206M1_106	1800140-09 FT-SB509-1718 1.33	07-Feb-18	07:19:10
107	180206M1_107	1800140-10 FT-SB510-0910 1.16	07-Feb-18	07:30:38
108	180206M1_108	IPA	07-Feb-18	07:42:05
109	180206M1_109	ST180206M1-8 PFC CS3 18A3012	07-Feb-18	07:53:31
110	180206M1_110	IPA	07-Feb-18	08:04:58
111	180206M1_111	1800140-11 FT-SB510-1415 1.22	07-Feb-18	08:16:25
112	180206M1_112	1800140-12 FT-SB511-1617 1.24	07-Feb-18	08:27:54
113	180206M1_113	1800140-13 FT-SS512-0001 1.2	07-Feb-18	08:39:24
114	180206M1_114	1800140-14 FT-SB512-0708 1.22	07-Feb-18	08:50:54
115	180206M1_115	1800140-15 FT-SB512-2223 1.2	07-Feb-18	09:02:22
116	180206M1_116	1800140-16 FT-SS513-0001 1.19	07-Feb-18	09:13:52
117	180206M1_117	1800140-17 FT-SB513-1819 1.22	07-Feb-18	09:25:21
118	180206M1_118	1800140-18 FT-Dup01-20180116 1.2	07-Feb-18	09:36:51
119	180206M1_119	1800140-19 FT-Dup02-20180117 1.21	07-Feb-18	09:48:20
120	180206M1_120	IPA	07-Feb-18	09:59:50
121	180206M1_121	ST180206M1-9 PFC CS3 18A3012	07-Feb-18	10:11:19
122	180206M1_122	IPA	07-Feb-18	10:22:48

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

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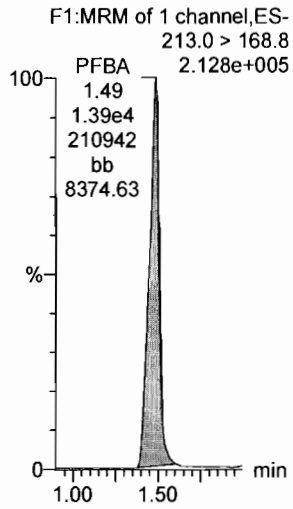
Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFBA



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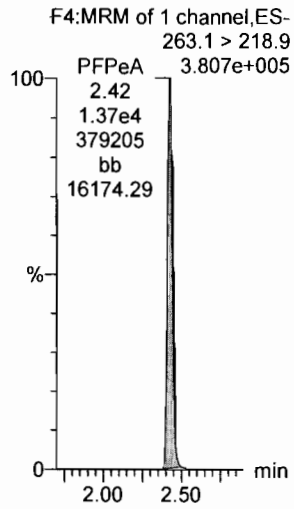

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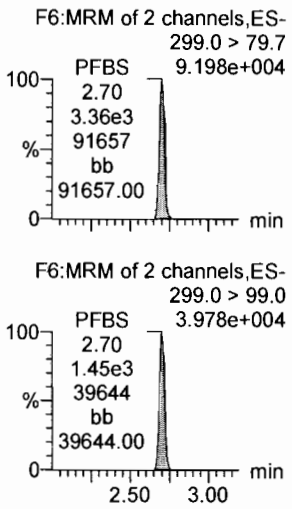

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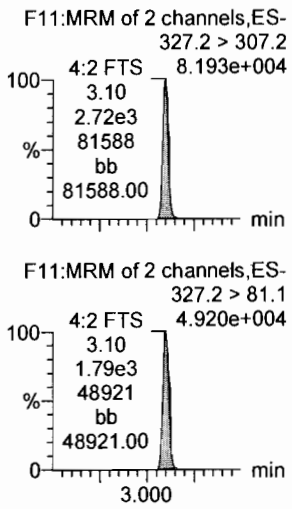

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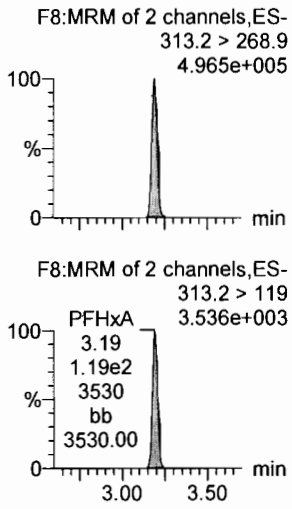

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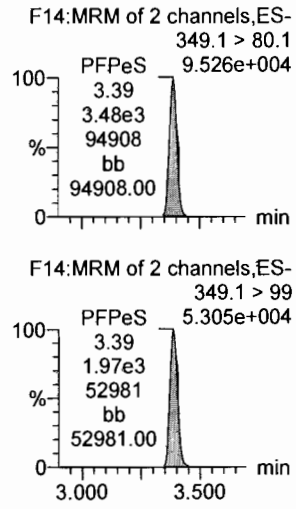

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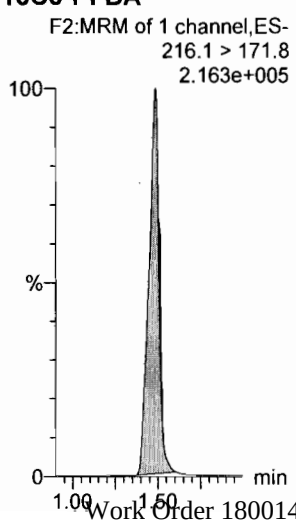

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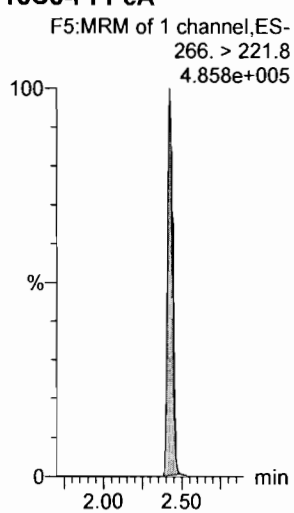

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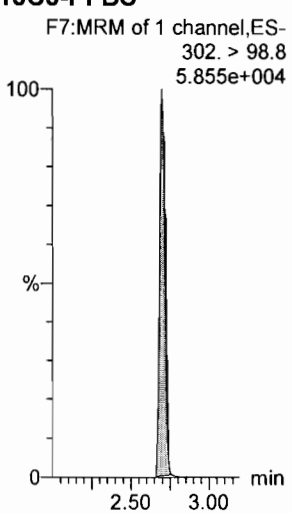

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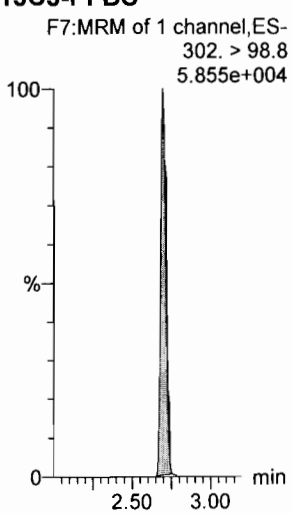

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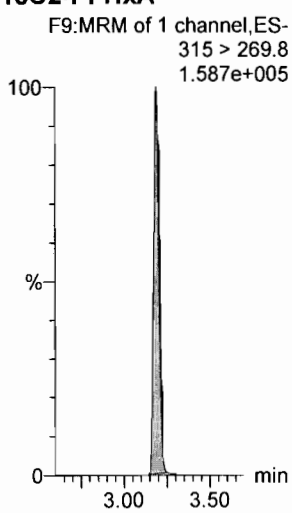

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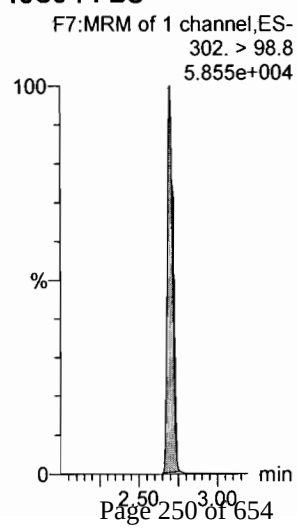

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Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time
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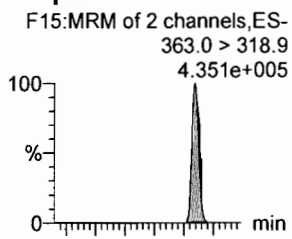
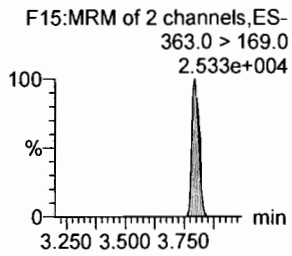
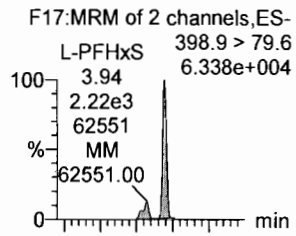
Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

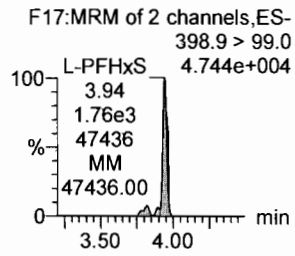
PFHpA



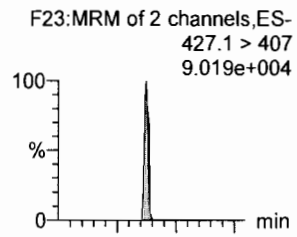


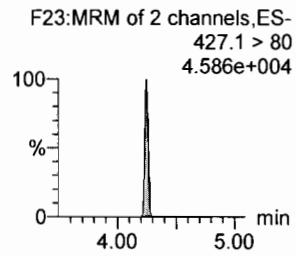
L-PFHxS





6:2 FTS





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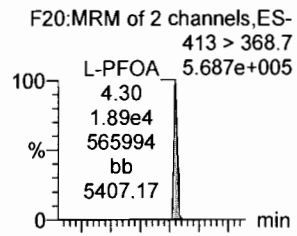

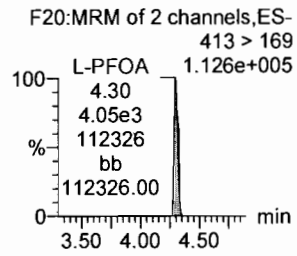

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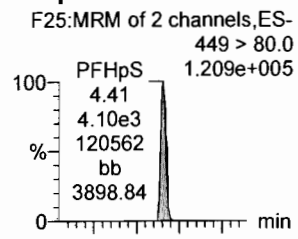

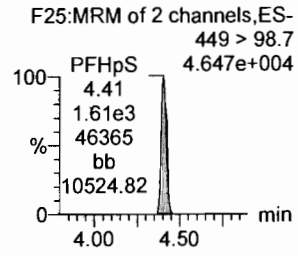

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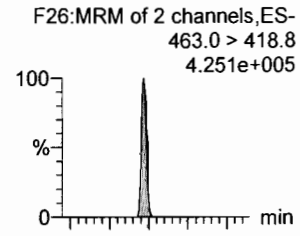
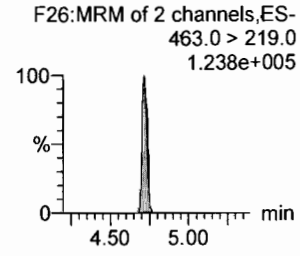
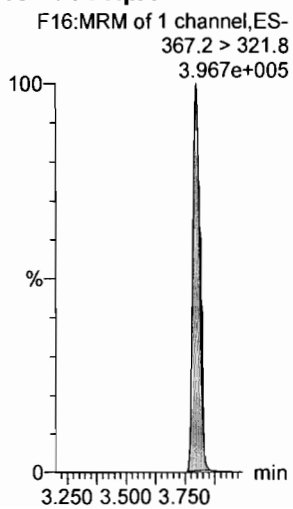
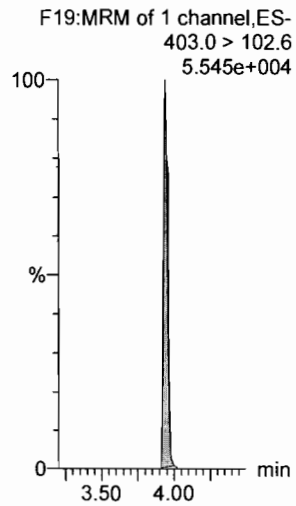




13C4-PFHpA



18O2-PFHxS



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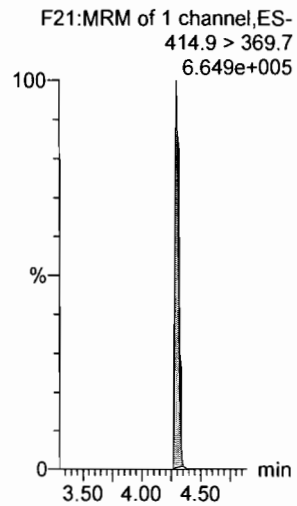

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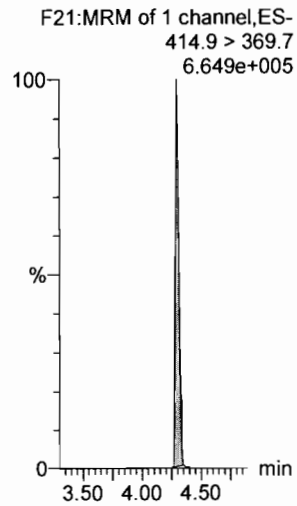

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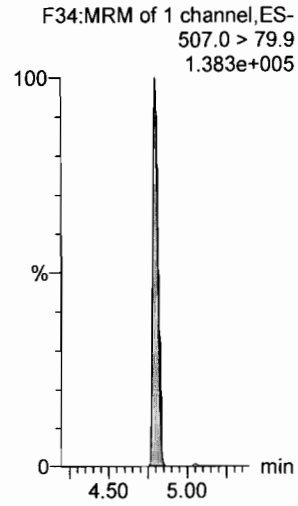

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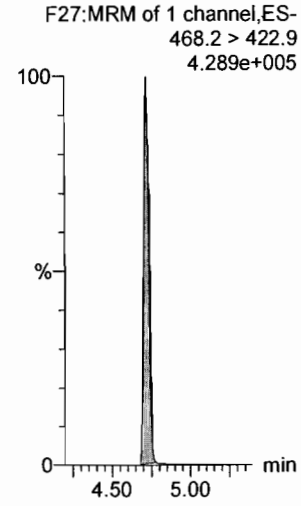

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Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

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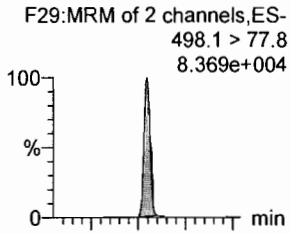

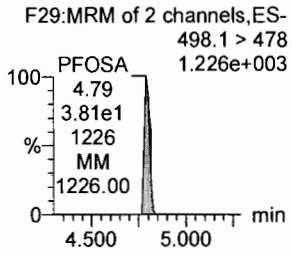

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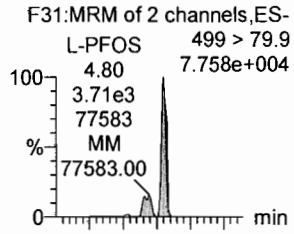

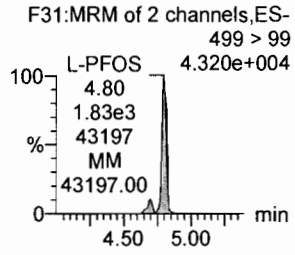

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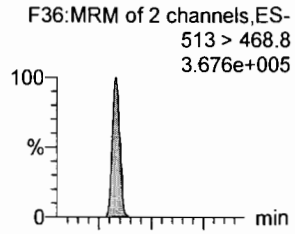

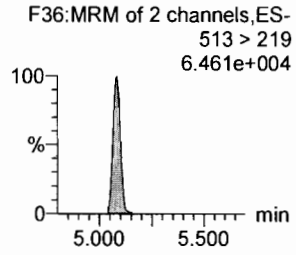

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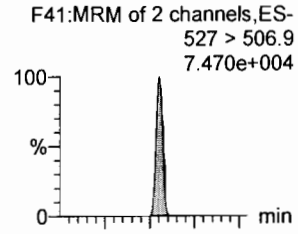

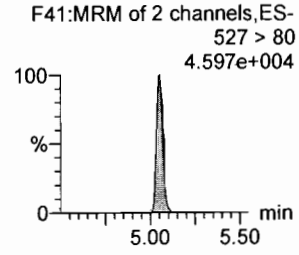

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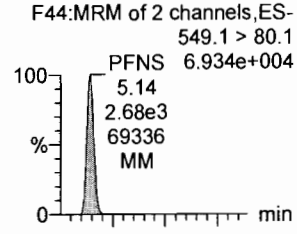

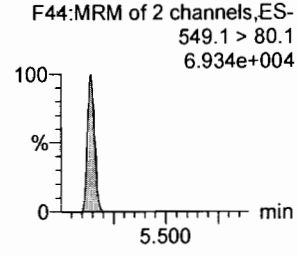

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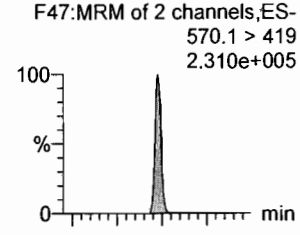

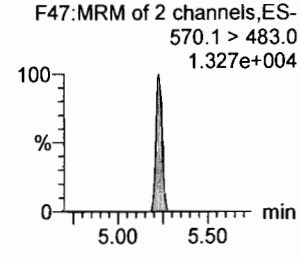

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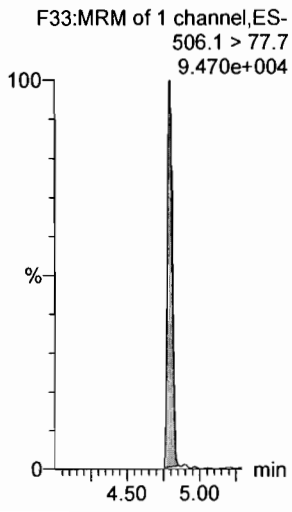

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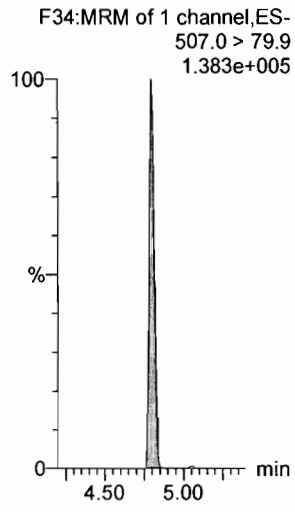

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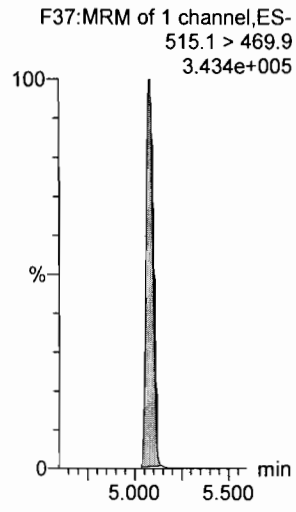

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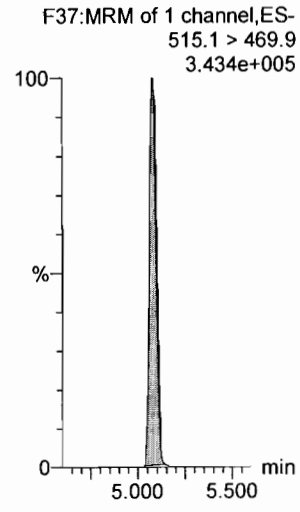

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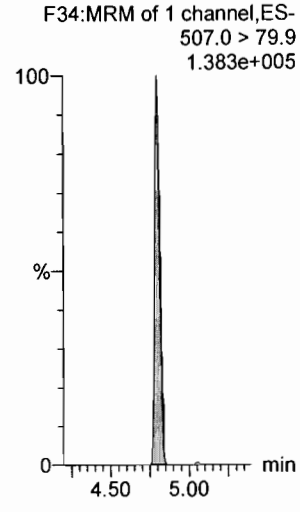

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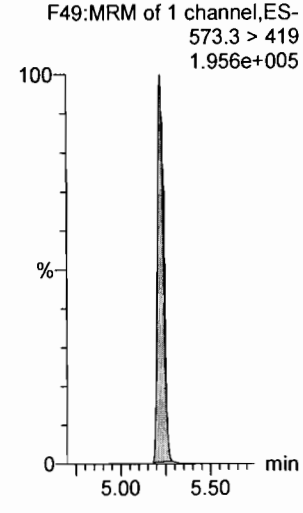

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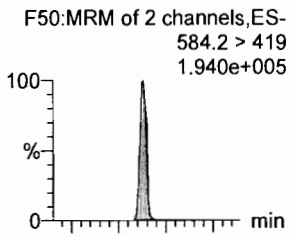

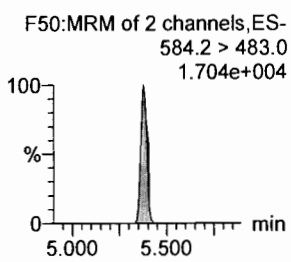

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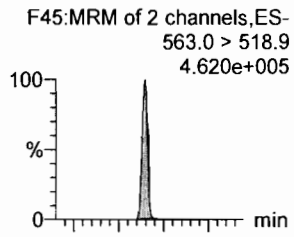

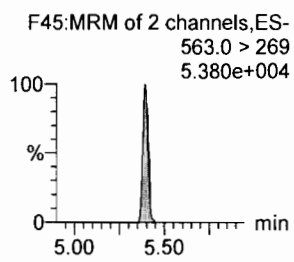

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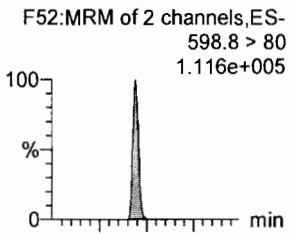

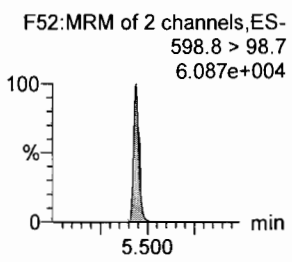

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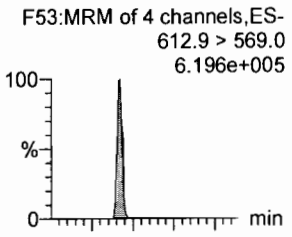

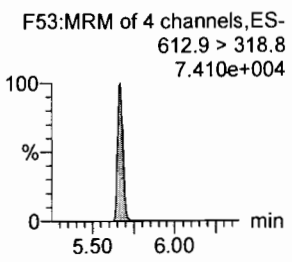

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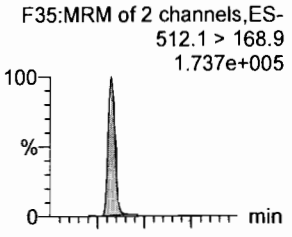

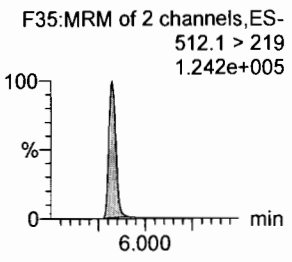

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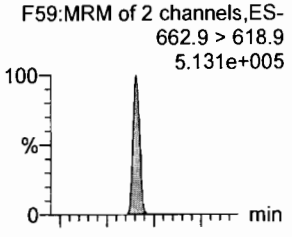
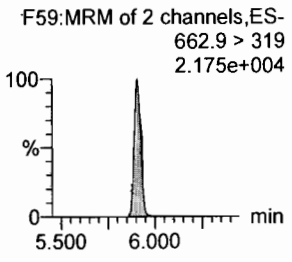
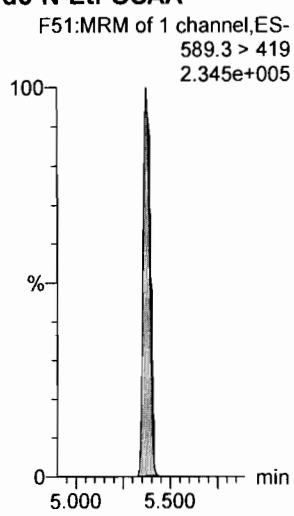




d5-N-EtFOSAA



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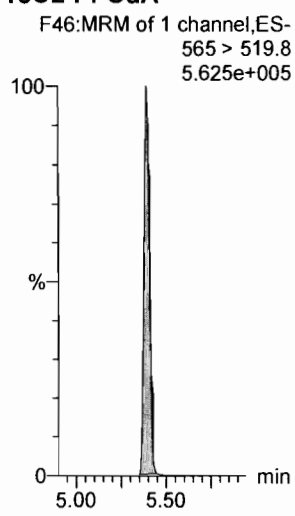

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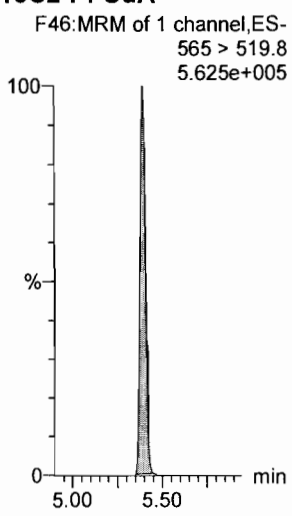

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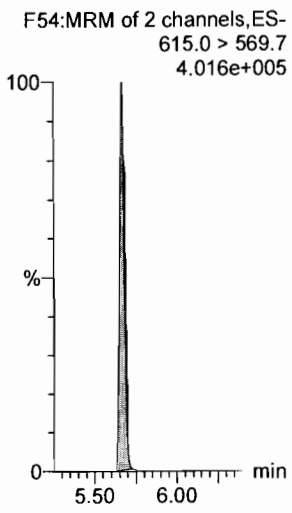

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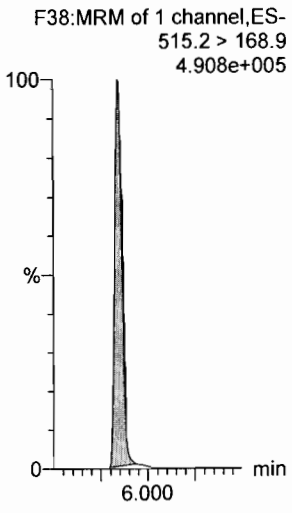

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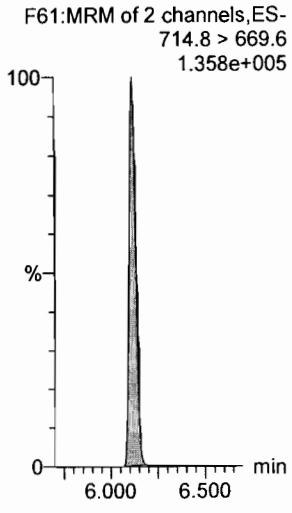

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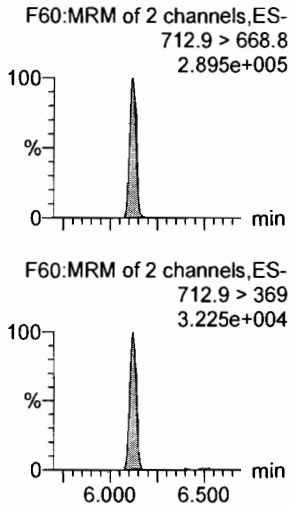

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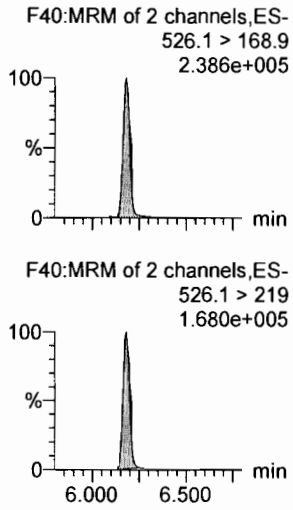

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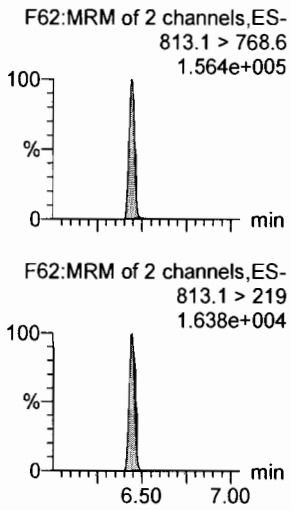

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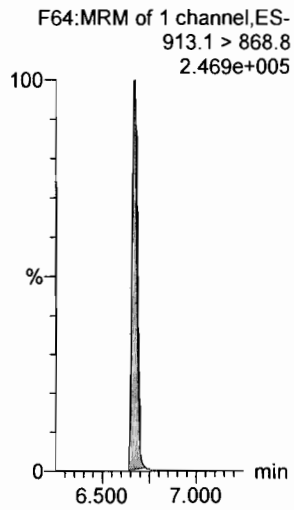

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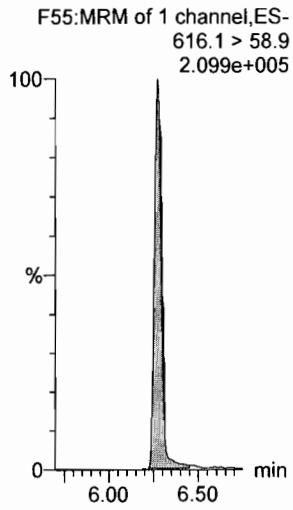

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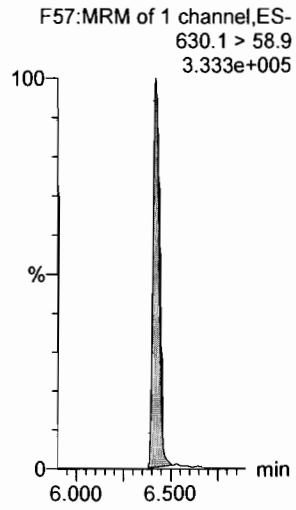

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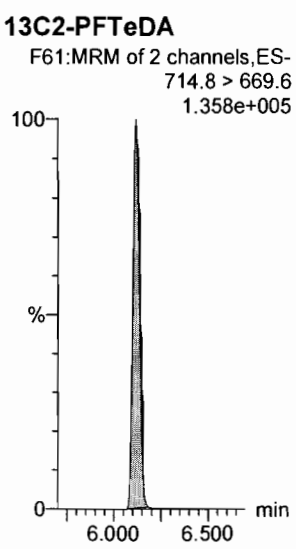

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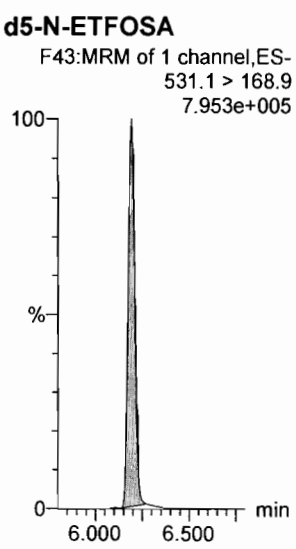
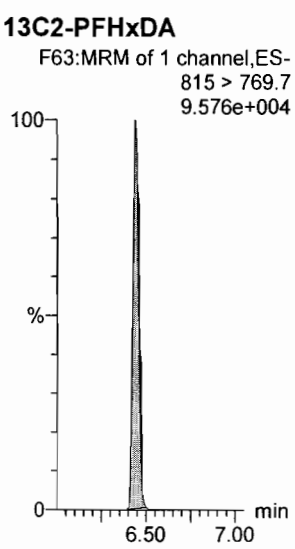
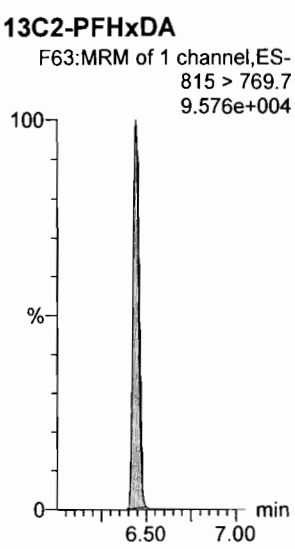


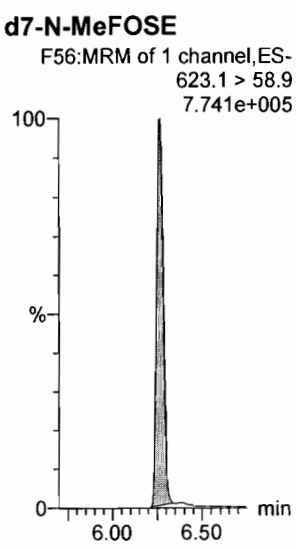
13C2-PFHxDA



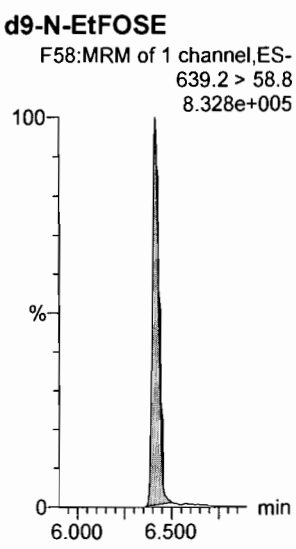
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE

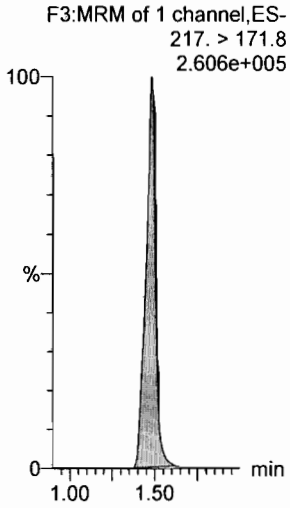


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

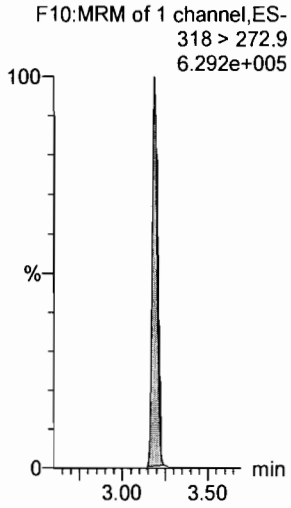
Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

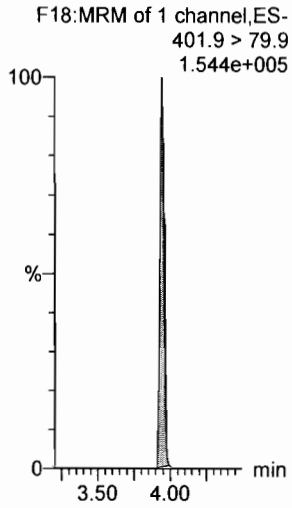
13C4-PFBA



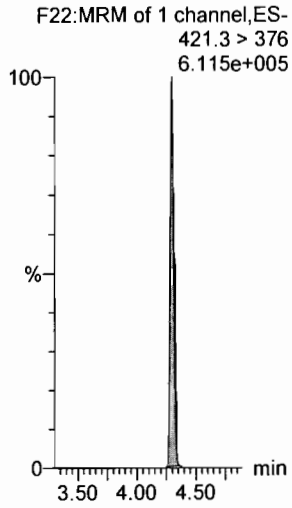
13C5-PFHxA



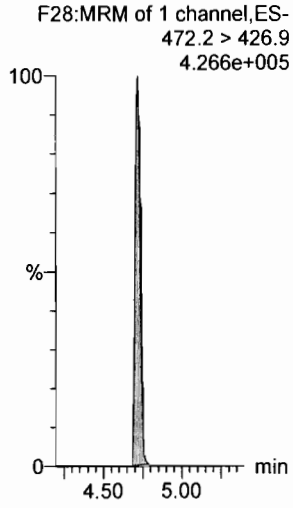
13C3-PFHxS



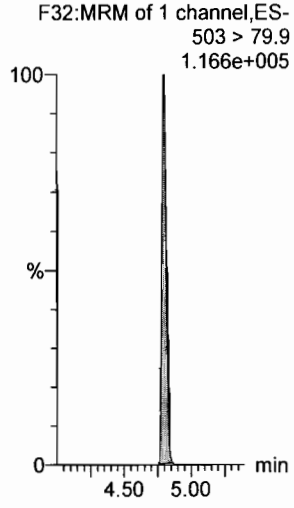
13C8-PFOA



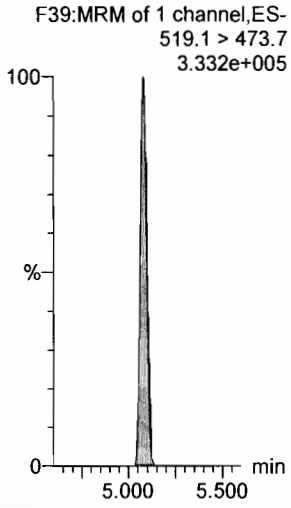
13C9-PFNA



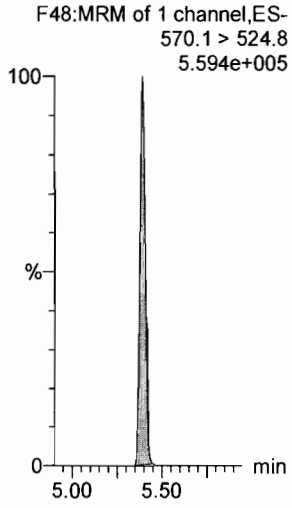
13C4-PFOS



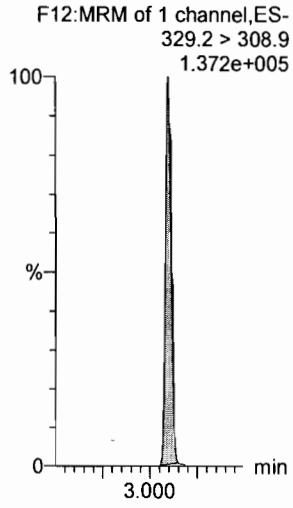
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



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Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Ⓐ = PFDS <70%.
Ⓑ = 13C2-PFDoA >150%.

AD 2/7/18
JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.34e4	1.45e4		1.0000	1.46	1.49	11.6	10.56	105.6
2	2	PFPeA	263.1 > 218.9	1.44e4	1.90e4		1.0000	2.42	2.42	9.52	9.767	97.7
3	3	PFBS	299.0 > 79.7	3.30e3	2.38e3		1.0000	2.69	2.70	17.4	9.180	91.8
4	4	4:2 FTS	327.2>307.2	2.85e3	2.38e3		1.0000	3.10	3.10	15.0	8.961	89.6
5	5	PFHxA	313.2 > 268.9	1.84e4	4.88e3		1.0000	3.19	3.19	18.8	12.46	124.6
6	6	PFPeS	349.1>80.1	3.09e3	2.38e3		1.0000	3.39	3.38	16.3	8.283	82.8
7	7	PFHpA	363.0 > 318.9	1.51e4	1.47e4		1.0000	3.81	3.79	12.8	10.33	103.3
8	8	L-PFHxS	398.9 > 79.6	2.51e3	1.42e3		1.0000	3.96	3.94	22.1	12.01	120.1
9	10	6:2 FTS	427.1 > 407	3.55e3	1.76e4		1.0000	4.28	4.24	2.52	9.760	97.6
10	11	L-PFOA	413 > 368.7	1.45e4	1.76e4		1.0000	4.33	4.29	10.3	10.80	108.0
11	13	PFHpS	449 > 80.0	4.25e3	4.71e3		1.0000	4.44	4.40	11.3	9.879	98.8
12	14	PFNA	463.0 > 418.8	1.63e4	1.68e4		1.0000	4.76	4.71	12.1	9.849	98.5
13	15	PFOSA	498.1 > 77.8	2.99e3	3.04e3		1.0000	4.83	4.79	12.3	11.55	115.5
14	16	L-PFOS	499 > 79.9	4.15e3	4.71e3		1.0000	4.84	4.79	11.0	9.846	98.5
15	18	PFDA	513 > 468.8	1.47e4	1.59e4		1.0000	5.14	5.07	11.6	9.371	93.7
16	19	8:2 FTS	527 > 506.9	3.44e3	1.76e4		1.0000	5.12	5.04	2.44	10.61	106.1
17	20	PFNS	549.1>80.1	3.58e3	4.71e3		1.0000	5.20	5.13	9.49	11.12	111.2
18	21	N-MeFOSAA	570.1 > 419	8.03e3	7.12e3		1.0000	5.29	5.22	14.1	10.45	104.5
19	22	N-EtFOSAA	584.2 > 419	6.44e3	6.39e3		1.0000	5.45	5.37	12.6	11.81	118.1
20	23	PFUdA	563.0 > 518.9	1.91e4	1.95e4		1.0000	5.46	5.38	12.3	11.84	118.4
21	24	PFDS	598.8 > 80	4.05e3	1.65e4		1.0000	5.51	5.43	3.07	6.581	65.8 Ⓐ
22	25	PFDoA	612.9 > 569.0	1.51e4	1.65e4		1.0000	5.74	5.66	11.4	7.441	74.4
23	26	N-MeFOSA	512.1 > 168.9	7.38e3	2.11e4		1.0000	5.84	5.82	52.5	57.68	115.4
24	27	PFTrDA	662.9 > 618.9	1.60e4	3.97e3		1.0000	5.98	5.89	50.3	12.95	129.5
25	28	PFTeDA	712.9 > 668.8	9.02e3	3.97e3		1.0000	6.20	6.11	28.4	13.00	130.0
26	29	N-EtFOSA	526.1 > 168.9	9.48e3	3.16e4		1.0000	6.22	6.17	45.0	49.56	99.1
27	30	PFHxDA	813.1 > 768.6	4.57e3	3.74e3		1.0000	6.51	6.43	6.11	8.360	83.6
28	31	PFODA	913.1 > 868.8	7.73e3	3.74e3		1.0000	6.74	6.66	10.3	11.16	111.6
29	32	N-MeFOSE	616.1 > 58.9	8.26e3	2.63e4		1.0000	6.31	6.26	47.1	47.05	94.1
30	33	N-EtFOSE	630.1 > 58.9	1.15e4	2.65e4		1.0000	6.45	6.42	65.1	55.87	111.7
31	34	13C3-PFBA	216.1 > 171.8	1.45e4	1.70e4	0.876	1.0000	1.46	1.49	10.6	12.15	97

70-130%.

50-150%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.90e4	2.10e4	0.868	1.0000	2.42	2.42	11.3	13.02	104.2
33	36	13C3-PFBS	302. > 98.8	2.38e3	2.10e4	0.109	1.0000	2.69	2.70	1.42	12.98	103.9
34	37	13C2-PFHxA	315 > 269.8	4.88e3	2.10e4	0.694	1.0000	3.19	3.19	2.91	4.193	83.9
35	38	13C4-PFHpA	367.2 > 321.8	1.47e4	2.10e4	0.694	1.0000	3.81	3.79	8.79	12.65	101.2
36	39	18O2-PFHxS	403.0 > 102.6	1.42e3	4.43e3	0.350	1.0000	3.96	3.94	4.00	11.45	91.6
37	40	13C2-6:2 FTS	429.1 > 408.9	4.31e3	1.83e4	0.242	1.0000	4.28	4.24	2.95	12.15	97.2
38	41	13C2-PFOA	414.9 > 369.7	1.76e4	1.83e4	1.069	1.0000	4.33	4.29	12.0	11.25	90.0
39	42	13C5-PFNA	468.2 > 422.9	1.68e4	2.18e4	0.929	1.0000	4.76	4.71	9.61	10.34	82.7
40	43	13C8-PFOSA	506.1 > 77.7	3.04e3	1.66e4	0.226	1.0000	4.83	4.79	2.29	10.15	81.2
41	44	13C8-PFOS	507.0 > 79.9	4.71e3	4.06e3	1.041	1.0000	4.84	4.79	14.5	13.94	111.5
42	45	13C2-PFDA	515.1 > 469.9	1.59e4	1.34e4	1.217	1.0000	5.14	5.07	14.8	12.13	97.1
43	46	13C2-8:2 FTS	529.1 > 508.7	2.57e3	2.10e4	0.131	1.0000	5.12	5.04	1.53	11.66	93.3
44	47	d3-N-MeFOSAA	573.3 > 419	7.12e3	1.66e4	0.432	1.0000	5.29	5.21	5.36	12.40	99.2
45	48	d5-N-EtFOSAA	589.3 > 419	6.39e3	1.66e4	0.476	1.0000	5.45	5.36	4.81	10.11	80.9
46	49	13C2-PFUdA	565 > 519.8	1.95e4	1.66e4	0.969	1.0000	5.46	5.38	14.7	15.14	121.1
47	50	13C2-PFDoA	615.0 > 569.7	1.65e4	1.66e4	0.605	1.0000	5.74	5.66	12.4	20.52	164.1
48	51	d3-N-MeFOSA	515.2 > 168.9	2.11e4	1.66e4	0.116	1.0000	5.84	5.84	15.9	137.6	91.7
49	52	13C2-PFTeDA	714.8 > 669.6	3.97e3	1.66e4	0.331	1.0000	6.20	6.11	2.99	9.026	72.2
50	53	d5-N-ETFOSA	531.1 > 168.9	3.16e4	1.66e4	0.171	1.0000	6.22	6.18	23.8	138.8	92.6
51	54	13C2-PFHxDA	815 > 769.7	3.74e3	1.66e4	0.577	1.0000	6.51	6.43	2.82	4.885	97.7
52	55	d7-N-MeFOSE	623.1 > 58.9	2.63e4	1.66e4	0.152	1.0000	6.31	6.26	19.8	130.4	86.9
53	56	d9-N-EtFOSE	639.2 > 58.8	2.65e4	1.66e4	0.142	1.0000	6.45	6.41	20.0	140.5	93.6
54	57	13C4-PFBA	217. > 171.8	1.70e4	1.70e4	1.000	1.0000	1.46	1.49	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	2.10e4	2.10e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	4.43e3	4.43e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.83e4	1.83e4	1.000	1.0000	4.33	4.29	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	2.18e4	2.18e4	1.000	1.0000	4.70	4.71	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.06e3	4.06e3	1.000	1.0000	4.84	4.79	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.34e4	1.34e4	1.000	1.0000	5.14	5.07	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.66e4	1.66e4	1.000	1.0000	5.46	5.38	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.41e3	2.10e4	0.287	1.0000	3.10	3.09	2.63	9.158	73.3

50-150%.

50-150%.

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Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180206M1_1	IPA	06-Feb-18	10:56:05
2	180206M1_2	CS3 TESTER	06-Feb-18	11:07:35
3	180206M1_3	IPA	06-Feb-18	11:19:04
4	180206M1_4	ST180206M1-1 PFC CS0 18A3009	06-Feb-18	11:30:34
5	180206M1_5	B8A0172-BS1 OPR 0.125	06-Feb-18	11:41:58
6	180206M1_6	B8A0172-BLK1 Method Blank 0.125	06-Feb-18	11:53:25
7	180206M1_7	1800180-07 YEAGR-EB-02-012018 0.11998	06-Feb-18	12:04:52
8	180206M1_8	B8A0166-BS1 OPR 0.25	06-Feb-18	12:16:19
9	180206M1_9	IPA	06-Feb-18	12:27:46
10	180206M1_10	ST180206M1-2 PFC CS3 18A3012	06-Feb-18	12:39:16
11	180206M1_11	IPA	06-Feb-18	12:50:42
12	180206M1_12	B8A0155-BS1 OPR 0.125	06-Feb-18	13:20:45
13	180206M1_13	B8A0155-BLK1 Method Blank 0.125	06-Feb-18	13:32:14
14	180206M1_14	B8A0155-MS1 Matrix Spike 0.1176	06-Feb-18	13:43:41
15	180206M1_15	B8A0155-MSD1 Matrix Spike Dup 0.11695	06-Feb-18	13:55:10
16	180206M1_16	1800100-09 MINNE-GW-TW12-010918 0.11992	06-Feb-18	14:06:41
17	180206M1_17	1800100-10 MINNE-GW-TW14-010918 0.11685	06-Feb-18	14:18:07
18	180206M1_18	1800100-11 MINNE-GW-TW15-010918 0.11738	06-Feb-18	14:29:37
19	180206M1_19	no data		
20	180206M1_20	no data		
21	180206M1_21	1800100-17 MINNE-GW-TW11-011018 0.11832	06-Feb-18	14:41:06
22	180206M1_22	1800100-18 MINNE-GW-TW17-011018 0.11988	06-Feb-18	14:52:37
23	180206M1_23	1800100-19 MINNE-GW-TW18-011018 0.11609	06-Feb-18	15:04:03
24	180206M1_24	B8A0162-MS1 Matrix Spike 0.12293	06-Feb-18	15:15:30
25	180206M1_25	B8A0162-MSD1 Matrix Spike Dup 0.12128	06-Feb-18	15:26:57
26	180206M1_26	B8A0162-MS2 Matrix Spike 0.11755	06-Feb-18	15:38:23
27	180206M1_27	B8A0162-MSD2 Matrix Spike Dup 0.12186	06-Feb-18	15:49:51
28	180206M1_28	1800177-06 YEAGR-06-SW01-011718 0.12192	06-Feb-18	16:01:17
29	180206M1_29	no data		
30	180206M1_30	1800195-03 PITTS-GW-DUP01-011618 0.12017	06-Feb-18	16:12:44
31	180206M1_31	IPA	06-Feb-18	16:24:14

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
32	180206M1_32	ST180206M1-3 PFC CS3 18A3012	06-Feb-18	16:35:41
33	180206M1_33	IPA	06-Feb-18	16:47:08
34	180206M1_34	1800195-04 PITTS-GW-TW01B-011618 0.11986	06-Feb-18	16:58:35
35	180206M1_35	1800195-05 PITTS-GW-TW03-011718 0.12099	06-Feb-18	17:10:04
36	180206M1_36	1800195-06 PITTS-GW-TW07-011718 0.12041	06-Feb-18	17:21:34
37	180206M1_37	no data		
38	180206M1_38	1800195-07 PITTS-GW-TW13-011618 0.12	06-Feb-18	17:33:03
39	180206M1_39	1800195-08 PITTS-GW-TW15-011618 0.12086	06-Feb-18	17:44:33
40	180206M1_40	1800195-09 PITTS-GW-TW16-011618 0.11819	06-Feb-18	17:56:01
41	180206M1_41	1800195-10 PITTS-GW-TW17-011618 0.11997	06-Feb-18	18:07:31
42	180206M1_42	1800195-11 PITTS-GW-TW18-011618 0.12121	06-Feb-18	18:19:02
43	180206M1_43	1800177-06@5X YEAGR-06-SW01-011718 0.1...	06-Feb-18	18:30:28
44	180206M1_44	B8A0162-MS1@5X Matrix Spike 0.12293	06-Feb-18	18:41:55
45	180206M1_45	B8A0162-MSD1@5X Matrix Spike Dup 0.12128	06-Feb-18	18:53:22
46	180206M1_46	1800195-06@5X PITTS-GW-TW07-011718 0.1...	06-Feb-18	19:04:49
47	180206M1_47	B8A0162-MS2@5X Matrix Spike 0.11755	06-Feb-18	19:16:15
48	180206M1_48	1702193-01 921691257 3	06-Feb-18	20:13:42
49	180206M1_49	B8A0172-MS1@5X Matrix Spike 0.119	06-Feb-18	20:25:06
50	180206M1_50	B8A0172-MSD1@5X Matrix Spike Dup 0.11886	06-Feb-18	20:36:33
51	180206M1_51	1800180-10@5X YEAGR-GW-DUP01-011918 0...	06-Feb-18	20:48:03
52	180206M1_52	1800180-11@5X YEAGR-GW-ML-FL014-MW0...	06-Feb-18	20:59:31
53	180206M1_53	IPA	06-Feb-18	21:11:00
54	180206M1_54	1800180-17 YEAGR-09-SW01-012018 0.1174	06-Feb-18	21:22:30
55	180206M1_55	B8B0018-BS1 OPR 3	06-Feb-18	21:33:59
56	180206M1_56	B8B0018-BLK1 Method Blank 3	06-Feb-18	21:45:30
57	180206M1_57	1800219-01 Kenneth Kolker 3	06-Feb-18	21:56:59
58	180206M1_58	B8B0017-BS1 OPR 0.25	06-Feb-18	22:08:26
59	180206M1_59	B8B0017-BSD1 LCSD 0.25	06-Feb-18	22:19:56
60	180206M1_60	B8B0017-BLK1 Method Blank 0.25	06-Feb-18	22:31:25
61	180206M1_61	1800186-01RE1 REEPDW132 0.11965	06-Feb-18	22:42:55
62	180206M1_62	1800186-02RE1 REEPDW133 0.11325	06-Feb-18	22:54:22
63	180206M1_63	1800186-03RE1 REEPDW134 0.12036	06-Feb-18	23:05:52
64	180206M1_64	1800218-01 BZ79699 0.26192	06-Feb-18	23:17:19
65	180206M1_65	1800218-02 BZ79700 0.25325	06-Feb-18	23:28:46

(A) RI. AC 2/7/18

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

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67	180206M1_67	ST180206M1-5 PFC CS0 18A3009	06-Feb-18	23:51:40
68	180206M1_68	IPA	07-Feb-18	00:03:06
69	180206M1_69	1800225-01 WT1801251435MK 0.26369	07-Feb-18	00:14:36
70	180206M1_70	1800225-02 FB1801251440MK 0.25785	07-Feb-18	00:26:05
71	180206M1_71	1800225-03 WT1801251450MK 0.26447	07-Feb-18	00:37:34
72	180206M1_72	1800225-04 WSOFT1801251520MK 0.26174	07-Feb-18	00:49:03
73	180206M1_73	1800225-05 WR1801251535MK 0.26502	07-Feb-18	01:00:33
74	180206M1_74	1800235-01 SW1801230935JLB 0.25866	07-Feb-18	01:12:00
75	180206M1_75	1800235-03 SW1801231035JLB 0.25488	07-Feb-18	01:23:29
76	180206M1_76	1800245-01 GW1923180125RAP 0.26309	07-Feb-18	01:34:56
77	180206M1_77	1800245-02 GW2933180125RAP 0.24912	07-Feb-18	01:46:23
78	180206M1_78	1800245-03 GW3943180125RAP 0.24954	07-Feb-18	01:57:50
79	180206M1_79	IPA	07-Feb-18	02:09:20
80	180206M1_80	ST180206M1-6 PFC CS3 18A3012	07-Feb-18	02:20:49
81	180206M1_81	IPA	07-Feb-18	02:32:19
82	180206M1_82	B8A0167-BS1 OPR 0.125	07-Feb-18	02:43:48
83	180206M1_83	B8A0167-BSD1 LCSD 0.125	07-Feb-18	02:55:18
84	180206M1_84	B8A0167-BLK1 Method Blank 0.125	07-Feb-18	03:06:44
85	180206M1_85	1800156-09 MINNE-06-SW01-011718 0.12113	07-Feb-18	03:18:14
86	180206M1_86	1800156-10 MINNE-GW-DUP02-011218 0.12287	07-Feb-18	03:29:43
87	180206M1_87	1800156-11 MINNE-GW-TW01A-011218 0.12321	07-Feb-18	03:41:10
88	180206M1_88	1800159-12 MINNE-GW-TW10-011718 0.1059	07-Feb-18	03:52:37
89	180206M1_89	1800178-12 YEAGR-SW-DUP01-011718 0.12161	07-Feb-18	04:04:04
90	180206M1_90	1800179-12 YEAGR-GW-BW02-011918 0.11851	07-Feb-18	04:15:30
91	180206M1_91	IPA	07-Feb-18	04:26:57
92	180206M1_92	ST180206M1-7 PFC CS3 18A3012	07-Feb-18	04:38:27
93	180206M1_93	IPA	07-Feb-18	04:49:56
94	180206M1_94	B8A0197-BS1 OPR 1	07-Feb-18	05:01:25
95	180206M1_95	B8A0197-BLK1 Method Blank 1	07-Feb-18	05:12:54
96	180206M1_96	B8A0197-MS1 Matrix Spike 1.27	07-Feb-18	05:24:25
97	180206M1_97	B8A0197-MSD1 Matrix Spike Dup 1.21	07-Feb-18	05:35:54
98	180206M1_98	1800140-01 FT-SS501-0001 1.23	07-Feb-18	05:47:24
99	180206M1_99	1800140-02 FT-SS502-0001 1.17	07-Feb-18	05:58:52

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Printed: Wednesday, February 07, 2018 10:43:15 Pacific Standard Time

Compound name: PFBA

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102	180206M1_102	1800140-05 FT-SB505-1618 1.21	07-Feb-18	06:33:20
103	180206M1_103	1800140-06 FT-SB506-2022 1.26	07-Feb-18	06:44:47
104	180206M1_104	1800140-07 FT-SB507-1819 1.27	07-Feb-18	06:56:17
105	180206M1_105	1800140-08 FT-SB508-1617 1.23	07-Feb-18	07:07:44
106	180206M1_106	1800140-09 FT-SB509-1718 1.33	07-Feb-18	07:19:10
107	180206M1_107	1800140-10 FT-SB510-0910 1.16	07-Feb-18	07:30:38
108	180206M1_108	IPA	07-Feb-18	07:42:05
109	180206M1_109	ST180206M1-8 PFC CS3 18A3012	07-Feb-18	07:53:31
110	180206M1_110	IPA	07-Feb-18	08:04:58
111	180206M1_111	1800140-11 FT-SB510-1415 1.22	07-Feb-18	08:16:25
112	180206M1_112	1800140-12 FT-SB511-1617 1.24	07-Feb-18	08:27:54
113	180206M1_113	1800140-13 FT-SS512-0001 1.2	07-Feb-18	08:39:24
114	180206M1_114	1800140-14 FT-SB512-0708 1.22	07-Feb-18	08:50:54
115	180206M1_115	1800140-15 FT-SB512-2223 1.2	07-Feb-18	09:02:22
116	180206M1_116	1800140-16 FT-SS513-0001 1.19	07-Feb-18	09:13:52
117	180206M1_117	1800140-17 FT-SB513-1819 1.22	07-Feb-18	09:25:21
118	180206M1_118	1800140-18 FT-Dup01-20180116 1.2	07-Feb-18	09:36:51
119	180206M1_119	1800140-19 FT-Dup02-20180117 1.21	07-Feb-18	09:48:20
120	180206M1_120	IPA	07-Feb-18	09:59:50
121	180206M1_121	ST180206M1-9 PFC CS3 18A3012	07-Feb-18	10:11:19
122	180206M1_122	IPA	07-Feb-18	10:22:48

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

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Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

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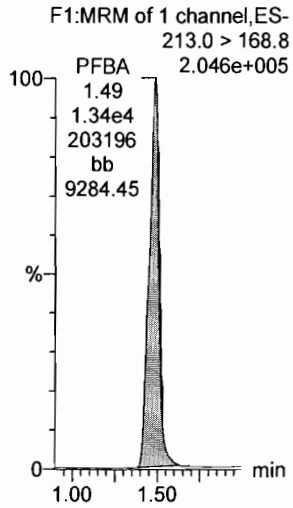

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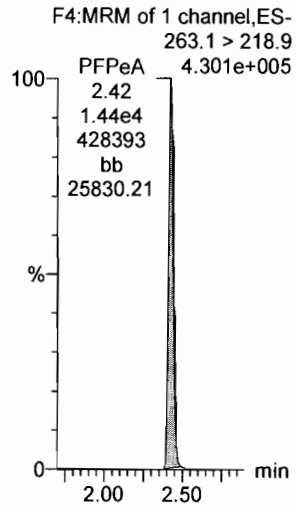

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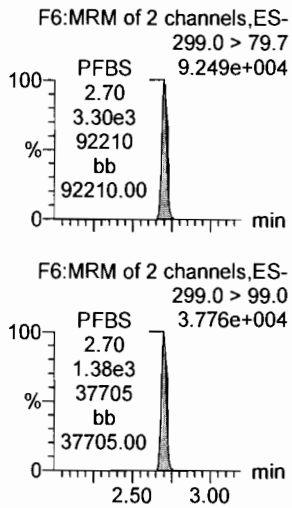

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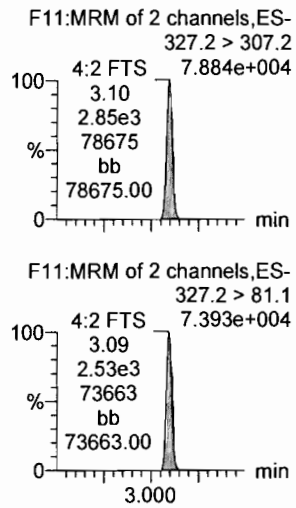

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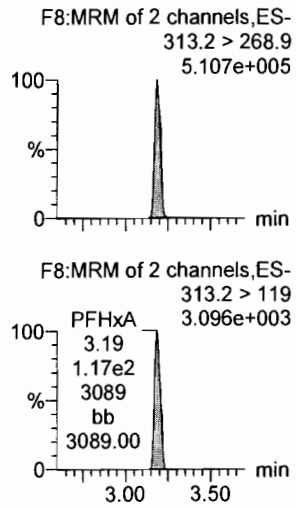

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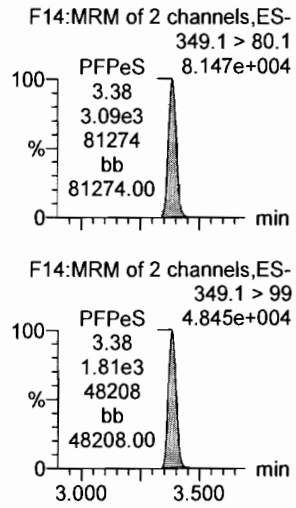

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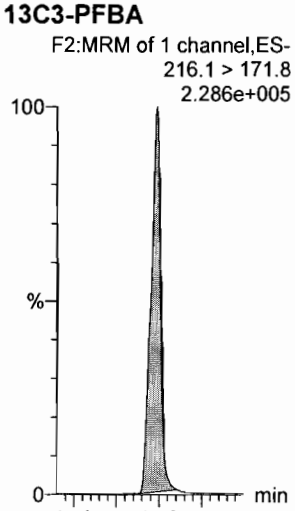

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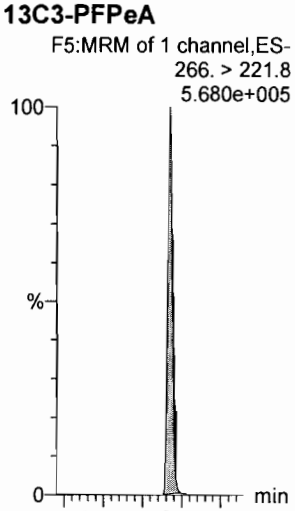

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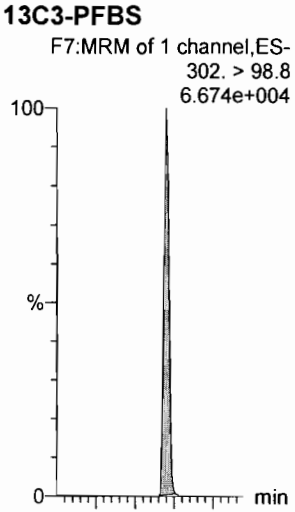

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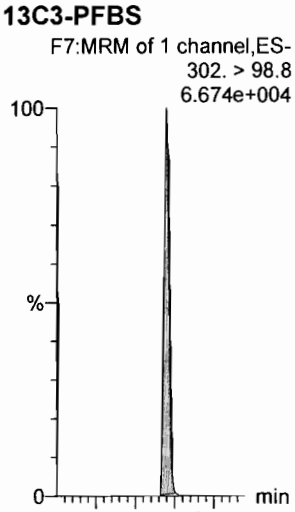

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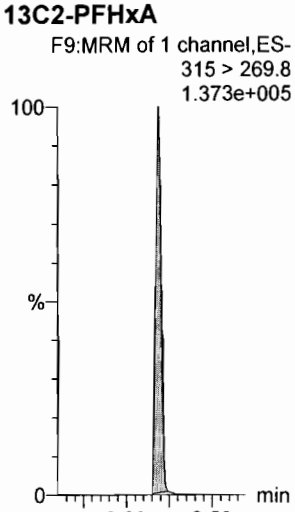

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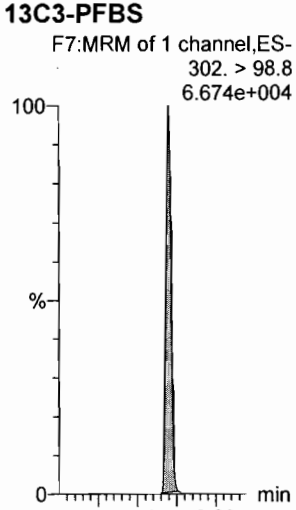

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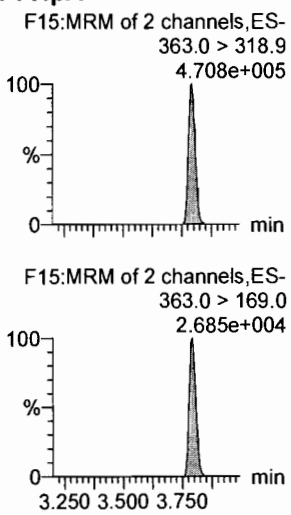
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFHpA



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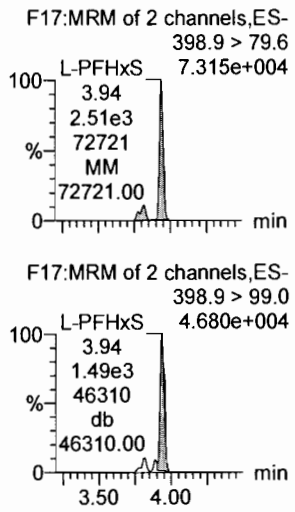

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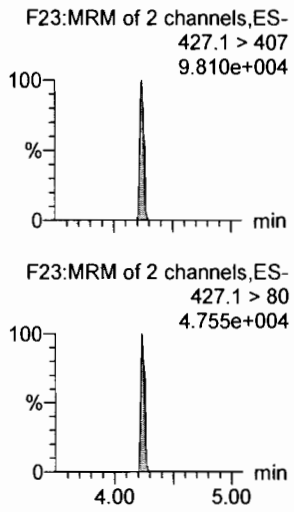

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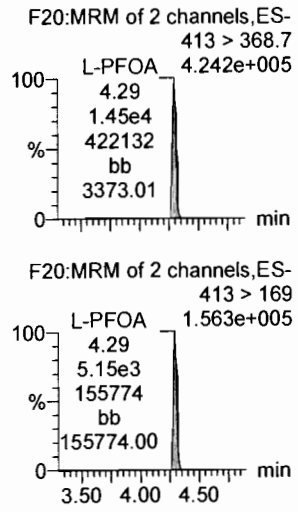

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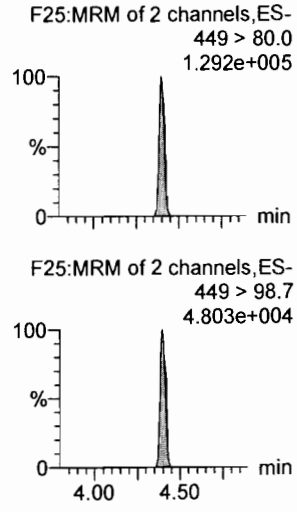

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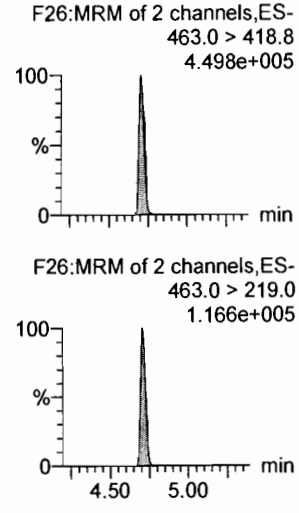

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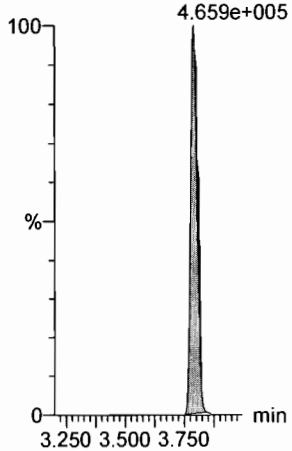

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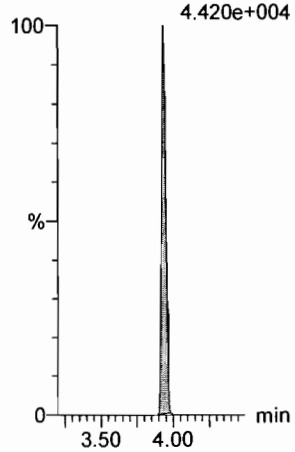

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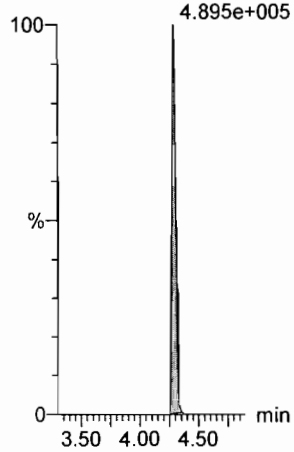

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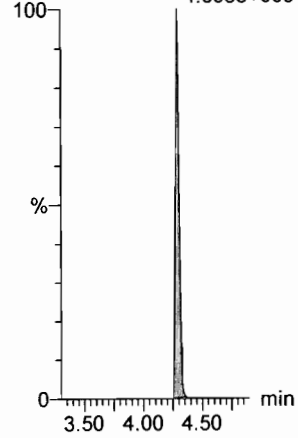

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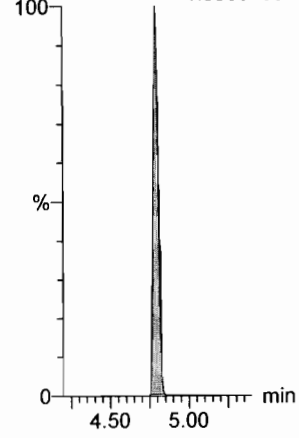

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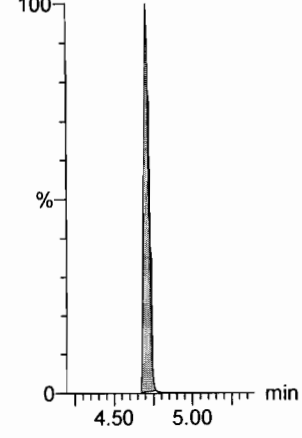

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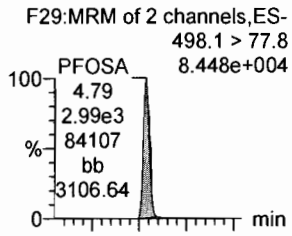
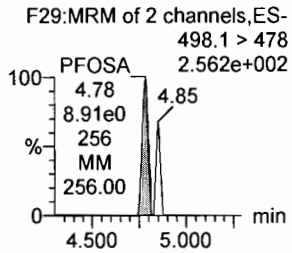
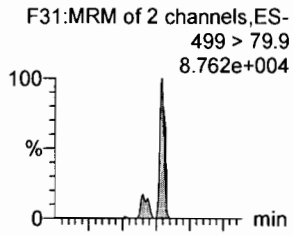
Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

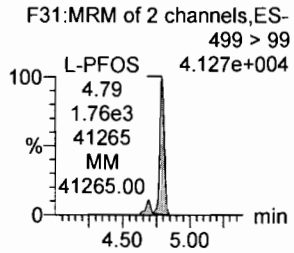
PFOSA





L-PFOS





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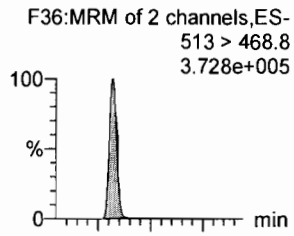

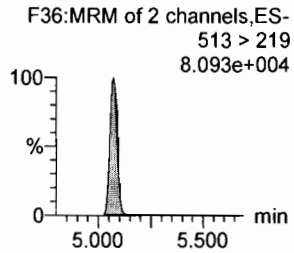

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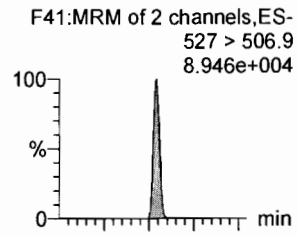
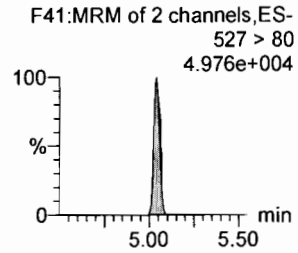
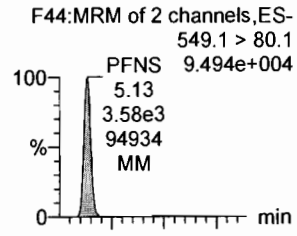
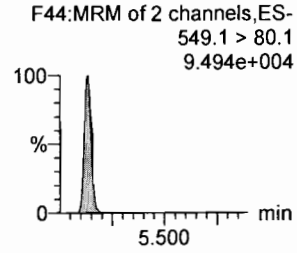


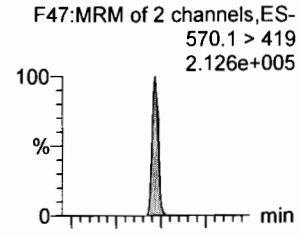


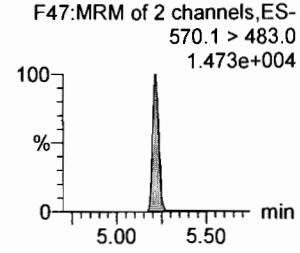
PFNS



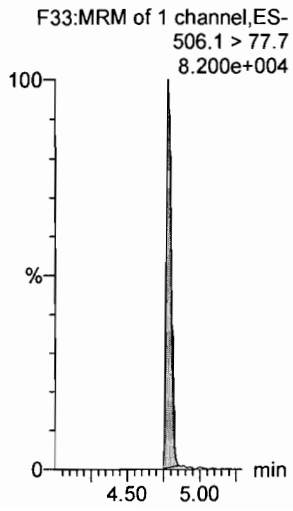


N-MeFOSAA

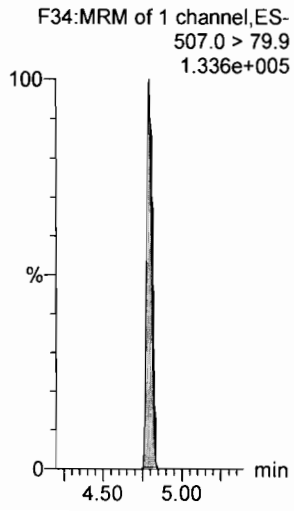




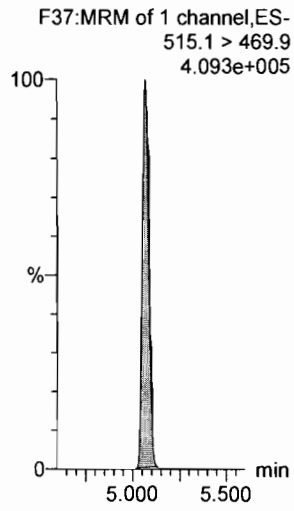
13C8-PFOSA



13C8-PFOS



13C2-PFDA



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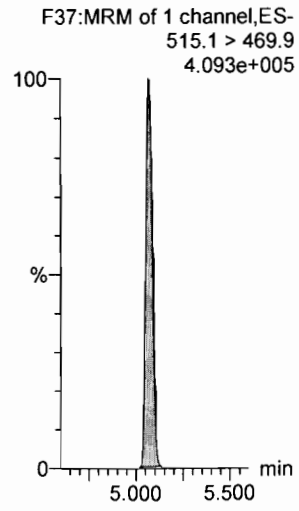
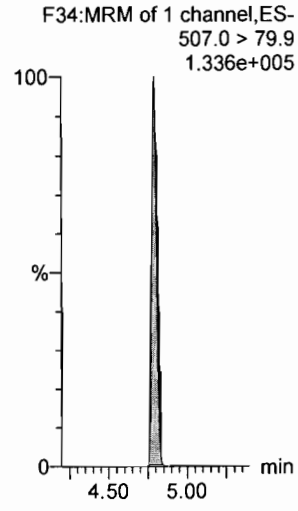
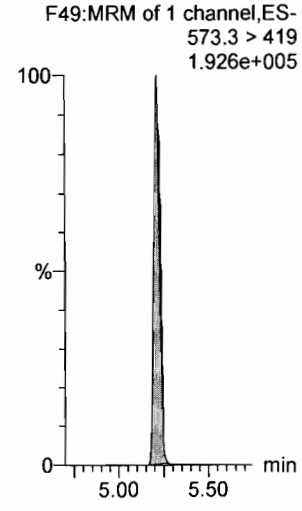


13C8-PFOS



d3-N-MeFOSAA

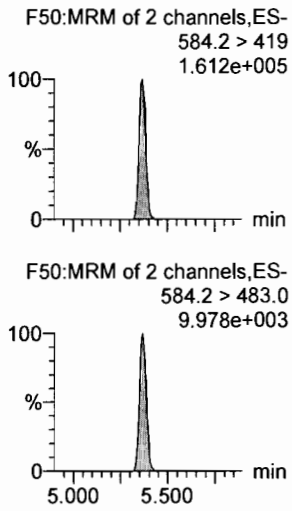


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

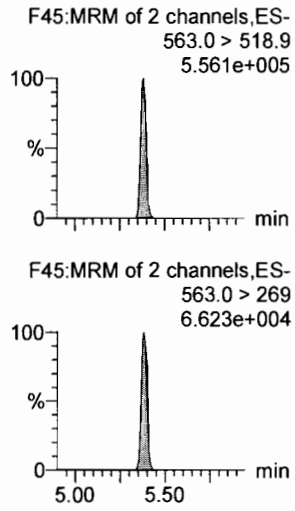
Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

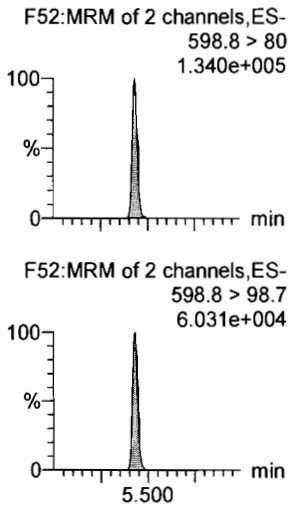
N-EtFOSAA



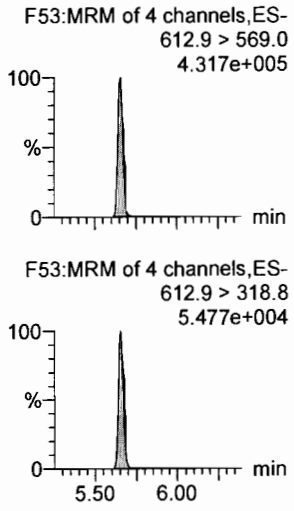
PFUdA



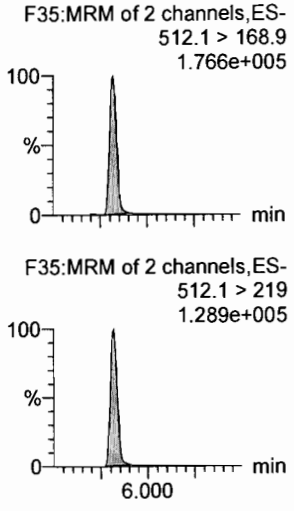
PFDS



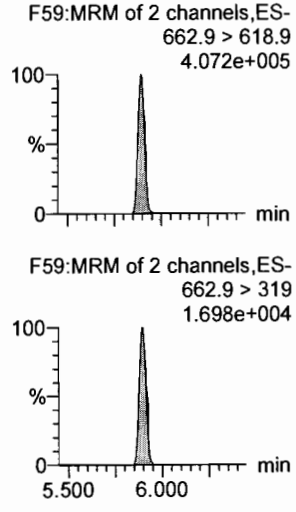
PFDoA



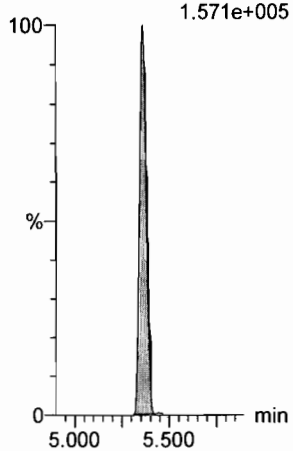
N-MeFOSA



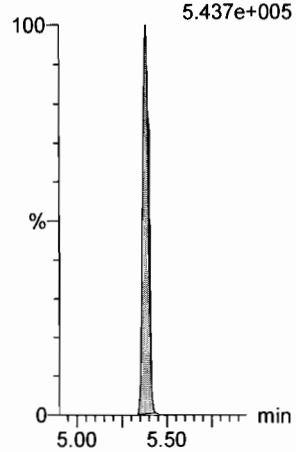
PFTrDA



d5-N-EtFOSAA



13C2-PFUdA



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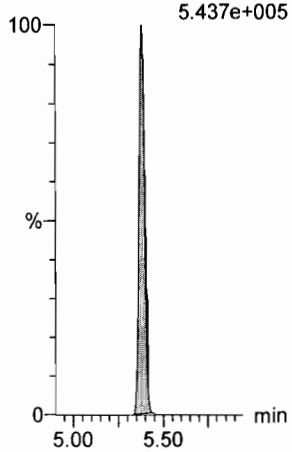
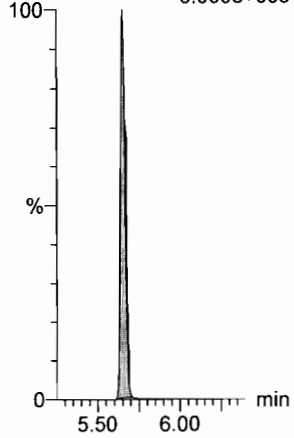
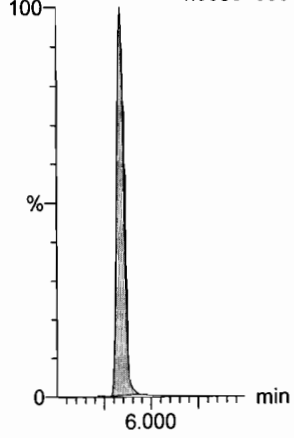


13C2-PFDoA



d3-N-MeFOSA



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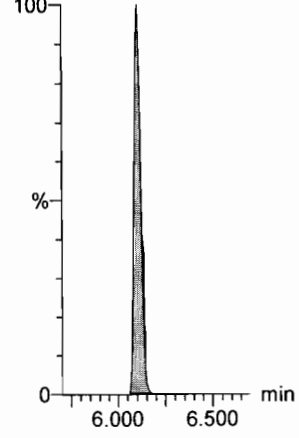
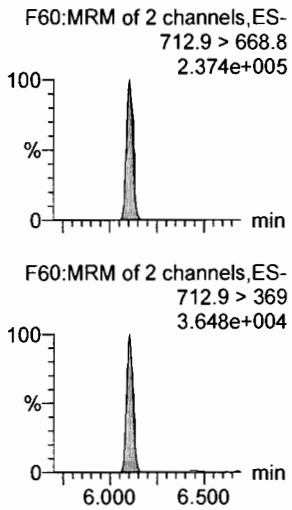


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

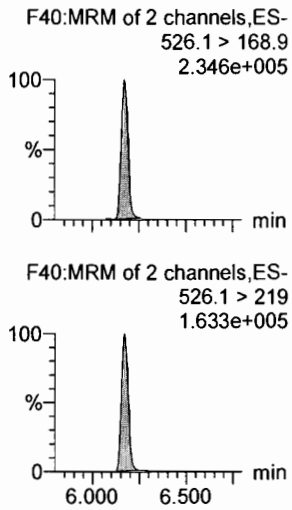
Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

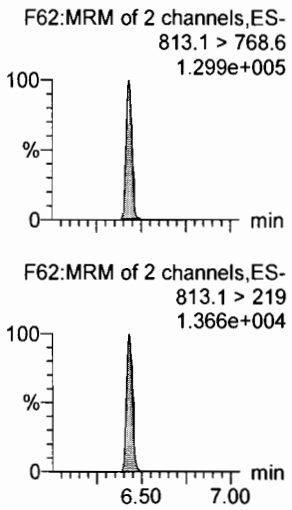
PFTeDA



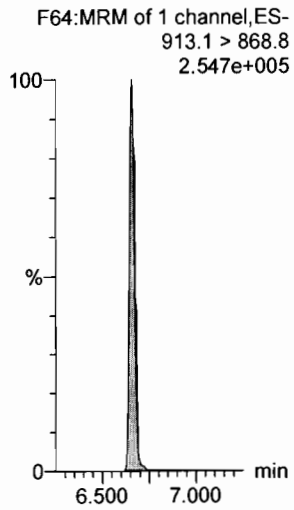
N-EtFOSA



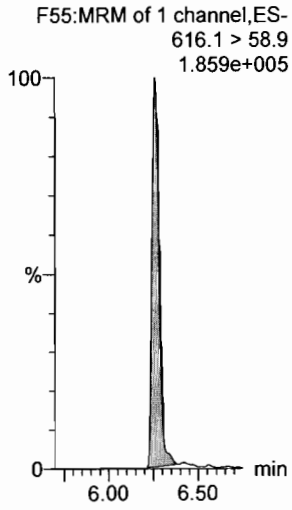
PFHxDA



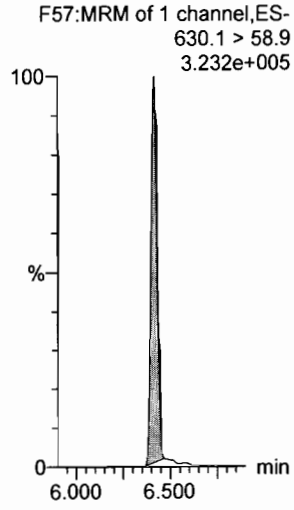
PFODA



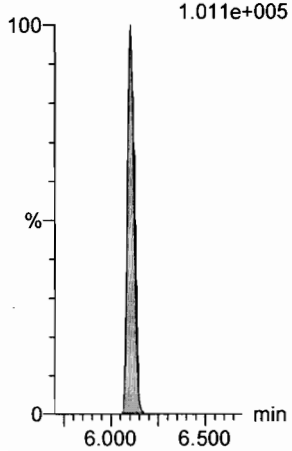
N-MeFOSE



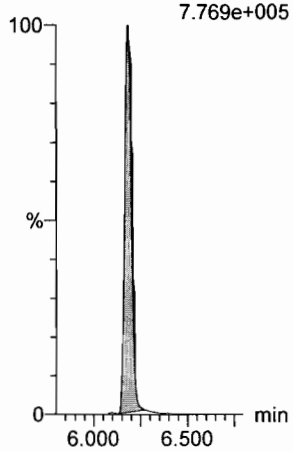
N-EtFOSE



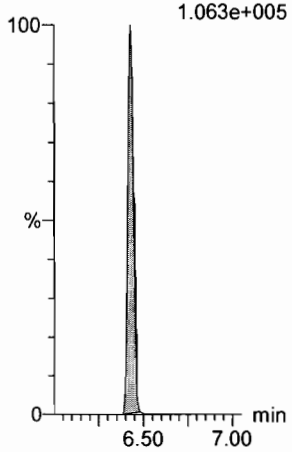
13C2-PFTeDA



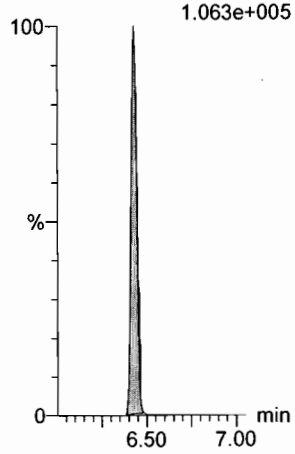
d5-N-ETFOSA



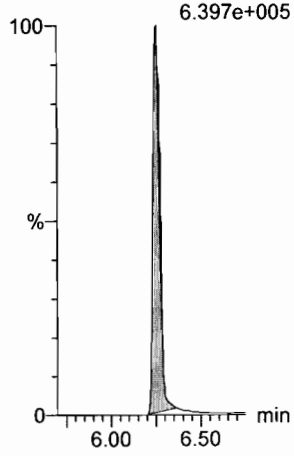
13C2-PFHxDA



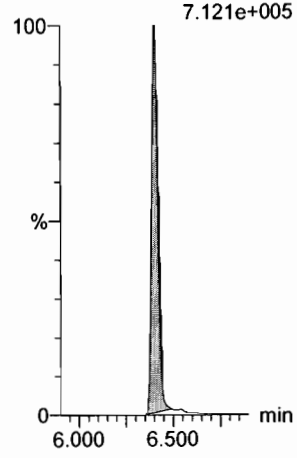
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE

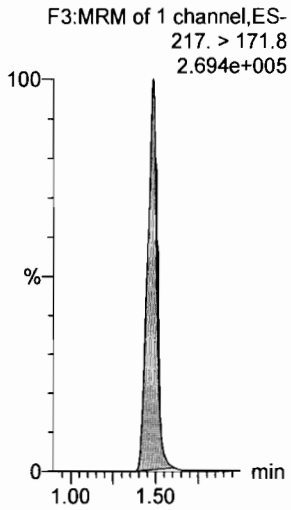


Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

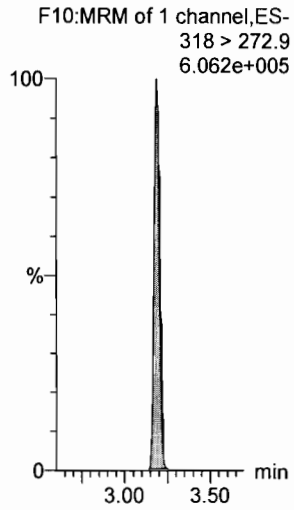
Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

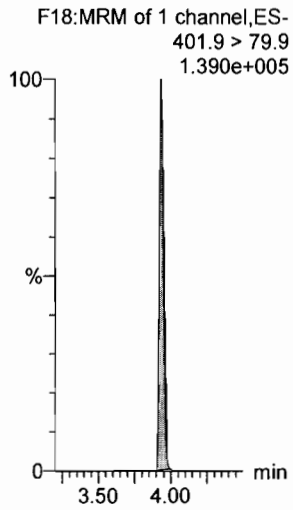
13C4-PFBA



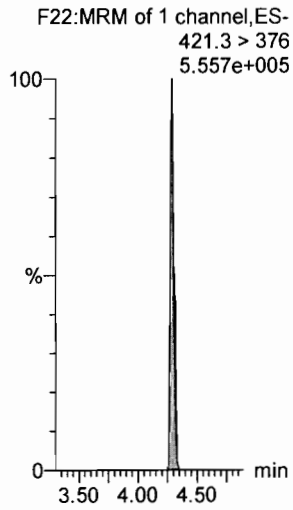
13C5-PFHxA



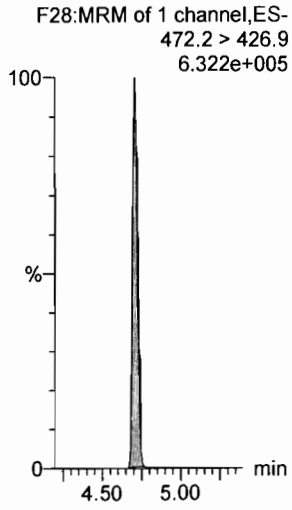
13C3-PFHxS



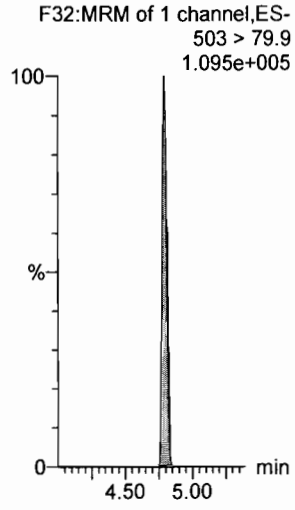
13C8-PFOA



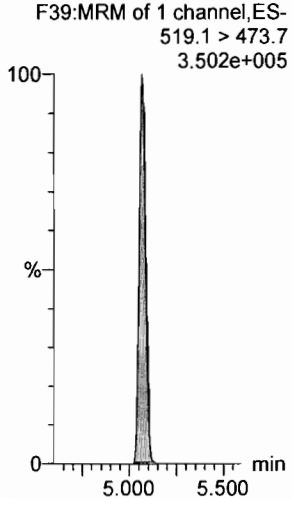
13C9-PFNA



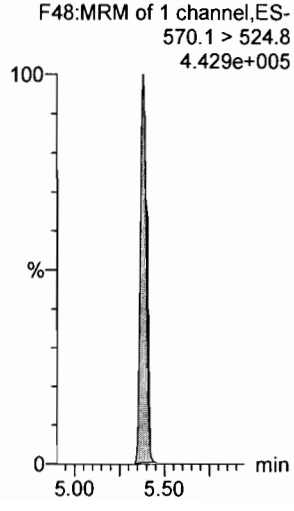
13C4-PFOS



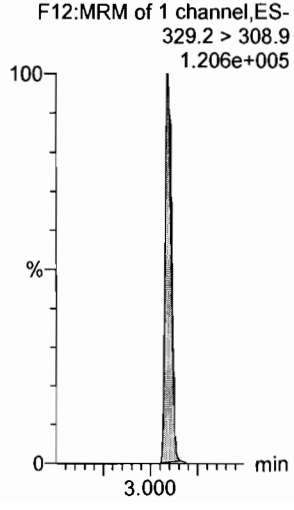
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

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

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

AC 2/6/18 ✓ JA. 02/06/2018

Compound name: PFBA
Correlation coefficient: r = 0.999386, r^2 = 0.998773
Calibration curve: 1.09309 * x + 0.0259553
Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, 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	180205M1_2	Standard	0.250	1.46	197.661	10022.691	0.247	0.2	-19.3	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	1.46	435.564	9106.326	0.598	0.5	4.6	NO	0.999	NO	MM
3	3	180205M1_4	Standard	1.000	1.46	809.741	9321.310	1.086	1.0	-3.0	NO	0.999	NO	MM
4	4	180205M1_5	Standard	2.000	1.46	1743.140	9352.168	2.330	2.1	5.4	NO	0.999	NO	MM
5	5	180205M1_6	Standard	5.000	1.46	4523.180	9565.349	5.911	5.4	7.7	NO	0.999	NO	MM
6	6	180205M1_7	Standard	10.000	1.45	8802.250	9703.849	11.339	10.3	3.5	NO	0.999	NO	MM
7	7	180205M1_8	Standard	50.000	1.45	43397.422	9446.696	57.424	52.5	5.0	NO	0.999	NO	MM
8	8	180205M1_9	Standard	100.000	1.45	87804.320	9397.445	116.793	106.8	6.8	NO	0.999	NO	MM
9	9	180205M1_10	Standard	250.000	1.46	215249.563	9688.439	277.714	254.0	1.6	NO	0.999	NO	MM
10	10	180205M1_11	Standard	500.000	1.46	400723.219	9431.465	531.099	485.8	-2.8	NO	0.999	NO	MM

Compound name: PFPeA
Correlation coefficient: r = 0.999812, r^2 = 0.999624
Calibration curve: 0.964836 * x + 0.0930119
Response type: Internal Std (Ref 35), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, 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	180205M1_2	Standard	0.250	2.42	276.487	11632.453	0.297	0.2	-15.4	NO	1.000	NO	MM
2	2	180205M1_3	Standard	0.500	2.42	513.277	11389.154	0.563	0.5	-2.5	NO	1.000	NO	bb
3	3	180205M1_4	Standard	1.000	2.41	972.130	11172.025	1.088	1.0	3.1	NO	1.000	NO	bb
4	4	180205M1_5	Standard	2.000	2.41	1782.111	11007.866	2.024	2.0	0.1	NO	1.000	NO	bb
5	5	180205M1_6	Standard	5.000	2.41	4614.629	10975.869	5.255	5.4	7.0	NO	1.000	NO	bb
6	6	180205M1_7	Standard	10.000	2.41	8860.626	11146.144	9.937	10.2	2.0	NO	1.000	NO	bb
7	7	180205M1_8	Standard	50.000	2.42	41237.148	10337.492	49.864	51.6	3.2	NO	1.000	NO	bb
8	8	180205M1_9	Standard	100.000	2.41	81583.063	10256.807	99.426	103.0	3.0	NO	1.000	NO	bb
9	9	180205M1_10	Standard	250.000	2.42	210538.078	10776.180	244.217	253.0	1.2	NO	1.000	NO	bb

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Compound name: PFPeA

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10	180205M1_11	Standard	500.000	2.41	372788.688	9816.358	474.703	491.9	-1.6	NO	1.000	NO	bb

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999344
Calibration curve: -0.00019974 * x^2 + 1.89439 * x + -0.0235196
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	2.69	55.497	1489.336	0.466	0.3	3.3	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	2.70	96.497	1446.984	0.834	0.5	-9.5	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	2.69	233.299	1439.827	2.025	1.1	8.2	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	2.69	425.275	1296.600	4.100	2.2	8.9	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	2.69	977.682	1378.333	8.867	4.7	-6.1	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	2.69	2159.505	1425.968	18.930	10.0	0.2	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	2.69	9767.403	1371.053	89.050	47.3	-5.5	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	2.69	20174.291	1375.398	183.350	97.8	-2.2	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	2.69	48242.711	1263.901	477.121	258.9	3.6	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	2.69	85168.273	1195.437	890.556	496.1	-0.8	NO	0.999	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999379
Calibration curve: -0.000386556 * x^2 + 1.68052 * x + -0.0388557
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	3.10	57.992	1489.336	0.487	0.3	25.1	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	3.10	83.684	1446.984	0.723	0.5	-9.3	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	3.10	188.998	1439.827	1.641	1.0	-0.0	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	3.09	286.151	1296.600	2.759	1.7	-16.7	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	3.10	847.487	1378.333	7.686	4.6	-8.0	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	3.10	2053.220	1425.968	17.998	10.8	7.6	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	3.10	9540.633	1371.053	86.983	52.4	4.8	NO	0.999	NO	bb

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Compound name: 4:2 FTS

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8	180205M1_9	Standard	100.000	3.09	17286.775	1375.398	157.107	95.6	-4.4	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	3.10	40441.215	1263.901	399.964	252.7	1.1	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	3.10	71014.906	1195.437	742.562	499.2	-0.2	NO	0.999	NO	bb

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.999926
Calibration curve: 0.000103819 * x^2 + 1.50456 * x + 0.0461584
Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	3.19	344.619	3881.163	0.444	0.3	5.8	NO	1.000	NO	bb
2	2	180205M1_3	Standard	0.500	3.19	608.895	3896.953	0.781	0.5	-2.3	NO	1.000	NO	bb
3	3	180205M1_4	Standard	1.000	3.19	1035.596	3459.113	1.497	1.0	-3.6	NO	1.000	NO	bb
4	4	180205M1_5	Standard	2.000	3.19	2114.211	3349.376	3.156	2.1	3.3	NO	1.000	NO	bb
5	5	180205M1_6	Standard	5.000	3.19	5515.942	3547.622	7.774	5.1	2.7	NO	1.000	NO	bb
6	6	180205M1_7	Standard	10.000	3.19	10547.192	3275.206	16.102	10.7	6.6	NO	1.000	NO	bb
7	7	180205M1_8	Standard	50.000	3.19	54299.922	3579.075	75.857	50.2	0.4	NO	1.000	NO	bb
8	8	180205M1_9	Standard	100.000	3.19	107803.969	3564.416	151.222	99.8	-0.2	NO	1.000	NO	bb
9	9	180205M1_10	Standard	250.000	3.19	251631.203	3309.701	380.142	248.4	-0.7	NO	1.000	NO	bb
10	10	180205M1_11	Standard	500.000	3.19	462963.188	2969.390	779.559	500.8	0.2	NO	1.000	NO	bb

Compound name: PFPeS
Correlation coefficient: r = 0.997169, r^2 = 0.994345
Calibration curve: 1.94685 * x + 0.126058
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, 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	180205M1_2	Standard	0.250	3.39	72.871	1489.336	0.612	0.2	-0.2	NO	0.994	NO	bb
2	2	180205M1_3	Standard	0.500	3.39	117.405	1446.984	1.014	0.5	-8.8	NO	0.994	NO	bb
3	3	180205M1_4	Standard	1.000	3.39	243.409	1439.827	2.113	1.0	2.1	NO	0.994	NO	bb
4	4	180205M1_5	Standard	2.000	3.39	453.324	1296.600	4.370	2.2	9.0	NO	0.994	NO	bb
5	5	180205M1_6	Standard	5.000	3.39	1119.943	1378.333	10.157	5.2	3.0	NO	0.994	NO	bb

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Compound name: PFPeS

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
6	6	180205M1_7	Standard	10.000	3.39	2050.092	1425.968	17.971	9.2	-8.3	NO	0.994	NO	bb
7	7	180205M1_8	Standard	50.000	3.39	10572.978	1371.053	96.395	49.4	-1.1	NO	0.994	NO	bb
8	8	180205M1_9	Standard	100.000	3.39	20931.686	1375.398	190.233	97.6	-2.4	NO	0.994	NO	bb
9	9	180205M1_10	Standard	250.000	3.39	55121.891	1263.901	545.156	280.0	12.0	NO	0.994	NO	bb
10	10	180205M1_11	Standard	500.000	3.39	88166.844	1195.437	921.910	473.5	-5.3	NO	0.994	NO	bb

Compound name: PFHpA
Correlation coefficient: r = 0.999256, r^2 = 0.998512
Calibration curve: 1.23316 * x + 0.0812379
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, 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	180205M1_2	Standard	0.250	3.81	281.934	9704.343	0.363	0.2	-8.6	NO	0.999	NO	bb
2	2	180205M1_3	Standard	0.500	3.82	488.995	9665.984	0.632	0.4	-10.6	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	3.81	954.241	8594.520	1.388	1.1	6.0	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	3.81	1738.925	8220.954	2.644	2.1	3.9	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	3.81	4862.620	9114.931	6.668	5.3	6.8	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	3.81	9254.104	8652.864	13.369	10.8	7.8	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	3.81	42573.172	8671.175	61.372	49.7	-0.6	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	3.81	85592.133	8866.871	120.663	97.8	-2.2	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	3.81	188298.016	8074.834	291.489	236.3	-5.5	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	3.81	382432.219	7525.935	635.191	515.0	3.0	NO	0.999	NO	bb

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999287
Calibration curve: 8.67729e-005 * x^2 + 1.83166 * x + 0.0909919
Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	3.96	52.914	987.703	0.670	0.3	26.4	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	3.96	78.188	1156.700	0.845	0.4	-17.7	NO	0.999	NO	MM
3	3	180205M1_4	Standard	1.000	3.95	153.819	1090.291	1.764	0.9	-8.7	NO	0.999	NO	MM
4	4	180205M1_5	Standard	2.000	3.96	307.380	1008.243	3.811	2.0	1.5	NO	0.999	NO	MM
5	5	180205M1_6	Standard	5.000	3.96	714.558	958.556	9.318	5.0	0.7	NO	0.999	NO	MM
6	6	180205M1_7	Standard	10.000	3.96	1543.627	1005.380	19.192	10.4	4.2	NO	0.999	NO	MM
7	7	180205M1_8	Standard	50.000	3.96	6981.629	1034.881	84.329	45.9	-8.2	NO	0.999	NO	MM
8	8	180205M1_9	Standard	100.000	3.96	14477.990	989.567	182.883	99.3	-0.7	NO	0.999	NO	MM
9	9	180205M1_10	Standard	250.000	3.96	38787.605	1015.036	477.663	257.6	3.0	NO	0.999	NO	MM
10	10	180205M1_11	Standard	500.000	3.96	62024.570	832.334	931.486	496.8	-0.6	NO	0.999	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999028
Calibration curve: -0.000183352 * x^2 + 0.260815 * x + -0.00597784
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	4.28	76.600	14371.031	0.067	0.3	11.4	NO	0.999	NO	bb
2	2	180205M1_3	Standard	0.500	4.27	145.427	12959.139	0.140	0.6	12.2	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	4.28	237.033	12753.312	0.232	0.9	-8.6	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	4.28	518.545	12828.711	0.505	2.0	-1.9	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	4.28	895.364	11953.538	0.936	3.6	-27.6	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	4.28	2504.103	11925.250	2.625	10.2	1.6	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	4.28	12909.655	12257.613	13.165	52.4	4.9	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	4.28	25069.158	13066.736	23.982	98.8	-1.2	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	4.28	53069.754	12344.222	53.739	250.0	0.0	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	4.28	76844.367	11359.581	84.559	499.9	-0.0	NO	0.999	NO	bb

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.994873
Calibration curve: -0.000138522 * x^2 + 0.942967 * x + 0.133643
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.33	397.929	14371.031	0.346	0.2	-9.9	NO	0.995	NO	bb
2	2	180205M1_3	Standard	0.500	4.33	595.393	12959.139	0.574	0.5	-6.5	NO	0.995	NO	bb
3	3	180205M1_4	Standard	1.000	4.33	1085.234	12753.312	1.064	1.0	-1.4	NO	0.995	NO	bb
4	4	180205M1_5	Standard	2.000	4.33	2056.617	12828.711	2.004	2.0	-0.8	NO	0.995	NO	bb
5	5	180205M1_6	Standard	5.000	4.33	5293.996	11953.538	5.536	5.7	14.7	NO	0.995	NO	bb
6	6	180205M1_7	Standard	10.000	4.33	10151.471	11925.250	10.641	11.2	11.6	NO	0.995	NO	bb
7	7	180205M1_8	Standard	50.000	4.33	46435.820	12257.613	47.354	50.5	0.9	NO	0.995	NO	bb
8	8	180205M1_9	Standard	100.000	4.33	82386.273	13066.736	78.813	84.5	-15.5	NO	0.995	NO	bb
9	9	180205M1_10	Standard	250.000	4.33	242828.266	12344.222	245.893	271.4	8.6	NO	0.995	NO	bb
10	10	180205M1_11	Standard	500.000	4.33	391155.906	11359.581	430.425	491.9	-1.6	NO	0.995	NO	bb

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998876
Calibration curve: -0.00320317 * x^2 + 1.18129 * x + -0.0785414
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	4.44	38.241	3338.892	0.143	0.2	-24.9	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	4.44	123.096	3430.266	0.449	0.4	-10.6	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	4.44	272.994	3144.039	1.085	1.0	-1.2	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	4.43	523.749	2693.524	2.431	2.1	6.8	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	4.44	1345.688	2976.156	5.652	4.9	-1.7	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	4.44	2624.799	2690.889	12.193	10.7	7.0	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	4.44	10141.354	2548.329	49.745	48.6	-2.8	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	4.44	22917.609	3309.513	86.560	101.0	1.0	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	4.44	60645.820	2663.184	284.649			NO	0.999	NO	bbXI
10	10	180205M1_11	Standard	500.000	4.44	98782.766	2762.147	447.038			NO	0.999	NO	bbXI

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Compound name: PFNA
Coefficient of Determination: R^2 = 0.999682
Calibration curve: -0.000346423 * x^2 + 1.22978 * x + 0.0495249
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.76	326.044	11386.309	0.358	0.3	0.3	NO	1.000	NO	bb
2	2	180205M1_3	Standard	0.500	4.76	627.233	12361.640	0.634	0.5	-4.9	NO	1.000	NO	bb
3	3	180205M1_4	Standard	1.000	4.76	897.467	9874.763	1.136	0.9	-11.6	NO	1.000	NO	bb
4	4	180205M1_5	Standard	2.000	4.76	2591.137	10621.063	3.050	2.4	22.1	NO	1.000	NO	bb
5	5	180205M1_6	Standard	5.000	4.76	4862.226	10309.997	5.895	4.8	-4.8	NO	1.000	NO	bb
6	6	180205M1_7	Standard	10.000	4.77	11525.115	11520.252	12.505	10.2	1.6	NO	1.000	NO	bb
7	7	180205M1_8	Standard	50.000	4.76	43986.102	9323.253	58.974	48.6	-2.8	NO	1.000	NO	bb
8	8	180205M1_9	Standard	100.000	4.76	101966.977	10774.762	118.294	98.9	-1.1	NO	1.000	NO	bb
9	9	180205M1_10	Standard	250.000	4.76	279077.438	12012.619	290.400	254.3	1.7	NO	1.000	NO	bb
10	10	180205M1_11	Standard	500.000	4.76	413078.500	9807.670	526.474	497.9	-0.4	NO	1.000	NO	bb

Compound name: PFOSA
Correlation coefficient: r = 0.996260, r^2 = 0.992534
Calibration curve: 1.06297 * x + -0.0116064
Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.83	42.776	2998.812	0.178	0.2	-28.5	NO	0.993	NO	MM
2	2	180205M1_3	Standard	0.500	4.84	118.137	2668.477	0.553	0.5	6.3	NO	0.993	NO	bb
3	3	180205M1_4	Standard	1.000	4.83	248.709	3051.908	1.019	1.0	-3.1	NO	0.993	NO	bb
4	4	180205M1_5	Standard	2.000	4.82	453.946	2754.330	2.060	1.9	-2.5	NO	0.993	NO	bb
5	5	180205M1_6	Standard	5.000	4.82	1173.793	2891.491	5.074	4.8	-4.3	NO	0.993	NO	bb
6	6	180205M1_7	Standard	10.000	4.83	2452.319	2384.795	12.854	12.1	21.0	NO	0.993	NO	bb
7	7	180205M1_8	Standard	50.000	4.82	11730.946	2298.451	63.798	60.0	20.1	NO	0.993	NO	bb
8	8	180205M1_9	Standard	100.000	4.82	22485.494	2844.106	98.825	93.0	-7.0	NO	0.993	NO	bb
9	9	180205M1_10	Standard	250.000	4.82	52217.348	2504.160	260.653	245.2	-1.9	NO	0.993	NO	bb
10	10	180205M1_11	Standard	500.000	4.82	91415.367	2203.638	518.548	487.8	-2.4	NO	0.993	NO	bbX

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.992041
Calibration curve: -0.000459849 * x^2 + 1.13076 * x + -0.0806935
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.84	56.526	3338.892	0.212	0.3	3.4	NO	0.992	NO	MM
2	2	180205M1_3	Standard	0.500	4.84	154.741	3430.266	0.564	0.6	14.0	NO	0.992	NO	MM
3	3	180205M1_4	Standard	1.000	4.84	243.113	3144.039	0.967	0.9	-7.3	NO	0.992	NO	MM
4	4	180205M1_5	Standard	2.000	4.84	489.550	2693.524	2.272	2.1	4.1	NO	0.992	NO	MM
5	5	180205M1_6	Standard	5.000	4.84	1307.860	2976.156	5.493	4.9	-1.2	NO	0.992	NO	MM
6	6	180205M1_7	Standard	10.000	4.84	2306.796	2690.889	10.716	9.6	-4.1	NO	0.992	NO	MM
7	7	180205M1_8	Standard	50.000	4.84	10948.096	2548.329	53.702	48.5	-3.0	NO	0.992	NO	MM
8	8	180205M1_9	Standard	100.000	4.84	24292.385	3309.513	91.752	84.1	-15.9	NO	0.992	NO	MM
9	9	180205M1_10	Standard	250.000	4.84	60558.227	2663.184	284.238	284.3	13.7	NO	0.992	NO	MM
10	10	180205M1_11	Standard	500.000	4.84	96929.016	2762.147	438.649	482.8	-3.4	NO	0.992	NO	MM

Compound name: PFDA
Coefficient of Determination: R^2 = 0.997055
Calibration curve: -0.000427494 * x^2 + 1.25663 * x + -0.168259
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.14	379.653	12269.099	0.387	0.4	76.7	YES	0.997	NO	bbX
2	2	180205M1_3	Standard	0.500	5.13	481.648	10364.091	0.581	0.6	19.3	NO	0.997	NO	bb
3	3	180205M1_4	Standard	1.000	5.13	1081.577	10718.264	1.261	1.1	13.8	NO	0.997	NO	bb
4	4	180205M1_5	Standard	2.000	5.13	1656.883	10135.015	2.044	1.8	-11.9	NO	0.997	NO	bb
5	5	180205M1_6	Standard	5.000	5.13	3814.475	10742.281	4.439	3.7	-26.6	NO	0.997	NO	bb
6	6	180205M1_7	Standard	10.000	5.14	10452.378	10607.220	12.318	10.0	-0.3	NO	0.997	NO	bb
7	7	180205M1_8	Standard	50.000	5.13	44272.516	8189.372	67.576	54.9	9.9	NO	0.997	NO	bb
8	8	180205M1_9	Standard	100.000	5.14	94081.914	10135.432	116.031	95.6	-4.4	NO	0.997	NO	bb
9	9	180205M1_10	Standard	250.000	5.13	223254.516	9683.636	288.185	250.9	0.4	NO	0.997	NO	bb
10	10	180205M1_11	Standard	500.000	5.13	466431.188	9066.951	643.038	660.1	32.0	YES	0.997	NO	bbX

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Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.999052
Calibration curve: -8.73283e-005 * x^2 + 0.230675 * x + 0.00690415
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	5.12	39.568	14371.031	0.034	0.1	-52.3	YES	0.999	NO	MMX
2	2	180205M1_3	Standard	0.500	5.11	133.219	12959.139	0.128	0.5	5.4	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	5.11	189.904	12753.312	0.186	0.8	-22.3	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	5.10	528.241	12828.711	0.515	2.2	10.2	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	5.11	1265.602	11953.538	1.323	5.7	14.4	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	5.11	2226.592	11925.250	2.334	10.1	1.3	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	5.11	11120.788	12257.613	11.341	50.1	0.2	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	5.11	21931.273	13066.736	20.980	94.3	-5.7	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	5.11	53080.789	12344.222	53.751	258.2	3.3	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	5.11	84502.281	11359.581	92.986	496.3	-0.7	NO	0.999	NO	bb

Compound name: PFNS
Coefficient of Determination: R^2 = 0.992981
Calibration curve: -0.000121998 * x^2 + 0.854418 * x + -0.00270057
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.20	62.129	3338.892	0.233	0.3	10.2	NO	0.993	NO	MM
2	2	180205M1_3	Standard	0.500	5.20	130.853	3430.266	0.477	0.6	12.3	NO	0.993	NO	bb
3	3	180205M1_4	Standard	1.000	5.19	150.527	3144.039	0.598	0.7	-29.6	NO	0.993	NO	MM
4	4	180205M1_5	Standard	2.000	5.20	352.632	2693.524	1.636	1.9	-4.0	NO	0.993	NO	MM
5	5	180205M1_6	Standard	5.000	5.20	1022.309	2976.156	4.294	5.0	0.6	NO	0.993	NO	MM
6	6	180205M1_7	Standard	10.000	5.20	2001.046	2690.889	9.295	10.9	9.0	NO	0.993	NO	MM
7	7	180205M1_8	Standard	50.000	5.19	9976.960	2548.329	48.939	57.8	15.5	NO	0.993	NO	bb
8	8	180205M1_9	Standard	100.000	5.19	18070.344	3309.513	68.252	80.8	-19.2	NO	0.993	NO	bb
9	9	180205M1_10	Standard	250.000	5.19	46598.965	2663.184	218.718	266.1	6.4	NO	0.993	NO	MM
10	10	180205M1_11	Standard	500.000	5.19	86811.477	2762.147	392.862	494.8	-1.0	NO	0.993	NO	MM

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Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.998764
Calibration curve: 3.01342e-005 * x^2 + 1.35675 * x + -0.0851455
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	5.29	97.849	5680.184	0.215	0.2	-11.4	NO	0.999	NO	bb
2	2	180205M1_3	Standard	0.500	5.29	172.823	4759.048	0.454	0.4	-20.5	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	5.28	541.947	5587.407	1.212	1.0	-4.4	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	5.28	874.848	4581.280	2.387	1.8	-8.9	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	5.28	2973.251	5203.623	7.142	5.3	6.5	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	5.29	5842.657	5076.342	14.387	10.7	6.6	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	5.28	31831.545	5354.088	74.316	54.8	9.5	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	5.28	60681.777	5533.306	137.083	100.9	0.9	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	5.29	127022.773	4874.869	325.708	238.9	-4.5	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	5.28	226994.750	4097.078	692.551	504.9	1.0	NO	0.999	NO	bb

Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.997258
Calibration curve: -0.000114587 * x^2 + 1.07426 * x + -0.0705606
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	5.45	61.043	5188.511	0.147	0.2	-19.0	NO	0.997	NO	bb
2	2	180205M1_3	Standard	0.500	5.44	200.661	6589.299	0.381	0.4	-16.0	NO	0.997	NO	bb
3	3	180205M1_4	Standard	1.000	5.44	537.804	6153.969	1.092	1.1	8.3	NO	0.997	NO	bb
4	4	180205M1_5	Standard	2.000	5.44	919.643	4993.854	2.302	2.2	10.5	NO	0.997	NO	bb
5	5	180205M1_6	Standard	5.000	5.44	2404.421	5892.494	5.101	4.8	-3.7	NO	0.997	NO	bb
6	6	180205M1_7	Standard	10.000	5.45	5057.885	5905.468	10.706	10.0	0.4	NO	0.997	NO	bb
7	7	180205M1_8	Standard	50.000	5.44	23001.533	5570.528	51.614	48.4	-3.3	NO	0.997	NO	bb
8	8	180205M1_9	Standard	100.000	5.44	47325.715	6143.439	96.293	90.6	-9.4	NO	0.997	NO	bb
9	9	180205M1_10	Standard	250.000	5.44	111557.477	4975.161	280.286	268.7	7.5	NO	0.997	NO	bb
10	10	180205M1_11	Standard	500.000	5.44	175530.266	4378.664	501.095	492.4	-1.5	NO	0.997	NO	bb

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Compound name: PFUdA
Coefficient of Determination: R^2 = 0.997616
Calibration curve: -0.000154723 * x^2 + 1.02793 * x + 0.136525
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.46	389.414	13346.800	0.365	0.2	-11.2	NO	0.998	NO	bb
2	2	180205M1_3	Standard	0.500	5.46	608.084	15079.640	0.504	0.4	-28.5	NO	0.998	NO	bb
3	3	180205M1_4	Standard	1.000	5.45	1002.065	8809.350	1.422	1.3	25.1	NO	0.998	NO	bb
4	4	180205M1_5	Standard	2.000	5.46	1882.333	10741.879	2.190	2.0	-0.1	NO	0.998	NO	bb
5	5	180205M1_6	Standard	5.000	5.46	4964.170	11360.022	5.462	5.2	3.7	NO	0.998	NO	bb
6	6	180205M1_7	Standard	10.000	5.46	11090.942	12255.931	11.312	10.9	8.9	NO	0.998	NO	bb
7	7	180205M1_8	Standard	50.000	5.46	44051.438	10991.827	50.096	49.0	-2.1	NO	0.998	NO	bb
8	8	180205M1_9	Standard	100.000	5.45	83940.461	9490.228	110.562	109.2	9.2	NO	0.998	NO	bb
9	9	180205M1_10	Standard	250.000	5.46	202882.109	10915.595	232.331	234.1	-6.3	NO	0.998	NO	bb
10	10	180205M1_11	Standard	500.000	5.45	390795.094	10150.924	481.231	506.7	1.3	NO	0.998	NO	bb

Compound name: PFDS
Coefficient of Determination: R^2 = 0.995765
Calibration curve: 0.000356429 * x^2 + 0.467357 * x + -0.0218895
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	5.51	77.424	8210.017	0.118	0.3	19.6	NO	0.996	NO	bb
2	2	180205M1_3	Standard	0.500	5.51	122.722	6068.220	0.253	0.6	17.5	NO	0.996	NO	bb
3	3	180205M1_4	Standard	1.000	5.51	185.541	6999.638	0.331	0.8	-24.5	NO	0.996	NO	bb
4	4	180205M1_5	Standard	2.000	5.50	488.926	8286.914	0.737	1.6	-18.9	NO	0.996	NO	bb
5	5	180205M1_6	Standard	5.000	5.50	1357.079	7532.835	2.252	4.8	-3.1	NO	0.996	NO	bb
6	6	180205M1_7	Standard	10.000	5.51	2504.832	7913.522	3.957	8.5	-15.4	NO	0.996	NO	bb
7	7	180205M1_8	Standard	50.000	5.50	13426.270	6421.619	26.135	53.8	7.5	NO	0.996	NO	bb
8	8	180205M1_9	Standard	100.000	5.50	25593.012	6474.625	49.410	98.4	-1.6	NO	0.996	NO	bb
9	9	180205M1_10	Standard	250.000	5.50	69265.063	6571.548	131.752	238.6	-4.6	NO	0.996	NO	bbX
10	10	180205M1_11	Standard	500.000	5.50	94030.266	6474.451	181.541	313.5	-37.3	YES	0.996	NO	bbX

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Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999150
Calibration curve: 0.00496201 * x^2 + 1.4128 * x + 0.639401
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.74	405.903	8210.017	0.618			NO	0.999	NO	bbXl
2	2	180205M1_3	Standard	0.500	5.74	673.229	6068.220	1.387	0.5	5.6	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	5.74	1059.350	6999.638	1.892	0.9	-11.6	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	5.74	2129.994	8286.914	3.213	1.8	-9.5	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	5.74	5213.129	7532.835	8.651	5.6	11.2	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	5.74	10272.429	7913.522	16.226	10.6	6.4	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	5.74	41699.133	6421.619	81.169	48.7	-2.6	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	5.74	99795.602	6474.625	192.667	100.5	0.5	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	5.74	261571.313	6571.548	497.545	204.6	-18.1	NO	0.999	NO	bbX
10	10	180205M1_11	Standard	500.000	5.74	428506.656	6474.451	827.303	289.9	-42.0	YES	0.999	NO	bbX

Compound name: N-MeFOSA
Correlation coefficient: r = 0.997434, r^2 = 0.994875
Calibration curve: 0.904352 * x + 0.313322
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, 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	180205M1_2	Standard	1.250	5.84	133.308	16925.346	1.181	1.0	-23.2	NO	0.995	NO	bb
2	2	180205M1_3	Standard	2.500	5.84	248.309	17038.336	2.186	2.1	-17.2	NO	0.995	NO	bb
3	3	180205M1_4	Standard	5.000	5.84	563.493	16428.209	5.145	5.3	6.9	NO	0.995	NO	bb
4	4	180205M1_5	Standard	10.000	5.83	1094.212	15710.326	10.447	11.2	12.1	NO	0.995	NO	bb
5	5	180205M1_6	Standard	25.000	5.84	2832.833	15942.768	26.653	29.1	16.5	NO	0.995	NO	bb
6	6	180205M1_7	Standard	50.000	5.84	5631.762	16495.656	51.211	56.3	12.6	NO	0.995	NO	bb
7	7	180205M1_8	Standard	250.000	5.83	27237.893	16096.688	253.821	280.3	12.1	NO	0.995	NO	bb
8	8	180205M1_9	Standard	500.000	5.84	52551.516	16082.778	490.135	541.6	8.3	NO	0.995	NO	bb
9	9	180205M1_10	Standard	1250.000	5.84	128371.391	16069.375	1198.286	1324.7	6.0	NO	0.995	NO	bb
10	10	180205M1_11	Standard	2500.000	5.84	215195.500	15237.344	2118.435	2342.1	-6.3	NO	0.995	NO	bb

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Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.993888
Calibration curve: -0.00731597 * x^2 + 3.97537 * x + 0.0730998
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.98	331.797	4771.891	0.869	0.2	-19.9	NO	0.994	NO	bb
2	2	180205M1_3	Standard	0.500	5.98	640.147	4105.897	1.949	0.5	-5.5	NO	0.994	NO	bb
3	3	180205M1_4	Standard	1.000	5.98	1061.577	3328.105	3.987	1.0	-1.4	NO	0.994	NO	bb
4	4	180205M1_5	Standard	2.000	5.98	2267.542	3159.379	8.971	2.2	12.4	NO	0.994	NO	bb
5	5	180205M1_6	Standard	5.000	5.98	6128.515	3818.064	20.064	5.1	1.5	NO	0.994	NO	bb
6	6	180205M1_7	Standard	10.000	5.99	13552.588	3633.151	46.628	12.0	19.7	NO	0.994	NO	bb
7	7	180205M1_8	Standard	50.000	5.98	50360.754	3809.837	165.233	45.3	-9.3	NO	0.994	NO	bb
8	8	180205M1_9	Standard	100.000	5.98	96444.430	3638.601	331.324	102.8	2.8	NO	0.994	NO	bb
9	9	180205M1_10	Standard	250.000	5.98	247758.734	4154.956	745.371			NO	0.994	NO	bbXI
10	10	180205M1_11	Standard	500.000	5.98	407350.531	4154.664	1225.582			NO	0.994	NO	bbXI

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.995043
Calibration curve: -0.001626 * x^2 + 2.20804 * x + -0.00552365
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	6.20	160.461	4771.891	0.420	0.2	-22.8	NO	0.995	NO	bb
2	2	180205M1_3	Standard	0.500	6.20	340.435	4105.897	1.036	0.5	-5.6	NO	0.995	NO	bb
3	3	180205M1_4	Standard	1.000	6.19	604.075	3328.105	2.269	1.0	3.1	NO	0.995	NO	bb
4	4	180205M1_5	Standard	2.000	6.20	1418.106	3159.379	5.611	2.5	27.4	NO	0.995	NO	bb
5	5	180205M1_6	Standard	5.000	6.20	2720.549	3818.064	8.907	4.0	-19.0	NO	0.995	NO	bb
6	6	180205M1_7	Standard	10.000	6.20	7125.633	3633.151	24.516	11.2	12.0	NO	0.995	NO	bb
7	7	180205M1_8	Standard	50.000	6.19	33052.383	3809.837	108.444	51.0	2.1	NO	0.995	NO	bb
8	8	180205M1_9	Standard	100.000	6.20	65142.555	3638.601	223.790	110.3	10.3	NO	0.995	NO	bb
9	9	180205M1_10	Standard	250.000	6.20	137160.031	4154.956	412.640	223.8	-10.5	NO	0.995	NO	bb
10	10	180205M1_11	Standard	500.000	6.20	236745.219	4154.664	712.288	527.5	5.5	NO	0.995	NO	bb

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999525
Calibration curve: -4.20397e-005 * x^2 + 0.909049 * x + 0.0496773
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	1.250	6.22	193.103	26027.631	1.113	1.2	-6.4	NO	1.000	NO	bb
2	2	180205M1_3	Standard	2.500	6.21	433.200	25818.020	2.517	2.7	8.6	NO	1.000	NO	bb
3	3	180205M1_4	Standard	5.000	6.21	704.009	25200.258	4.190	4.6	-8.9	NO	1.000	NO	bb
4	4	180205M1_5	Standard	10.000	6.21	1593.073	24076.467	9.925	10.9	8.7	NO	1.000	NO	bb
5	5	180205M1_6	Standard	25.000	6.21	3801.835	24555.996	23.223	25.5	2.1	NO	1.000	NO	bb
6	6	180205M1_7	Standard	50.000	6.22	7619.952	25061.127	45.608	50.2	0.5	NO	1.000	NO	bd
7	7	180205M1_8	Standard	250.000	6.21	34266.098	24085.705	213.401	237.3	-5.1	NO	1.000	NO	bb
8	8	180205M1_9	Standard	500.000	6.21	69906.367	24006.668	436.793	491.6	-1.7	NO	1.000	NO	bb
9	9	180205M1_10	Standard	1250.000	6.22	160735.250	21913.373	1100.255	1286.9	2.9	NO	1.000	NO	bb
10	10	180205M1_11	Standard	2500.000	6.21	270773.938	20331.387	1997.704	2482.5	-0.7	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998701
Calibration curve: -0.000702362 * x^2 + 0.725251 * x + 0.092609
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	6.51	161.507	2897.898	0.279	0.3	2.6	NO	0.999	NO	bb
2	2	180205M1_3	Standard	0.500	6.51	197.982	2721.910	0.364	0.4	-25.2	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	6.51	434.967	2311.265	0.941	1.2	17.1	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	6.51	712.183	2571.405	1.385	1.8	-10.8	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	6.51	2104.636	2691.708	3.909	5.3	5.8	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	6.51	4021.323	2425.339	8.290	11.4	14.3	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	6.51	18173.928	2730.820	33.276	48.0	-4.0	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	6.51	35480.129	2704.692	65.590	100.0	-0.0	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	6.51	100469.781	3647.339	137.730	250.6	0.2	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	6.51	159786.438	3801.264	210.175			NO	0.999	NO	bbXl

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.995886
Calibration curve: -0.0015927 * x^2 + 0.943535 * x + -0.0103925
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	6.74	126.255	2897.898	0.218	0.2	-3.2	NO	0.996	NO	bb
2	2	180205M1_3	Standard	0.500	6.74	274.029	2721.910	0.503	0.5	9.0	NO	0.996	NO	bb
3	3	180205M1_4	Standard	1.000	6.73	480.673	2311.265	1.040	1.1	11.5	NO	0.996	NO	bb
4	4	180205M1_5	Standard	2.000	6.74	872.088	2571.405	1.696	1.8	-9.3	NO	0.996	NO	bb
5	5	180205M1_6	Standard	5.000	6.74	2105.959	2691.708	3.912	4.2	-16.3	NO	0.996	NO	bb
6	6	180205M1_7	Standard	10.000	6.74	4793.748	2425.339	9.883	10.7	6.8	NO	0.996	NO	bb
7	7	180205M1_8	Standard	50.000	6.74	21522.180	2730.820	39.406	45.2	-9.5	NO	0.996	NO	bb
8	8	180205M1_9	Standard	100.000	6.74	45304.684	2704.692	83.752	108.7	8.7	NO	0.996	NO	bb
9	9	180205M1_10	Standard	250.000	6.73	98436.133	3647.339	134.942	241.4	-3.4	NO	0.996	NO	bb
10	10	180205M1_11	Standard	500.000	6.74	179961.938	3801.264	236.713			NO	0.996	NO	bbXI

Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999674
Calibration curve: 0.000162073 * x^2 + 0.993321 * x + 0.0408533
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	1.250	6.34	222.492	23052.748	1.448	1.4	13.3	NO	1.000	NO	bb
2	2	180205M1_3	Standard	2.500	6.33	331.411	22611.672	2.198	2.2	-13.1	NO	1.000	NO	bb
3	3	180205M1_4	Standard	5.000	6.33	557.718	17689.697	4.729	4.7	-5.7	NO	1.000	NO	bb
4	4	180205M1_5	Standard	10.000	6.34	1426.398	20920.285	10.227	10.2	2.4	NO	1.000	NO	bb
5	5	180205M1_6	Standard	25.000	6.33	4407.009	24092.709	27.438	27.5	9.8	NO	1.000	NO	bb
6	6	180205M1_7	Standard	50.000	6.34	7068.171	22459.658	47.206	47.1	-5.8	NO	1.000	NO	bb
7	7	180205M1_8	Standard	250.000	6.33	34543.496	20572.127	251.871	243.8	-2.5	NO	1.000	NO	bd
8	8	180205M1_9	Standard	500.000	6.33	81911.789	22460.768	547.032	508.5	1.7	NO	1.000	NO	bb
9	9	180205M1_10	Standard	1250.000	6.33	195524.016	19651.977	1492.400	1248.2	-0.1	NO	1.000	NO	bb
10	10	180205M1_11	Standard	2500.000	6.34	278340.938	19258.752	2167.905	1707.0	-31.7	YES	1.000	NO	bdX

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.998685, r^2 = 0.997371
Calibration curve: 1.166 * x + -0.0323662
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, 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	180205M1_2	Standard	1.250	6.49	225.524	18544.109	1.824	1.6	27.4	NO	0.997	NO	bb
2	2	180205M1_3	Standard	2.500	6.49	329.467	19239.158	2.569	2.2	-10.8	NO	0.997	NO	bb
3	3	180205M1_4	Standard	5.000	6.49	785.208	21501.225	5.478	4.7	-5.5	NO	0.997	NO	bb
4	4	180205M1_5	Standard	10.000	6.49	1327.128	18488.846	10.767	9.3	-7.4	NO	0.997	NO	bb
5	5	180205M1_6	Standard	25.000	6.49	3528.166	22763.021	23.249	20.0	-20.1	NO	0.997	NO	bb
6	6	180205M1_7	Standard	50.000	6.49	8527.658	17412.133	73.463	63.0	26.1	NO	0.997	NO	bb
7	7	180205M1_8	Standard	250.000	6.48	40269.238	22968.930	262.981	225.6	-9.8	NO	0.997	NO	bb
8	8	180205M1_9	Standard	500.000	6.48	66313.711	17803.889	558.701	479.2	-4.2	NO	0.997	NO	bd
9	9	180205M1_10	Standard	1250.000	6.49	215053.766	20987.322	1537.026	1318.2	5.5	NO	0.997	NO	bd
10	10	180205M1_11	Standard	2500.000	6.48	361337.500	18820.041	2879.942	2470.0	-1.2	NO	0.997	NO	bd

Compound name: 13C3-PFBA
Response Factor: 0.876112
RRF SD: 0.031766, Relative SD: 3.62579
Response type: Internal Std (Ref 57), 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	180205M1_2	Standard	12.500	1.45	10022.691	10944.880	11.447	13.1	4.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	1.46	9106.326	11400.695	9.984	11.4	-8.8	NO		NO	MM
3	3	180205M1_4	Standard	12.500	1.45	9321.310	10634.419	10.957	12.5	0.0	NO		NO	MM
4	4	180205M1_5	Standard	12.500	1.46	9352.168	10529.709	11.102	12.7	1.4	NO		NO	MM
5	5	180205M1_6	Standard	12.500	1.45	9565.349	11065.528	10.805	12.3	-1.3	NO		NO	MM
6	6	180205M1_7	Standard	12.500	1.45	9703.849	10998.306	11.029	12.6	0.7	NO		NO	bb
7	7	180205M1_8	Standard	12.500	1.45	9446.696	10624.597	11.114	12.7	1.5	NO		NO	MM
8	8	180205M1_9	Standard	12.500	1.45	9397.445	10957.186	10.721	12.2	-2.1	NO		NO	MM
9	9	180205M1_10	Standard	12.500	1.45	9688.439	10780.186	11.234	12.8	2.6	NO		NO	bb
10	10	180205M1_11	Standard	12.500	1.45	9431.465	10600.861	11.121	12.7	1.5	NO		NO	MM

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Compound name: 13C3-PFPeA
Response Factor: 0.867829
RRF SD: 0.0681601, Relative SD: 7.8541
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	2.41	11632.453	14207.144	10.235	11.8	-5.7	NO		NO	bb
2	2	180205M1_3	Standard	12.500	2.42	11389.154	14180.340	10.040	11.6	-7.5	NO		NO	bb
3	3	180205M1_4	Standard	12.500	2.41	11172.025	12421.671	11.242	13.0	3.6	NO		NO	bb
4	4	180205M1_5	Standard	12.500	2.41	11007.866	12960.338	10.617	12.2	-2.1	NO		NO	bb
5	5	180205M1_6	Standard	12.500	2.41	10975.869	12194.845	11.251	13.0	3.7	NO		NO	bb
6	6	180205M1_7	Standard	12.500	2.41	11146.144	12713.140	10.959	12.6	1.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	2.41	10337.492	12854.285	10.053	11.6	-7.3	NO		NO	bb
8	8	180205M1_9	Standard	12.500	2.41	10256.807	13082.049	9.800	11.3	-9.7	NO		NO	bb
9	9	180205M1_10	Standard	12.500	2.41	10776.180	10958.029	12.293	14.2	13.3	NO		NO	bb
10	10	180205M1_11	Standard	12.500	2.42	9816.358	10234.262	11.990	13.8	10.5	NO		NO	bb

Compound name: 13C3-PFBS
Response Factor: 0.109196
RRF SD: 0.00615716, Relative SD: 5.63862
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	2.69	1489.336	14207.144	1.310	12.0	-4.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	2.69	1446.984	14180.340	1.276	11.7	-6.6	NO		NO	bb
3	3	180205M1_4	Standard	12.500	2.69	1439.827	12421.671	1.449	13.3	6.2	NO		NO	bb
4	4	180205M1_5	Standard	12.500	2.69	1296.600	12960.338	1.251	11.5	-8.4	NO		NO	bb
5	5	180205M1_6	Standard	12.500	2.69	1378.333	12194.845	1.413	12.9	3.5	NO		NO	bb
6	6	180205M1_7	Standard	12.500	2.69	1425.968	12713.140	1.402	12.8	2.7	NO		NO	bb
7	7	180205M1_8	Standard	12.500	2.69	1371.053	12854.285	1.333	12.2	-2.3	NO		NO	bb
8	8	180205M1_9	Standard	12.500	2.69	1375.398	13082.049	1.314	12.0	-3.7	NO		NO	bb
9	9	180205M1_10	Standard	12.500	2.69	1263.901	10958.029	1.442	13.2	5.6	NO		NO	bb
10	10	180205M1_11	Standard	12.500	2.69	1195.437	10234.262	1.460	13.4	7.0	NO		NO	bb

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Compound name: 13C2-PFHxA
Response Factor: 0.694129
RRF SD: 0.034891, Relative SD: 5.02659
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	5.000	3.19	3881.163	14207.144	3.415	4.9	-1.6	NO		NO	bb
2	2	180205M1_3	Standard	5.000	3.19	3896.953	14180.340	3.435	4.9	-1.0	NO		NO	bb
3	3	180205M1_4	Standard	5.000	3.19	3459.113	12421.671	3.481	5.0	0.3	NO		NO	bb
4	4	180205M1_5	Standard	5.000	3.19	3349.376	12960.338	3.230	4.7	-6.9	NO		NO	bb
5	5	180205M1_6	Standard	5.000	3.19	3547.622	12194.845	3.636	5.2	4.8	NO		NO	bb
6	6	180205M1_7	Standard	5.000	3.19	3275.206	12713.140	3.220	4.6	-7.2	NO		NO	bb
7	7	180205M1_8	Standard	5.000	3.19	3579.075	12854.285	3.480	5.0	0.3	NO		NO	bb
8	8	180205M1_9	Standard	5.000	3.19	3564.416	13082.049	3.406	4.9	-1.9	NO		NO	bb
9	9	180205M1_10	Standard	5.000	3.19	3309.701	10958.029	3.775	5.4	8.8	NO		NO	bb
10	10	180205M1_11	Standard	5.000	3.19	2969.390	10234.262	3.627	5.2	4.5	NO		NO	bb

Compound name: 13C4-PFHpA
Response Factor: 0.69436
RRF SD: 0.0350604, Relative SD: 5.04931
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	3.81	9704.343	14207.144	8.538	12.3	-1.6	NO		NO	bb
2	2	180205M1_3	Standard	12.500	3.81	9665.984	14180.340	8.521	12.3	-1.8	NO		NO	bb
3	3	180205M1_4	Standard	12.500	3.81	8594.520	12421.671	8.649	12.5	-0.4	NO		NO	bb
4	4	180205M1_5	Standard	12.500	3.81	8220.954	12960.338	7.929	11.4	-8.6	NO		NO	bb
5	5	180205M1_6	Standard	12.500	3.81	9114.931	12194.845	9.343	13.5	7.6	NO		NO	bb
6	6	180205M1_7	Standard	12.500	3.81	8652.864	12713.140	8.508	12.3	-2.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	3.81	8671.175	12854.285	8.432	12.1	-2.8	NO		NO	bb
8	8	180205M1_9	Standard	12.500	3.81	8866.871	13082.049	8.472	12.2	-2.4	NO		NO	bb
9	9	180205M1_10	Standard	12.500	3.81	8074.834	10958.029	9.211	13.3	6.1	NO		NO	bb
10	10	180205M1_11	Standard	12.500	3.81	7525.935	10234.262	9.192	13.2	5.9	NO		NO	bb

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Compound name: 18O2-PFHxS
Response Factor: 0.349635
RRF SD: 0.0254804, Relative SD: 7.28774
Response type: Internal Std (Ref 59), 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	180205M1_2	Standard	12.500	3.96	987.703	3238.501	3.812	10.9	-12.8	NO		NO	bb
2	2	180205M1_3	Standard	12.500	3.96	1156.700	3065.263	4.717	13.5	7.9	NO		NO	bb
3	3	180205M1_4	Standard	12.500	3.96	1090.291	2846.284	4.788	13.7	9.6	NO		NO	bb
4	4	180205M1_5	Standard	12.500	3.96	1008.243	2991.896	4.212	12.0	-3.6	NO		NO	bb
5	5	180205M1_6	Standard	12.500	3.96	958.556	2884.804	4.153	11.9	-5.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	3.96	1005.380	2992.424	4.200	12.0	-3.9	NO		NO	bb
7	7	180205M1_8	Standard	12.500	3.96	1034.881	2744.141	4.714	13.5	7.9	NO		NO	bb
8	8	180205M1_9	Standard	12.500	3.96	989.567	2913.439	4.246	12.1	-2.9	NO		NO	bb
9	9	180205M1_10	Standard	12.500	3.96	1015.036	2751.815	4.611	13.2	5.5	NO		NO	bb
10	10	180205M1_11	Standard	12.500	3.96	832.334	2447.621	4.251	12.2	-2.7	NO		NO	bb

Compound name: 13C2-6:2 FTS
Response Factor: 0.242472
RRF SD: 0.0463263, Relative SD: 19.1058
Response type: Internal Std (Ref 60), Area * (IS Conc. / IS Area)
Curve type: RF

not used.

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180205M1_2	Standard	12.500	4.28	2835.686	12123.608	2.924	12.1	-3.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.28	2587.507	13477.624	2.400	9.9	-20.8	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.27	2627.709	10117.108	3.247	13.4	7.1	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.27	2638.727	12771.222	2.583	10.7	-14.8	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.27	2532.616	12492.501	2.534	10.5	-16.4	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.28	3132.019	12093.818	3.237	13.4	6.8	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.27	3157.143	12684.229	3.111	12.8	2.7	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.27	3842.022	11402.758	4.212	17.4	39.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.28	4803.687	10556.547	5.688	23.5	87.7	NO		NO	bbX
10	10	180205M1_11	Standard	12.500	4.28	6100.003	10748.326	7.094	29.3	134.1	NO		NO	bbX

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Compound name: 13C2-PFOA
Response Factor: 1.06934
RRF SD: 0.111591, Relative SD: 10.4355
Response type: Internal Std (Ref 60), 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	180205M1_2	Standard	12.500	4.33	14371.031	12123.608	14.817	13.9	10.9	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.33	12959.139	13477.624	12.019	11.2	-10.1	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.33	12753.312	10117.108	15.757	14.7	17.9	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.33	12828.711	12771.222	12.556	11.7	-6.1	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.33	11953.538	12492.501	11.961	11.2	-10.5	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.33	11925.250	12093.818	12.326	11.5	-7.8	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.33	12257.613	12684.229	12.080	11.3	-9.6	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.33	13066.736	11402.758	14.324	13.4	7.2	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.33	12344.222	10556.547	14.617	13.7	9.4	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.33	11359.581	10748.326	13.211	12.4	-1.2	NO		NO	bb

Compound name: 13C5-PFNA
Response Factor: 0.929137
RRF SD: 0.119735, Relative SD: 12.8867
Response type: Internal Std (Ref 61), 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	180205M1_2	Standard	12.500	4.76	11386.309	12074.349	11.788	12.7	1.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.76	12361.640	13534.756	11.417	12.3	-1.7	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.76	9874.763	9758.258	12.649	13.6	8.9	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.76	10621.063	10320.535	12.864	13.8	10.8	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.76	10309.997	10986.663	11.730	12.6	1.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.76	11520.252	11350.685	12.687	13.7	9.2	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.76	9323.253	13201.425	8.828	9.5	-24.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.76	10774.762	14456.489	9.317	10.0	-19.8	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.76	12012.619	13110.623	11.453	12.3	-1.4	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.76	9807.670	9141.967	13.410	14.4	15.5	NO		NO	bb

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Compound name: 13C8-PFOSA
Response Factor: 0.225978
RRF SD: 0.0125107, Relative SD: 5.53627
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	4.83	2998.812	13471.515	2.783	12.3	-1.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.83	2668.477	11548.412	2.888	12.8	2.3	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.83	3051.908	13419.694	2.843	12.6	0.6	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.83	2754.330	11848.722	2.906	12.9	2.9	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.83	2891.491	11713.126	3.086	13.7	9.2	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.83	2384.795	11993.388	2.486	11.0	-12.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.83	2298.451	10052.904	2.858	12.6	1.2	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.83	2844.106	12276.690	2.896	12.8	2.5	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.83	2504.160	11632.112	2.691	11.9	-4.7	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.83	2203.638	9796.340	2.812	12.4	-0.5	NO		NO	bb

Compound name: 13C8-PFOS
Response Factor: 1.04148
RRF SD: 0.0845141, Relative SD: 8.11479
Response type: Internal Std (Ref 62), 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	180205M1_2	Standard	12.500	4.85	3338.892	3131.725	13.327	12.8	2.4	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.85	3430.266	3507.721	12.224	11.7	-6.1	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.84	3144.039	2652.612	14.816	14.2	13.8	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.84	2693.524	2781.547	12.104	11.6	-7.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.85	2976.156	2723.605	13.659	13.1	4.9	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.85	2690.889	2578.392	13.045	12.5	0.2	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.84	2548.329	2857.920	11.146	10.7	-14.4	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.85	3309.513	3102.518	13.334	12.8	2.4	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.84	2663.184	2659.200	12.519	12.0	-3.8	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.85	2762.147	2464.244	14.011	13.5	7.6	NO		NO	bb

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Compound name: 13C2-PFDA
Response Factor: 1.21699
RRF SD: 0.147558, Relative SD: 12.1248
Response type: Internal Std (Ref 63), 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	180205M1_2	Standard	12.500	5.14	12269.099	8983.354	17.072	14.0	12.2	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.14	10364.091	9115.380	14.212	11.7	-6.6	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.13	10718.264	8214.631	16.310	13.4	7.2	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.13	10135.015	10021.978	12.641	10.4	-16.9	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.13	10742.281	8896.504	15.093	12.4	-0.8	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.14	10607.220	8253.126	16.065	13.2	5.6	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.13	8189.372	8712.786	11.749	9.7	-22.8	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.13	10135.432	7979.455	15.877	13.0	4.4	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.13	9683.636	6940.661	17.440	14.3	14.6	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.13	9066.951	7235.832	15.663	12.9	3.0	NO		NO	bb

Compound name: 13C2-8:2 FTS
Response Factor: 0.131175
RRF SD: 0.0183926, Relative SD: 14.0214
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: RF

not used.

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180205M1_2	Standard	12.500	5.11	1857.069	14207.144	1.634	12.5	-0.4	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.11	1500.450	14180.340	1.323	10.1	-19.3	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.11	1356.665	12421.671	1.365	10.4	-16.7	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.11	1615.185	12960.338	1.558	11.9	-5.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.11	1774.302	12194.845	1.819	13.9	10.9	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.11	1640.737	12713.140	1.613	12.3	-1.6	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.11	1864.799	12854.285	1.813	13.8	10.6	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.11	2085.309	13082.049	1.993	15.2	21.5	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.11	3231.662	10958.029	3.686	28.1	124.8	NO		NO	bbX
10	10	180205M1_11	Standard	12.500	5.11	4055.760	10234.262	4.954	37.8	202.1	NO		NO	bbX

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Compound name: d3-N-MeFOSAA
Response Factor: 0.432488
RRF SD: 0.039235, Relative SD: 9.07192
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	5.28	5680.184	13471.515	5.271	12.2	-2.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.28	4759.048	11548.412	5.151	11.9	-4.7	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.28	5587.407	13419.694	5.204	12.0	-3.7	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.28	4581.280	11848.722	4.833	11.2	-10.6	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.28	5203.623	11713.126	5.553	12.8	2.7	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.28	5076.342	11993.388	5.291	12.2	-2.1	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.28	5354.088	10052.904	6.657	15.4	23.1	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.28	5533.306	12276.690	5.634	13.0	4.2	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.28	4874.869	11632.112	5.239	12.1	-3.1	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.28	4097.078	9796.340	5.228	12.1	-3.3	NO		NO	bb

Compound name: d5-N-EtFOSAA
Response Factor: 0.476045
RRF SD: 0.0590219, Relative SD: 12.3984
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	5.44	5188.511	13471.515	4.814	10.1	-19.1	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.44	6589.299	11548.412	7.132	15.0	19.9	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.43	6153.969	13419.694	5.732	12.0	-3.7	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.43	4993.854	11848.722	5.268	11.1	-11.5	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.43	5892.494	11713.126	6.288	13.2	5.7	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.44	5905.468	11993.388	6.155	12.9	3.4	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.43	5570.528	10052.904	6.927	14.6	16.4	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.43	6143.439	12276.690	6.255	13.1	5.1	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.43	4975.161	11632.112	5.346	11.2	-10.2	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.43	4378.664	9796.340	5.587	11.7	-6.1	NO		NO	bb

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Compound name: 13C2-PFUdA
Response Factor: 0.969232
RRF SD: 0.175627, Relative SD: 18.1202
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	5.46	13346.800	13471.515	12.384	12.8	2.2	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.46	15079.640	11548.412	16.322	16.8	34.7	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.46	8809.350	13419.694	8.206	8.5	-32.3	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.45	10741.879	11848.722	11.332	11.7	-6.5	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.45	11360.022	11713.126	12.123	12.5	0.1	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.46	12255.931	11993.388	12.774	13.2	5.4	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.45	10991.827	10052.904	13.667	14.1	12.8	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.46	9490.228	12276.690	9.663	10.0	-20.2	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.46	10915.595	11632.112	11.730	12.1	-3.2	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.46	10150.924	9796.340	12.952	13.4	6.9	NO		NO	bb

Compound name: 13C2-PFDoA
Response Factor: 0.605084
RRF SD: 0.0654597, Relative SD: 10.8183
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	5.74	8210.017	13471.515	7.618	12.6	0.7	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.74	6068.220	11548.412	6.568	10.9	-13.2	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.74	6999.638	13419.694	6.520	10.8	-13.8	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.74	8286.914	11848.722	8.742	14.4	15.6	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.74	7532.835	11713.126	8.039	13.3	6.3	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.74	7913.522	11993.388	8.248	13.6	9.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.74	6421.619	10052.904	7.985	13.2	5.6	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.74	6474.625	12276.690	6.592	10.9	-12.8	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.74	6571.548	11632.112	7.062	11.7	-6.6	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.73	6474.451	9796.340	8.261	13.7	9.2	NO		NO	bb

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Compound name: d3-N-MeFOSA
Response Factor: 0.115554
RRF SD: 0.0102483, Relative SD: 8.86888
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	150.000	5.86	16925.346	13471.515	15.705	135.9	-9.4	NO		NO	bb
2	2	180205M1_3	Standard	150.000	5.86	17038.336	11548.412	18.442	159.6	6.4	NO		NO	bb
3	3	180205M1_4	Standard	150.000	5.86	16428.209	13419.694	15.302	132.4	-11.7	NO		NO	bd
4	4	180205M1_5	Standard	150.000	5.86	15710.326	11848.722	16.574	143.4	-4.4	NO		NO	bb
5	5	180205M1_6	Standard	150.000	5.86	15942.768	11713.126	17.014	147.2	-1.8	NO		NO	bb
6	6	180205M1_7	Standard	150.000	5.86	16495.656	11993.388	17.192	148.8	-0.8	NO		NO	bb
7	7	180205M1_8	Standard	150.000	5.86	16096.688	10052.904	20.015	173.2	15.5	NO		NO	bb
8	8	180205M1_9	Standard	150.000	5.86	16082.778	12276.690	16.375	141.7	-5.5	NO		NO	bb
9	9	180205M1_10	Standard	150.000	5.86	16069.375	11632.112	17.268	149.4	-0.4	NO		NO	bb
10	10	180205M1_11	Standard	150.000	5.86	15237.344	9796.340	19.443	168.3	12.2	NO		NO	bb

Compound name: 13C2-PFTeDA
Response Factor: 0.330996
RRF SD: 0.0535828, Relative SD: 16.1884
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	6.20	4771.891	13471.515	4.428	13.4	7.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	6.20	4105.897	11548.412	4.444	13.4	7.4	NO		NO	bb
3	3	180205M1_4	Standard	12.500	6.19	3328.105	13419.694	3.100	9.4	-25.1	NO		NO	bb
4	4	180205M1_5	Standard	12.500	6.20	3159.379	11848.722	3.333	10.1	-19.4	NO		NO	bb
5	5	180205M1_6	Standard	12.500	6.19	3818.064	11713.126	4.075	12.3	-1.5	NO		NO	bb
6	6	180205M1_7	Standard	12.500	6.20	3633.151	11993.388	3.787	11.4	-8.5	NO		NO	bb
7	7	180205M1_8	Standard	12.500	6.19	3809.837	10052.904	4.737	14.3	14.5	NO		NO	bb
8	8	180205M1_9	Standard	12.500	6.19	3638.601	12276.690	3.705	11.2	-10.5	NO		NO	bb
9	9	180205M1_10	Standard	12.500	6.19	4154.956	11632.112	4.465	13.5	7.9	NO		NO	bb
10	10	180205M1_11	Standard	12.500	6.19	4154.664	9796.340	5.301	16.0	28.1	NO		NO	bb

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Compound name: d5-N-ETFOSA
Response Factor: 0.171452
RRF SD: 0.0135608, Relative SD: 7.90941
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	150.000	6.23	26027.631	13471.515	24.151	140.9	-6.1	NO		NO	bb
2	2	180205M1_3	Standard	150.000	6.23	25818.020	11548.412	27.945	163.0	8.7	NO		NO	bb
3	3	180205M1_4	Standard	150.000	6.23	25200.258	13419.694	23.473	136.9	-8.7	NO		NO	bb
4	4	180205M1_5	Standard	150.000	6.23	24076.467	11848.722	25.400	148.1	-1.2	NO		NO	bb
5	5	180205M1_6	Standard	150.000	6.23	24555.996	11713.126	26.206	152.8	1.9	NO		NO	bb
6	6	180205M1_7	Standard	150.000	6.23	25061.127	11993.388	26.120	152.3	1.6	NO		NO	bb
7	7	180205M1_8	Standard	150.000	6.23	24085.705	10052.904	29.949	174.7	16.5	NO		NO	bb
8	8	180205M1_9	Standard	150.000	6.23	24006.668	12276.690	24.443	142.6	-5.0	NO		NO	bb
9	9	180205M1_10	Standard	150.000	6.23	21913.373	11632.112	23.548	137.3	-8.4	NO		NO	bb
10	10	180205M1_11	Standard	150.000	6.23	20331.387	9796.340	25.943	151.3	0.9	NO		NO	bb

Compound name: 13C2-PFHxDA
Response Factor: 0.57711
RRF SD: 0.102069, Relative SD: 17.6863
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	5.000	6.51	2897.898	13471.515	2.689	4.7	-6.8	NO		NO	bb
2	2	180205M1_3	Standard	5.000	6.51	2721.910	11548.412	2.946	5.1	2.1	NO		NO	bb
3	3	180205M1_4	Standard	5.000	6.51	2311.265	13419.694	2.153	3.7	-25.4	NO		NO	bb
4	4	180205M1_5	Standard	5.000	6.51	2571.405	11848.722	2.713	4.7	-6.0	NO		NO	bb
5	5	180205M1_6	Standard	5.000	6.51	2691.708	11713.126	2.873	5.0	-0.5	NO		NO	bb
6	6	180205M1_7	Standard	5.000	6.51	2425.339	11993.388	2.528	4.4	-12.4	NO		NO	bb
7	7	180205M1_8	Standard	5.000	6.51	2730.820	10052.904	3.396	5.9	17.7	NO		NO	bb
8	8	180205M1_9	Standard	5.000	6.51	2704.692	12276.690	2.754	4.8	-4.6	NO		NO	bb
9	9	180205M1_10	Standard	5.000	6.51	3647.339	11632.112	3.919	6.8	35.8	NO		NO	bb
10	10	180205M1_11	Standard	5.000	6.51	3801.264	9796.340	4.850	8.4	68.1	NO		NO	bbX

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Compound name: d7-N-MeFOSE
Response Factor: 0.151782
RRF SD: 0.0183037, Relative SD: 12.0592
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	150.000	6.33	23052.748	13471.515	21.390	140.9	-6.0	NO		NO	bb
2	2	180205M1_3	Standard	150.000	6.33	22611.672	11548.412	24.475	161.2	7.5	NO		NO	bb
3	3	180205M1_4	Standard	150.000	6.33	17689.697	13419.694	16.477	108.6	-27.6	NO		NO	bb
4	4	180205M1_5	Standard	150.000	6.33	20920.285	11848.722	22.070	145.4	-3.1	NO		NO	bb
5	5	180205M1_6	Standard	150.000	6.33	24092.709	11713.126	25.711	169.4	12.9	NO		NO	bb
6	6	180205M1_7	Standard	150.000	6.33	22459.658	11993.388	23.408	154.2	2.8	NO		NO	bb
7	7	180205M1_8	Standard	150.000	6.33	20572.127	10052.904	25.580	168.5	12.4	NO		NO	bb
8	8	180205M1_9	Standard	150.000	6.33	22460.768	12276.690	22.869	150.7	0.4	NO		NO	bb
9	9	180205M1_10	Standard	150.000	6.33	19651.977	11632.112	21.118	139.1	-7.2	NO		NO	bd
10	10	180205M1_11	Standard	150.000	6.33	19258.752	9796.340	24.574	161.9	7.9	NO		NO	bb

Compound name: d9-N-EtFOSE
Response Factor: 0.142173
RRF SD: 0.0235612, Relative SD: 16.5722
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	150.000	6.48	18544.109	13471.515	17.207	121.0	-19.3	NO		NO	bb
2	2	180205M1_3	Standard	150.000	6.48	19239.158	11548.412	20.824	146.5	-2.4	NO		NO	bb
3	3	180205M1_4	Standard	150.000	6.47	21501.225	13419.694	20.028	140.9	-6.1	NO		NO	bb
4	4	180205M1_5	Standard	150.000	6.47	18488.846	11848.722	19.505	137.2	-8.5	NO		NO	bb
5	5	180205M1_6	Standard	150.000	6.47	22763.021	11713.126	24.292	170.9	13.9	NO		NO	bb
6	6	180205M1_7	Standard	150.000	6.48	17412.133	11993.388	18.148	127.6	-14.9	NO		NO	bd
7	7	180205M1_8	Standard	150.000	6.47	22968.930	10052.904	28.560	200.9	33.9	NO		NO	bb
8	8	180205M1_9	Standard	150.000	6.47	17803.889	12276.690	18.128	127.5	-15.0	NO		NO	bd
9	9	180205M1_10	Standard	150.000	6.47	20987.322	11632.112	22.553	158.6	5.8	NO		NO	bb
10	10	180205M1_11	Standard	150.000	6.47	18820.041	9796.340	24.014	168.9	12.6	NO		NO	bd

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Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 57), 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	180205M1_2	Standard	12.500	1.45	10944.880	10944.880	12.500	12.5	0.0	NO		NO	MM
2	2	180205M1_3	Standard	12.500	1.45	11400.695	11400.695	12.500	12.5	0.0	NO		NO	MM
3	3	180205M1_4	Standard	12.500	1.45	10634.419	10634.419	12.500	12.5	0.0	NO		NO	MM
4	4	180205M1_5	Standard	12.500	1.45	10529.709	10529.709	12.500	12.5	0.0	NO		NO	MM
5	5	180205M1_6	Standard	12.500	1.45	11065.528	11065.528	12.500	12.5	0.0	NO		NO	MM
6	6	180205M1_7	Standard	12.500	1.45	10998.306	10998.306	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	1.45	10624.597	10624.597	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	1.45	10957.186	10957.186	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	1.45	10780.186	10780.186	12.500	12.5	0.0	NO		NO	MM
10	10	180205M1_11	Standard	12.500	1.45	10600.861	10600.861	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	3.19	14207.144	14207.144	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	3.19	14180.340	14180.340	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	3.19	12421.671	12421.671	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	3.19	12960.338	12960.338	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	3.19	12194.845	12194.845	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	3.19	12713.140	12713.140	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	3.19	12854.285	12854.285	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	3.19	13082.049	13082.049	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	3.19	10958.029	10958.029	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	3.19	10234.262	10234.262	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C3-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 59), 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	180205M1_2	Standard	12.500	3.96	3238.501	3238.501	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	3.96	3065.263	3065.263	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	3.96	2846.284	2846.284	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	3.96	2991.896	2991.896	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	3.96	2884.804	2884.804	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	3.96	2992.424	2992.424	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	3.96	2744.141	2744.141	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	3.96	2913.439	2913.439	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	3.96	2751.815	2751.815	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	3.96	2447.621	2447.621	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 60), 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	180205M1_2	Standard	12.500	4.33	12123.608	12123.608	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.33	13477.624	13477.624	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.33	10117.108	10117.108	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.33	12771.222	12771.222	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.33	12492.501	12492.501	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.33	12093.818	12093.818	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.33	12684.229	12684.229	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.33	11402.758	11402.758	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.33	10556.547	10556.547	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.33	10748.326	10748.326	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 61), 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	180205M1_2	Standard	12.500	4.76	12074.349	12074.349	12.500	12.5	0.0	NO		NO	MM
2	2	180205M1_3	Standard	12.500	4.76	13534.756	13534.756	12.500	12.5	0.0	NO		NO	MM
3	3	180205M1_4	Standard	12.500	4.76	9758.258	9758.258	12.500	12.5	0.0	NO		NO	MM
4	4	180205M1_5	Standard	12.500	4.76	10320.535	10320.535	12.500	12.5	0.0	NO		NO	MM
5	5	180205M1_6	Standard	12.500	4.76	10986.663	10986.663	12.500	12.5	0.0	NO		NO	MM
6	6	180205M1_7	Standard	12.500	4.76	11350.685	11350.685	12.500	12.5	0.0	NO		NO	MM
7	7	180205M1_8	Standard	12.500	4.76	13201.425	13201.425	12.500	12.5	0.0	NO		NO	MM
8	8	180205M1_9	Standard	12.500	4.76	14456.489	14456.489	12.500	12.5	0.0	NO		NO	MM
9	9	180205M1_10	Standard	12.500	4.76	13110.623	13110.623	12.500	12.5	0.0	NO		NO	MM
10	10	180205M1_11	Standard	12.500	4.76	9141.967	9141.967	12.500	12.5	0.0	NO		NO	MM

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 62), 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	180205M1_2	Standard	12.500	4.85	3131.725	3131.725	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.84	3507.721	3507.721	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.84	2652.612	2652.612	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.84	2781.547	2781.547	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.84	2723.605	2723.605	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.84	2578.392	2578.392	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.84	2857.920	2857.920	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.84	3102.518	3102.518	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.84	2659.200	2659.200	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.84	2464.244	2464.244	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 63), 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	180205M1_2	Standard	12.500	5.13	8983.354	8983.354	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.14	9115.380	9115.380	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.13	8214.631	8214.631	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.13	10021.978	10021.978	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.13	8896.504	8896.504	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.14	8253.126	8253.126	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.13	8712.786	8712.786	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.13	7979.455	7979.455	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.13	6940.661	6940.661	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.13	7235.832	7235.832	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	5.46	13471.515	13471.515	12.500	12.5	0.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	5.46	11548.412	11548.412	12.500	12.5	0.0	NO		NO	bb
3	3	180205M1_4	Standard	12.500	5.45	13419.694	13419.694	12.500	12.5	0.0	NO		NO	bb
4	4	180205M1_5	Standard	12.500	5.45	11848.722	11848.722	12.500	12.5	0.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	5.45	11713.126	11713.126	12.500	12.5	0.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	5.46	11993.388	11993.388	12.500	12.5	0.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	5.45	10052.904	10052.904	12.500	12.5	0.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	5.45	12276.690	12276.690	12.500	12.5	0.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	5.46	11632.112	11632.112	12.500	12.5	0.0	NO		NO	bb
10	10	180205M1_11	Standard	12.500	5.45	9796.340	9796.340	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Compound name: 13C2-4:2 FTS
Response Factor: 0.286903
RRF SD: 0.135897, Relative SD: 47.3669
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: RF

not used.

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	180205M1_2	Standard	12.500	3.10	3174.638	14207.144	2.793	9.7	-22.1	NO		NO	bb
2	2	180205M1_3	Standard	12.500	3.10	3023.639	14180.340	2.665	9.3	-25.7	NO		NO	bb
3	3	180205M1_4	Standard	12.500	3.10	2703.209	12421.671	2.720	9.5	-24.1	NO		NO	bb
4	4	180205M1_5	Standard	12.500	3.10	2887.699	12960.338	2.785	9.7	-22.3	NO		NO	bb
5	5	180205M1_6	Standard	12.500	3.10	2420.153	12194.845	2.481	8.6	-30.8	NO		NO	bb
6	6	180205M1_7	Standard	12.500	3.10	2771.986	12713.140	2.726	9.5	-24.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	3.10	3118.340	12854.285	3.032	10.6	-15.4	NO		NO	bb
8	8	180205M1_9	Standard	12.500	3.10	3567.199	13082.049	3.408	11.9	-5.0	NO		NO	bb
9	9	180205M1_10	Standard	12.500	3.10	4864.248	10958.029	5.549	19.3	54.7	NO		NO	bb
10	10	180205M1_11	Standard	12.500	3.10	6306.918	10234.262	7.703	26.8	114.8	NO		NO	bb

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Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	34	0.9988	NO	
2	2	PFPeA	35	0.9996	NO	
3	3	PFBS	36	0.9993	NO	
4	4	4:2 FTS	36	0.9994	NO	
5	5	PFHxA	37	0.9999	NO	
6	6	PFPeS	36	0.9943	NO	
7	7	PFHpA	38	0.9985	NO	
8	8	L-PFHxS	39	0.9993	NO	
9	10	6:2 FTS	41	0.9990	NO	
10	11	L-PFOA	41	0.9949	NO	
11	13	PFHpS	44	0.9989	NO	
12	14	PFNA	42	0.9997	NO	
13	15	PFOSA	43	0.9925	NO	
14	16	L-PFOS	44	0.9920	NO	
15	18	PFDA	45	0.9971	NO	
16	19	8:2 FTS	41	0.9991	NO	
17	20	PFNS	44	0.9930	NO	
18	21	N-MeFOSAA	47	0.9988	NO	
19	22	N-EtFOSAA	48	0.9973	NO	
20	23	PFUdA	49	0.9976	NO	
21	24	PFDS	50	0.9958	NO	
22	25	PFDoA	50	0.9991	NO	
23	26	N-MeFOSA	51	0.9949	NO	
24	27	PFTrDA	52	0.9939	NO	
25	28	PFTeDA	52	0.9950	NO	
26	29	N-EtFOSA	53	0.9995	NO	
27	30	PFHxDA	54	0.9987	NO	
28	31	PFODA	54	0.9959	NO	
29	32	N-MeFOSE	55	0.9997	NO	
30	33	N-EtFOSE	56	0.9974	NO	
31	34	13C3-PFBA	57		NO	3.626

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

	#	Name	IS#	CoD	CoD Flag	%RSD
32	35	13C3-PFPeA	58		NO	7.854
33	36	13C3-PFBS	58		NO	5.639
34	37	13C2-PFHxA	58		NO	5.027
35	38	13C4-PFHpA	58		NO	5.049
36	39	18O2-PFHxS	59		NO	7.288
37	40	13C2-6:2 FTS	60		NO	19.106
38	41	13C2-PFOA	60		NO	10.435
39	42	13C5-PFNA	61		NO	12.887
40	43	13C8-PFOSA	64		NO	5.536
41	44	13C8-PFOS	62		NO	8.115
42	45	13C2-PFDA	63		NO	12.125
43	46	13C2-8:2 FTS	58		NO	14.021
44	47	d3-N-MeFOSAA	64		NO	9.072
45	48	d5-N-EtFOSAA	64		NO	12.398
46	49	13C2-PFUdA	64		NO	18.120
47	50	13C2-PFDoA	64		NO	10.818
48	51	d3-N-MeFOSA	64		NO	8.869
49	52	13C2-PFTeDA	64		NO	16.188
50	53	d5-N-ETFOSA	64		NO	7.909
51	54	13C2-PFHxDA	64		NO	17.686
52	55	d7-N-MeFOSE	64		NO	12.059
53	56	d9-N-EtFOSE	64		NO	16.572
54	57	13C4-PFBA	57		NO	0.000
55	58	13C5-PFHxA	58		NO	0.000
56	59	13C3-PFHxS	59		NO	0.000
57	60	13C8-PFOA	60		NO	0.000
58	61	13C9-PFNA	61		NO	0.000
59	62	13C4-PFOS	62		NO	0.000
60	63	13C6-PFDA	63		NO	0.000
61	64	13C7-PFUdA	64		NO	0.000
62	72	13C2-4:2 FTS	58		NO	47.367

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Dataset: Untitled

Last Altered: Tuesday, February 06, 2018 09:00:10 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:00:46 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 08:49:29

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180205M1_1	IPA	05-Feb-18	11:53:14
2	180205M1_2	ST180205M1-1 PFC CS-2 18A3007	05-Feb-18	12:04:38
3	180205M1_3	ST180205M1-2 PFC CS-1 18A3008	05-Feb-18	12:16:04
4	180205M1_4	ST180205M1-3 PFC CS0 18A3009	05-Feb-18	12:27:31
5	180205M1_5	ST180205M1-4 PFC CS1 18A3010	05-Feb-18	12:38:58
6	180205M1_6	ST180205M1-5 PFC CS2 18A3011	05-Feb-18	12:50:27
7	180205M1_7	ST180205M1-6 PFC CS3 18A3012	05-Feb-18	13:01:56
8	180205M1_8	ST180205M1-7 PFC CS4 18A3013	05-Feb-18	13:13:25
9	180205M1_9	ST180205M1-8 PFC CS5 18A3014	05-Feb-18	13:24:55
10	180205M1_10	ST180205M1-9 PFC CS6 18A3015	05-Feb-18	13:36:22
11	180205M1_11	ST180205M1-10 PFC CS7 18A3016	05-Feb-18	13:47:52
12	180205M1_12	IPA	05-Feb-18	13:59:22
13	180205M1_13	ICV180205M1-1 PFC ICV 18A3006	05-Feb-18	14:10:49

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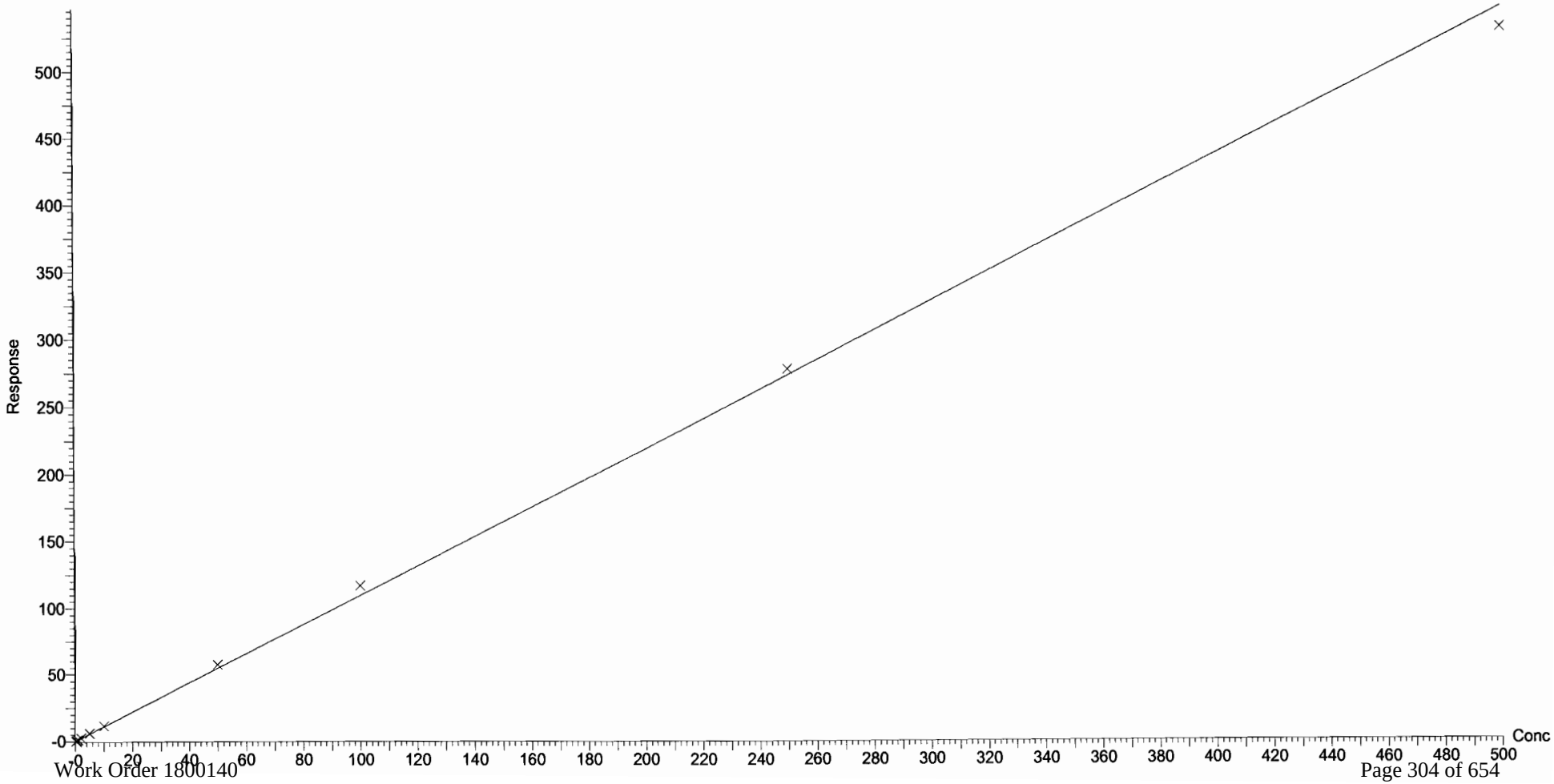
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 08:49:29

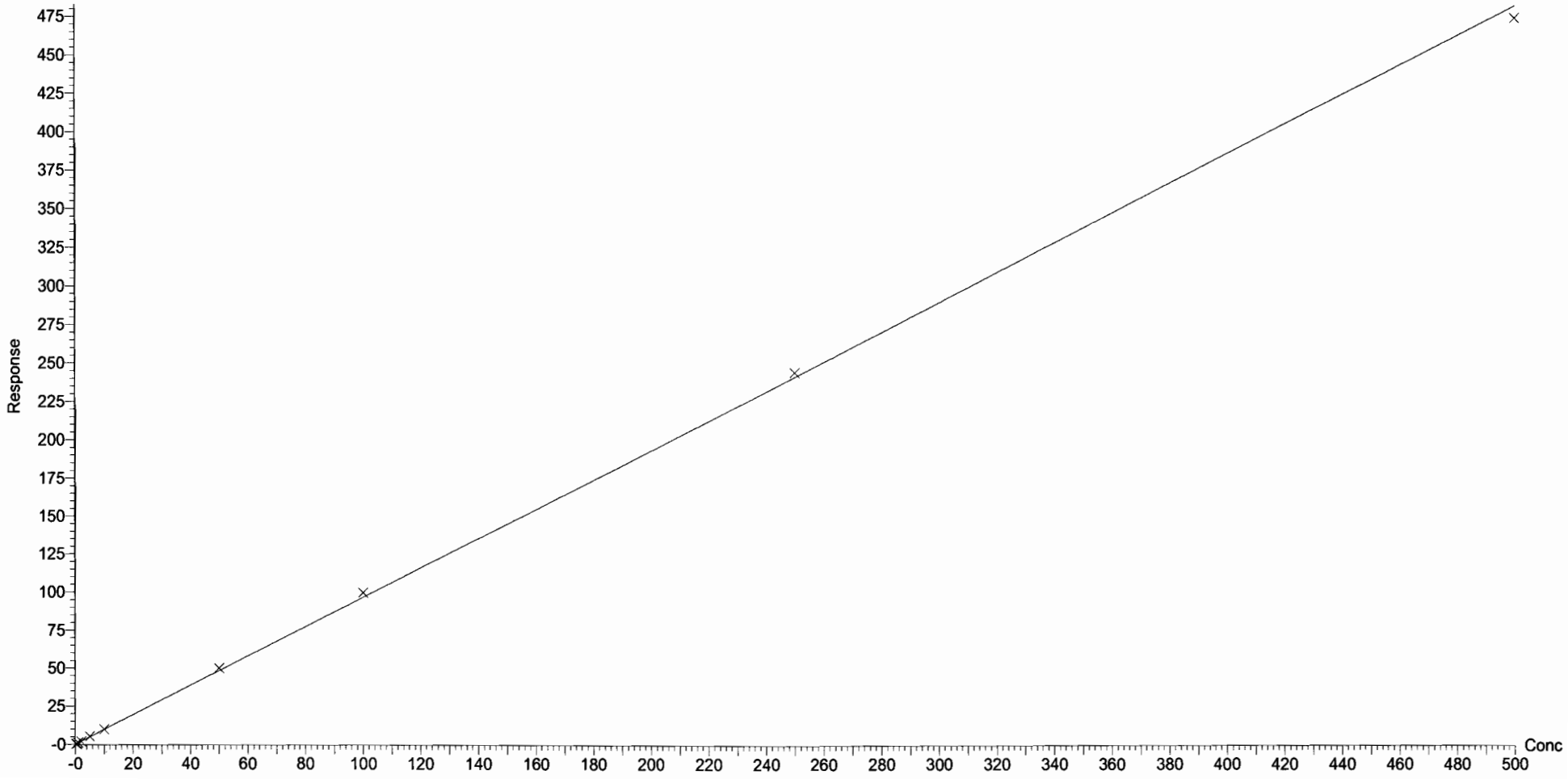
Compound name: PFBA
Correlation coefficient: r = 0.999386, r^2 = 0.998773
Calibration curve: 1.09309 * x + 0.0259553
Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

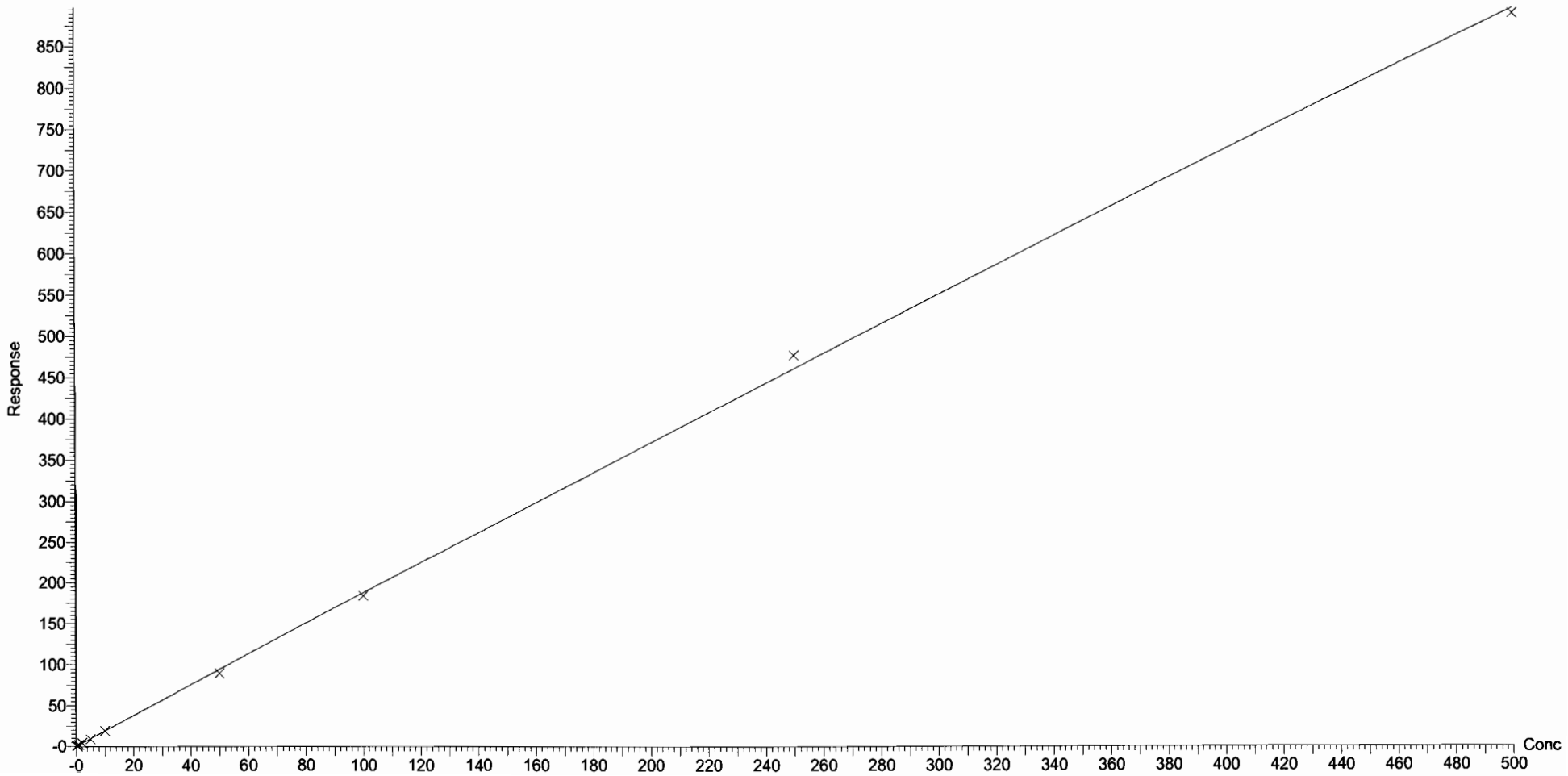
Compound name: PFPeA
Correlation coefficient: r = 0.999812, r^2 = 0.999624
Calibration curve: 0.964836 * x + 0.0930119
Response type: Internal Std (Ref 35), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

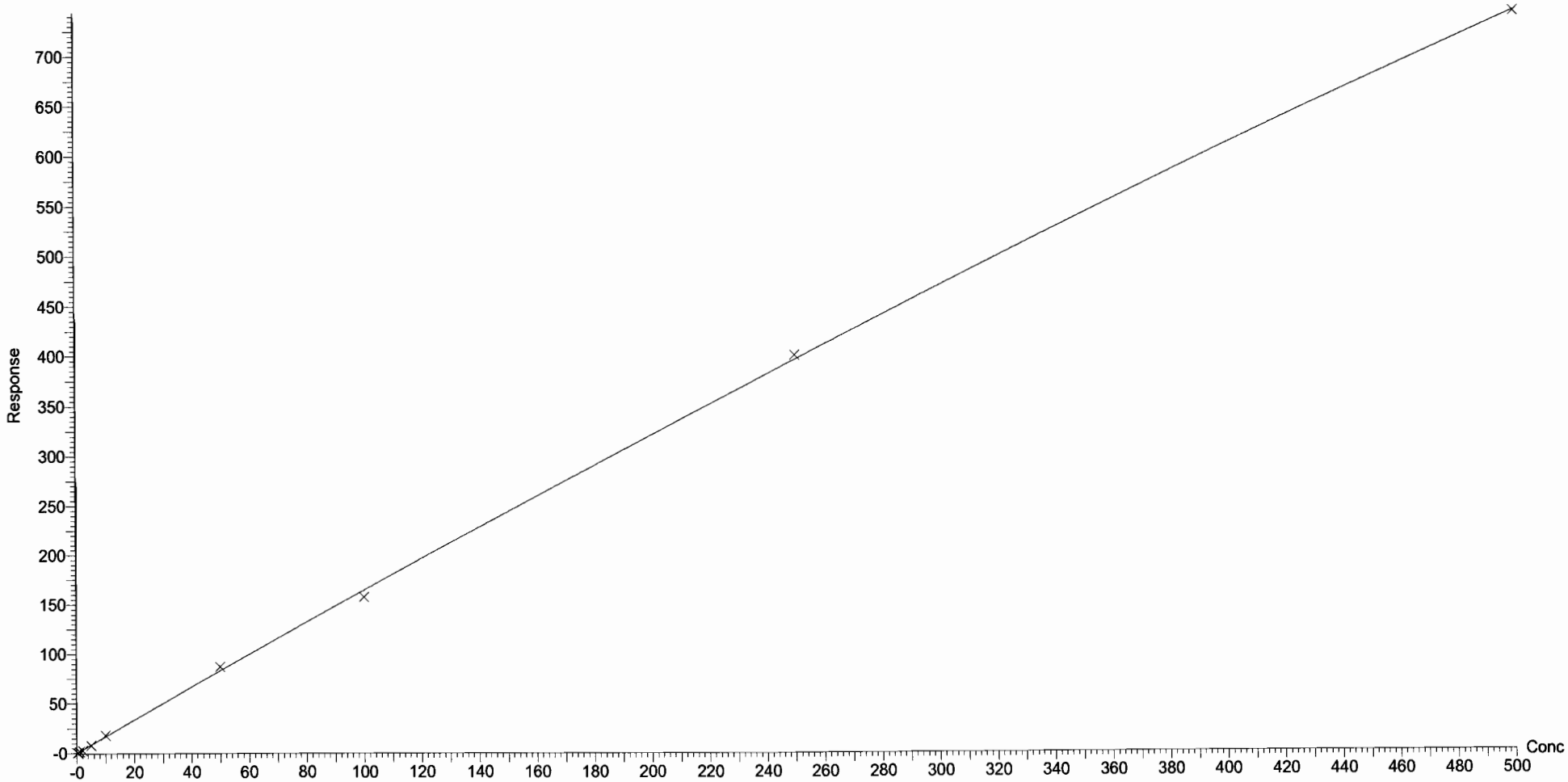
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999344
Calibration curve: -0.00019974 * x^2 + 1.89439 * x + -0.0235196
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

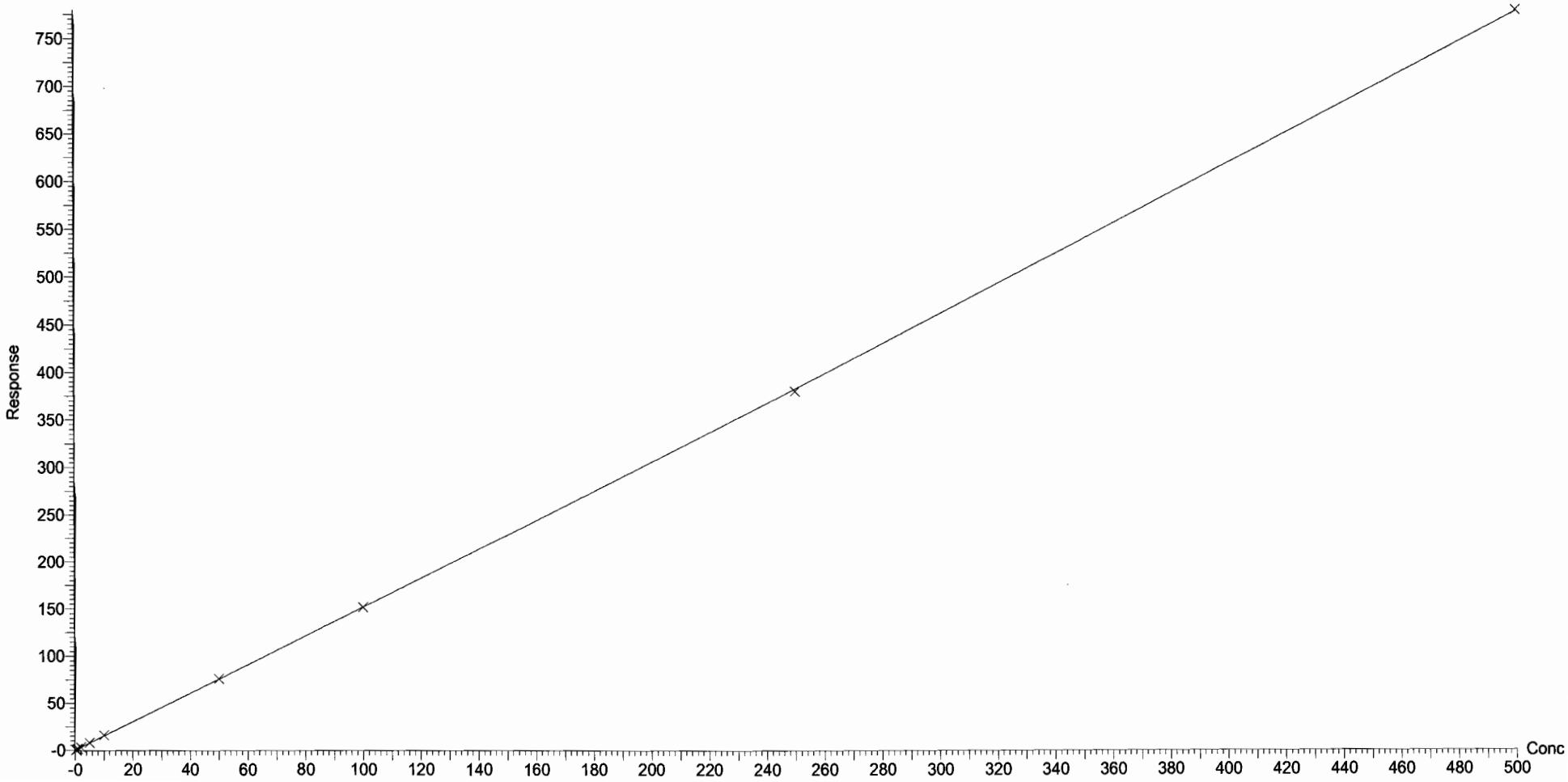
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999379
Calibration curve: -0.000386556 * x^2 + 1.68052 * x + -0.0388557
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

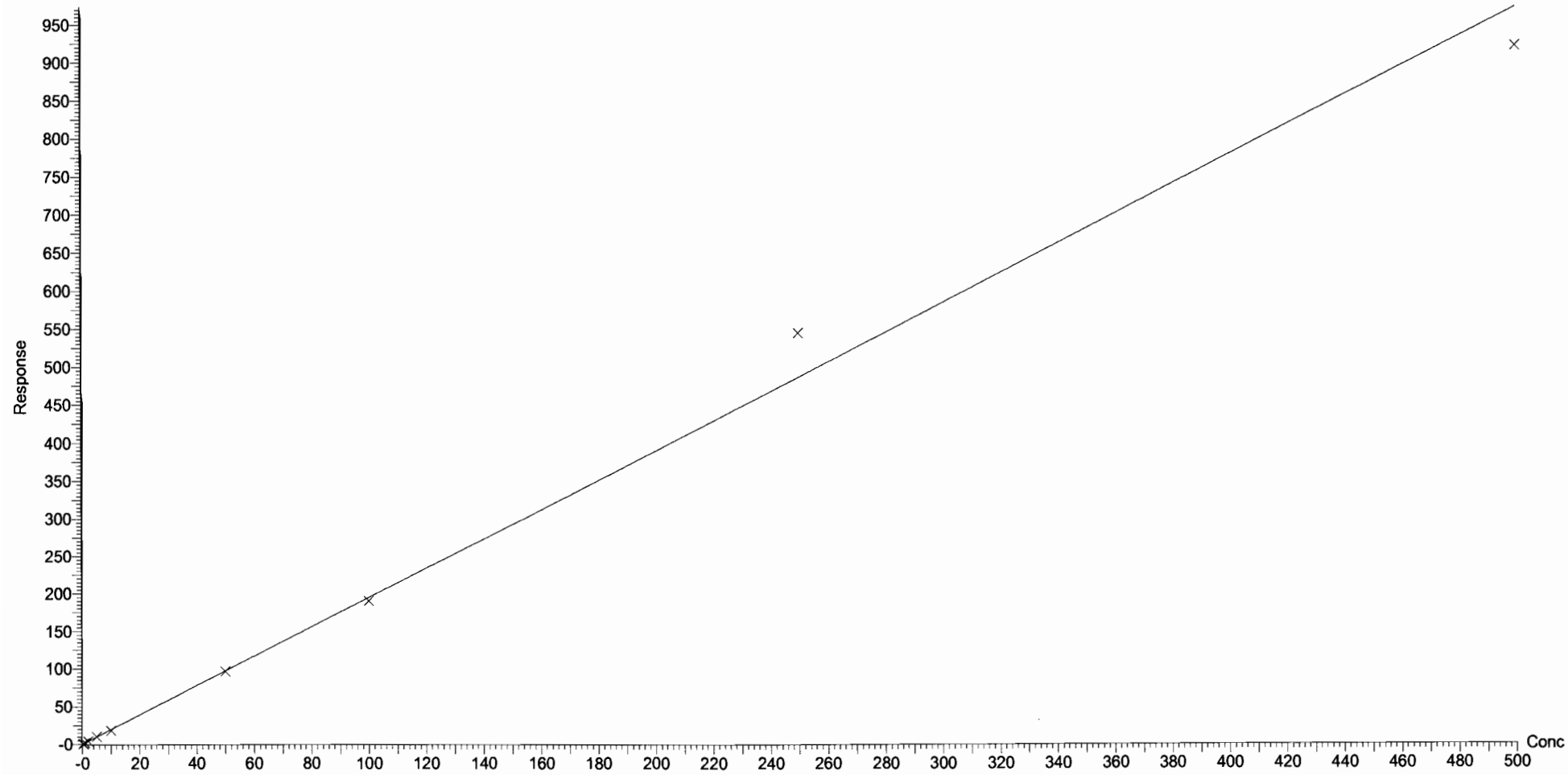
Compound name: PFHxA
Coefficient of Determination: R^2 = 0.999926
Calibration curve: 0.000103819 * x^2 + 1.50456 * x + 0.0461584
Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

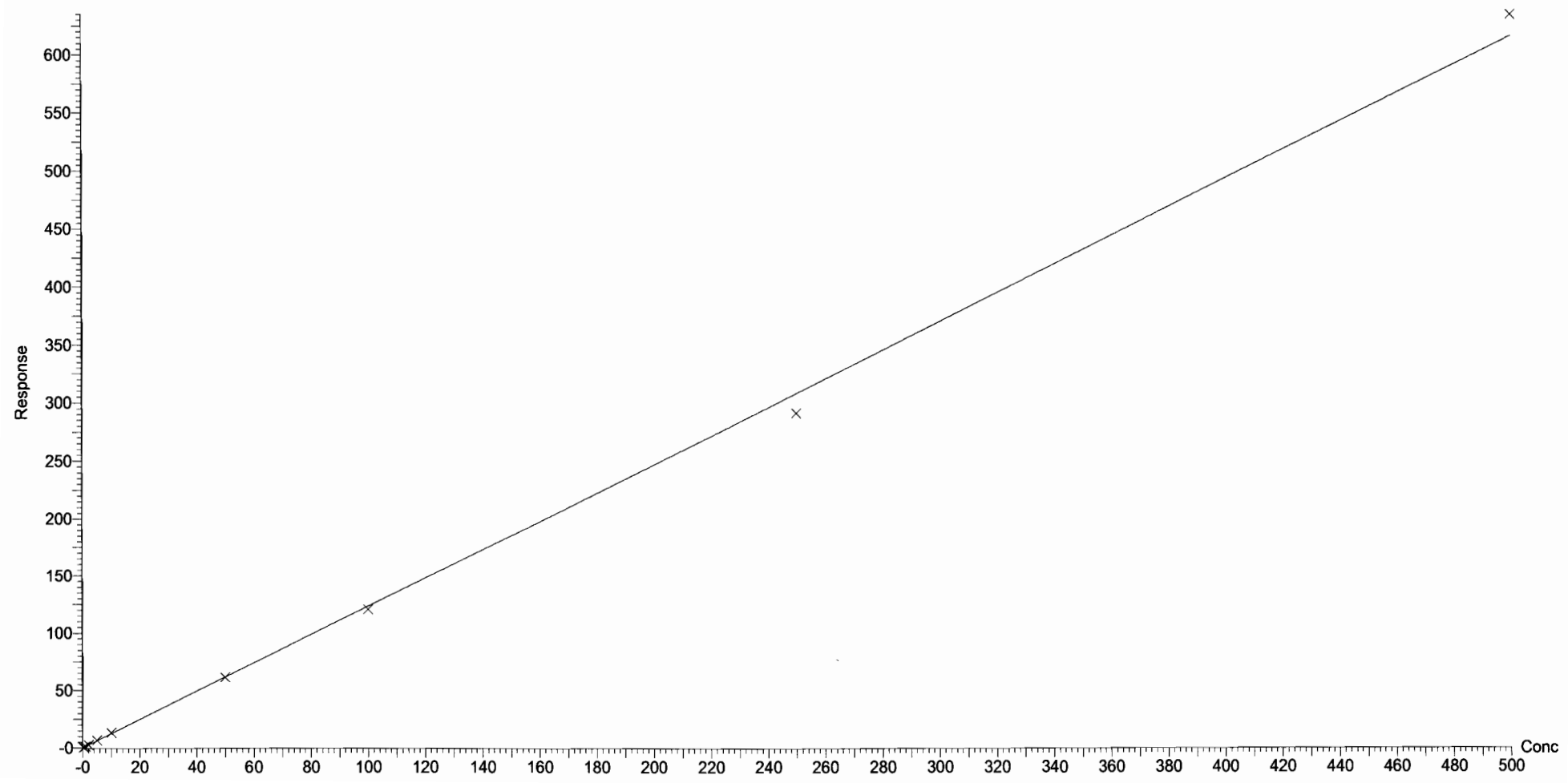
Compound name: PFPeS
Correlation coefficient: r = 0.997169, r^2 = 0.994345
Calibration curve: 1.94685 * x + 0.126058
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

Compound name: PFHpA
Correlation coefficient: r = 0.999256, r^2 = 0.998512
Calibration curve: 1.23316 * x + 0.0812379
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



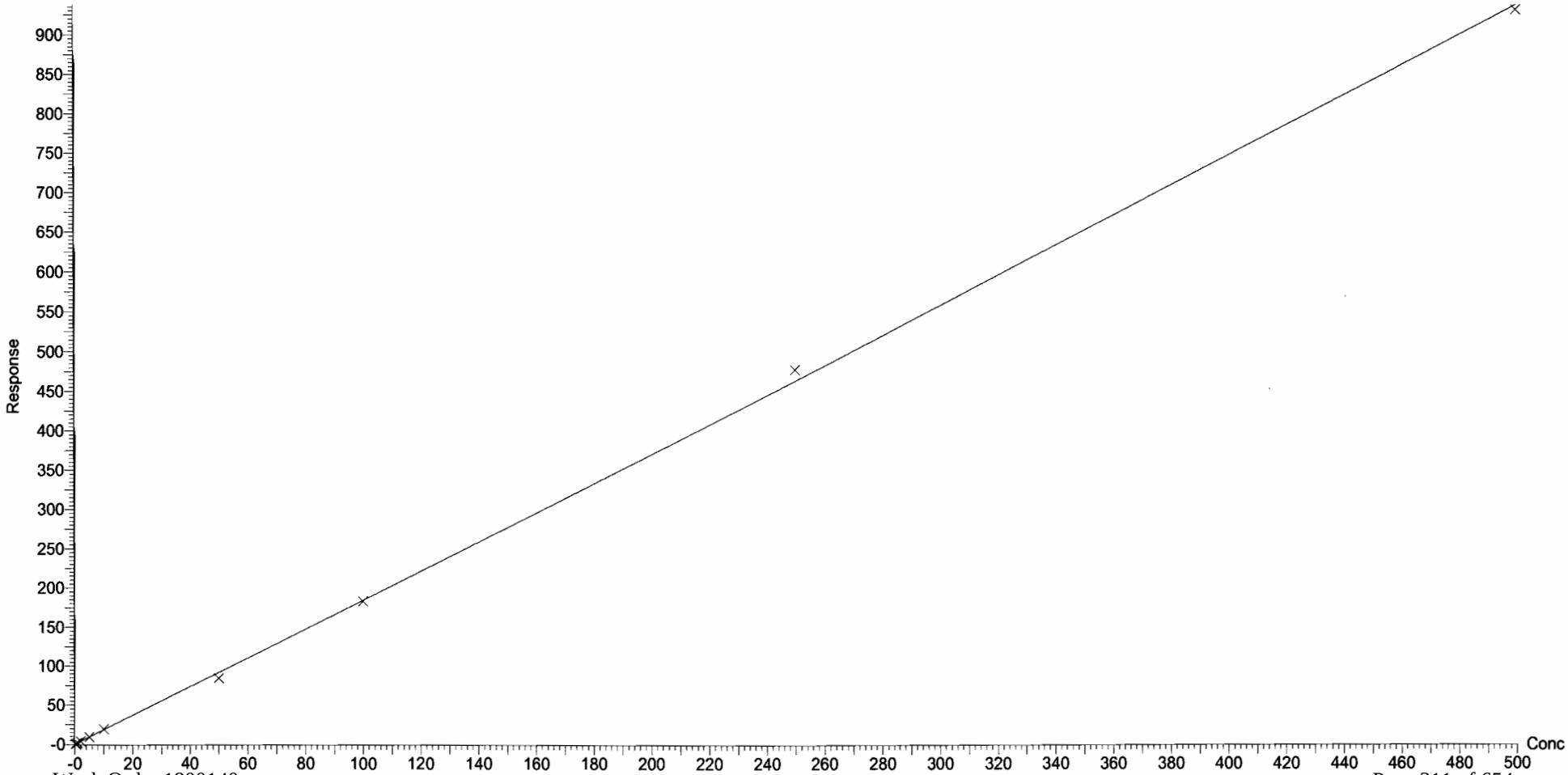
Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:07:42 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

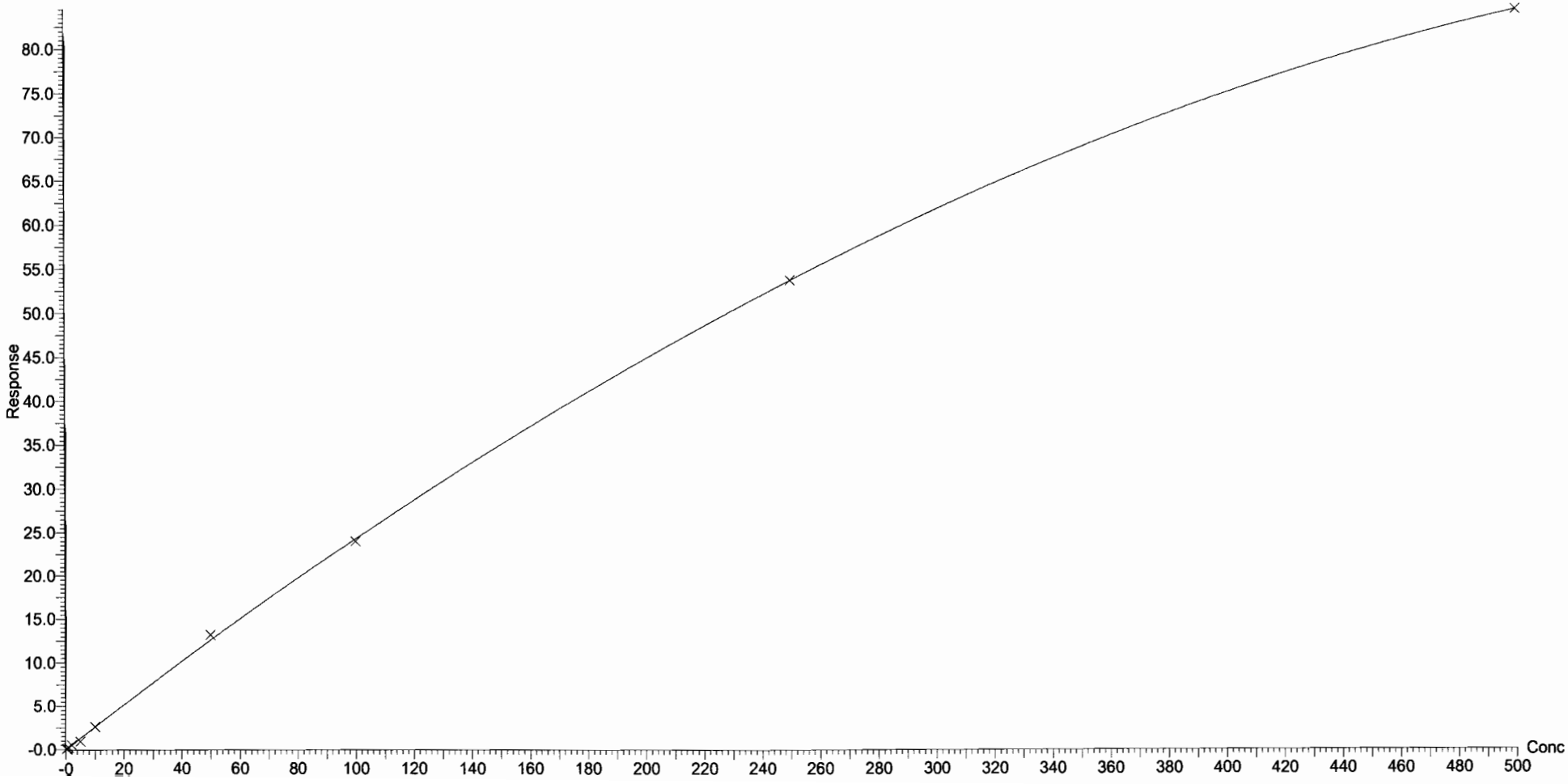
Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999287
Calibration curve: 8.67729e-005 * x^2 + 1.83166 * x + 0.0909919
Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

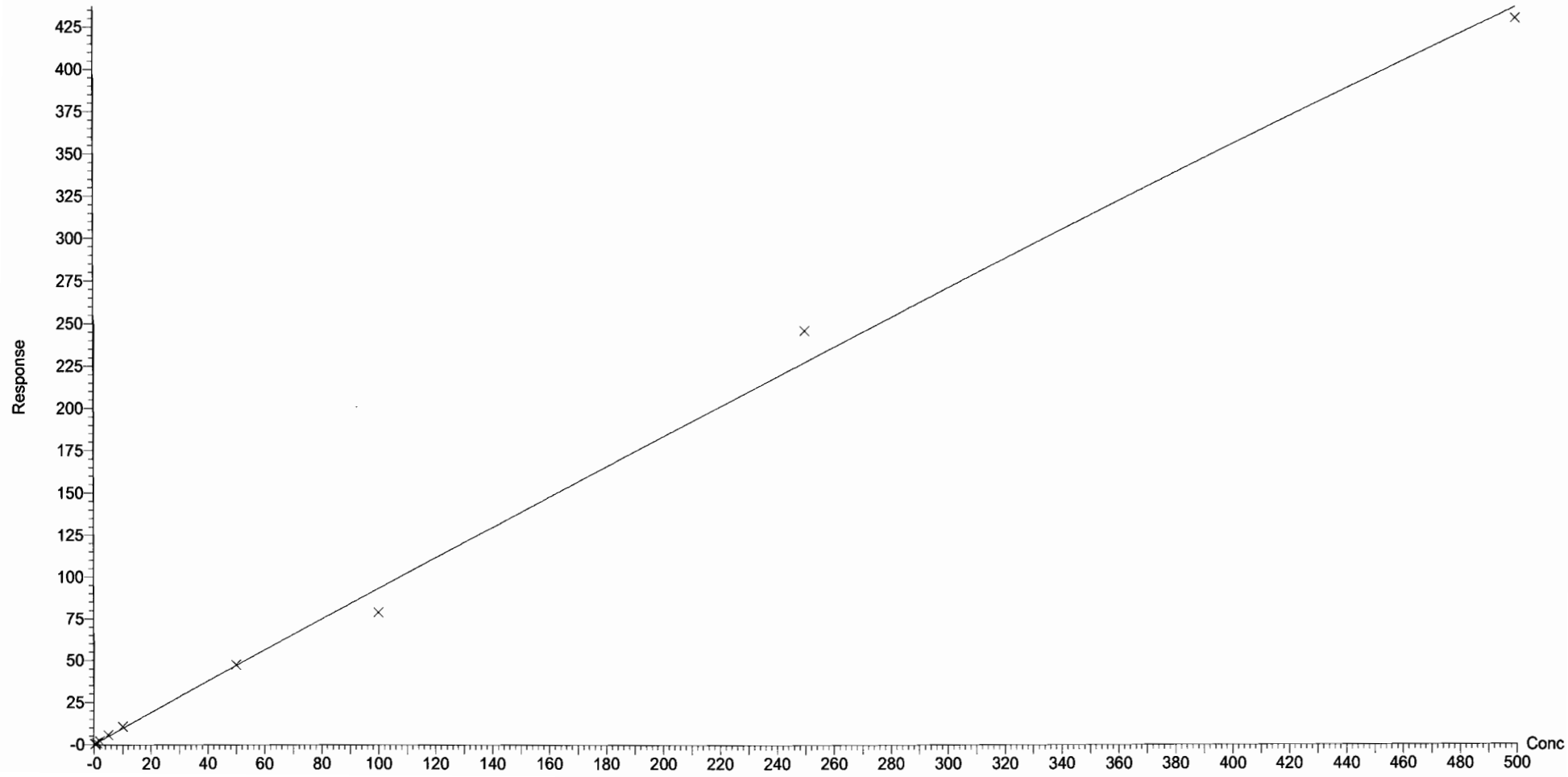
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999028
Calibration curve: -0.000183352 * x^2 + 0.260815 * x + -0.00597784
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.994873
Calibration curve: -0.000138522 * x^2 + 0.942967 * x + 0.133643
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

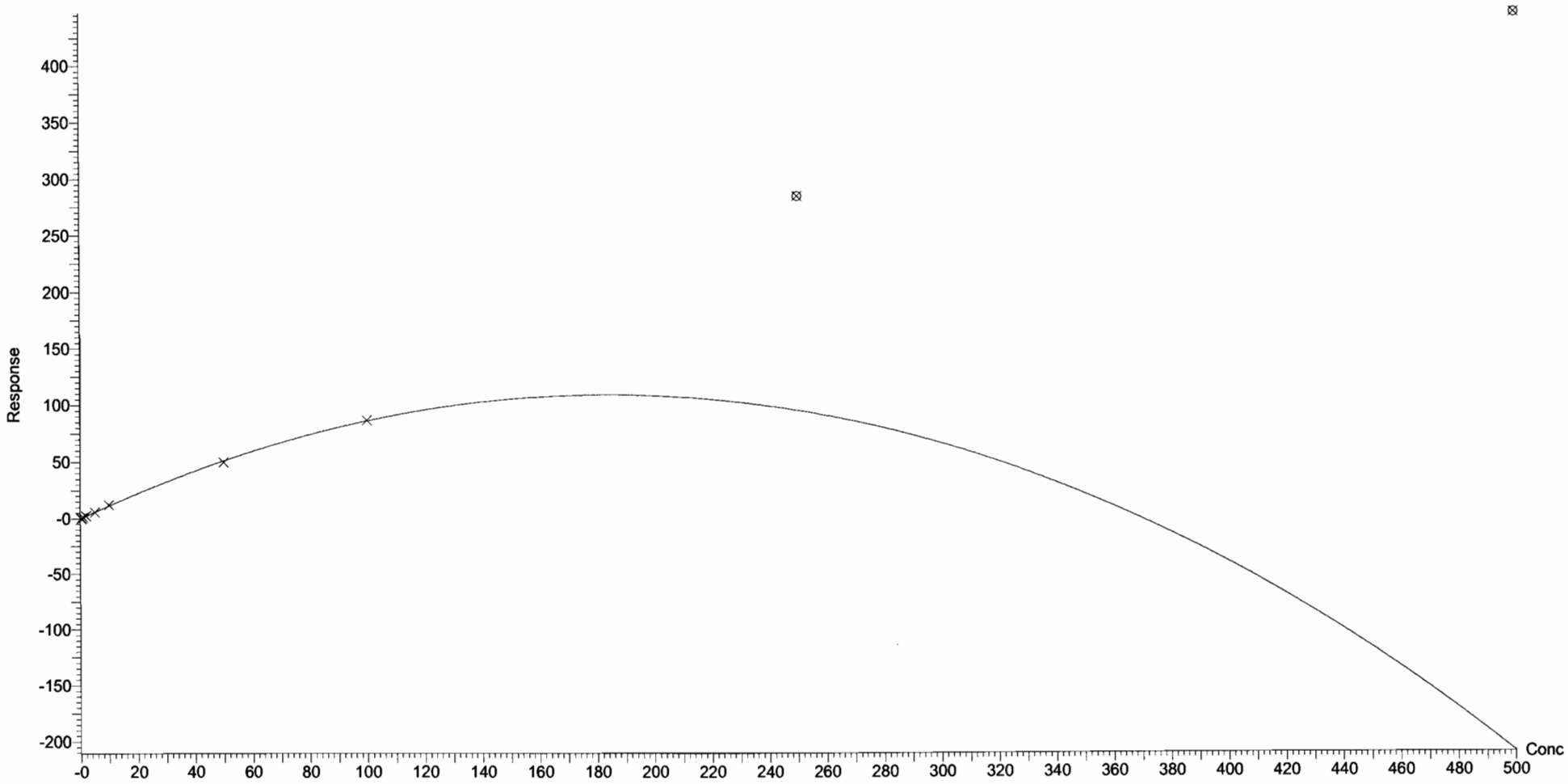


Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

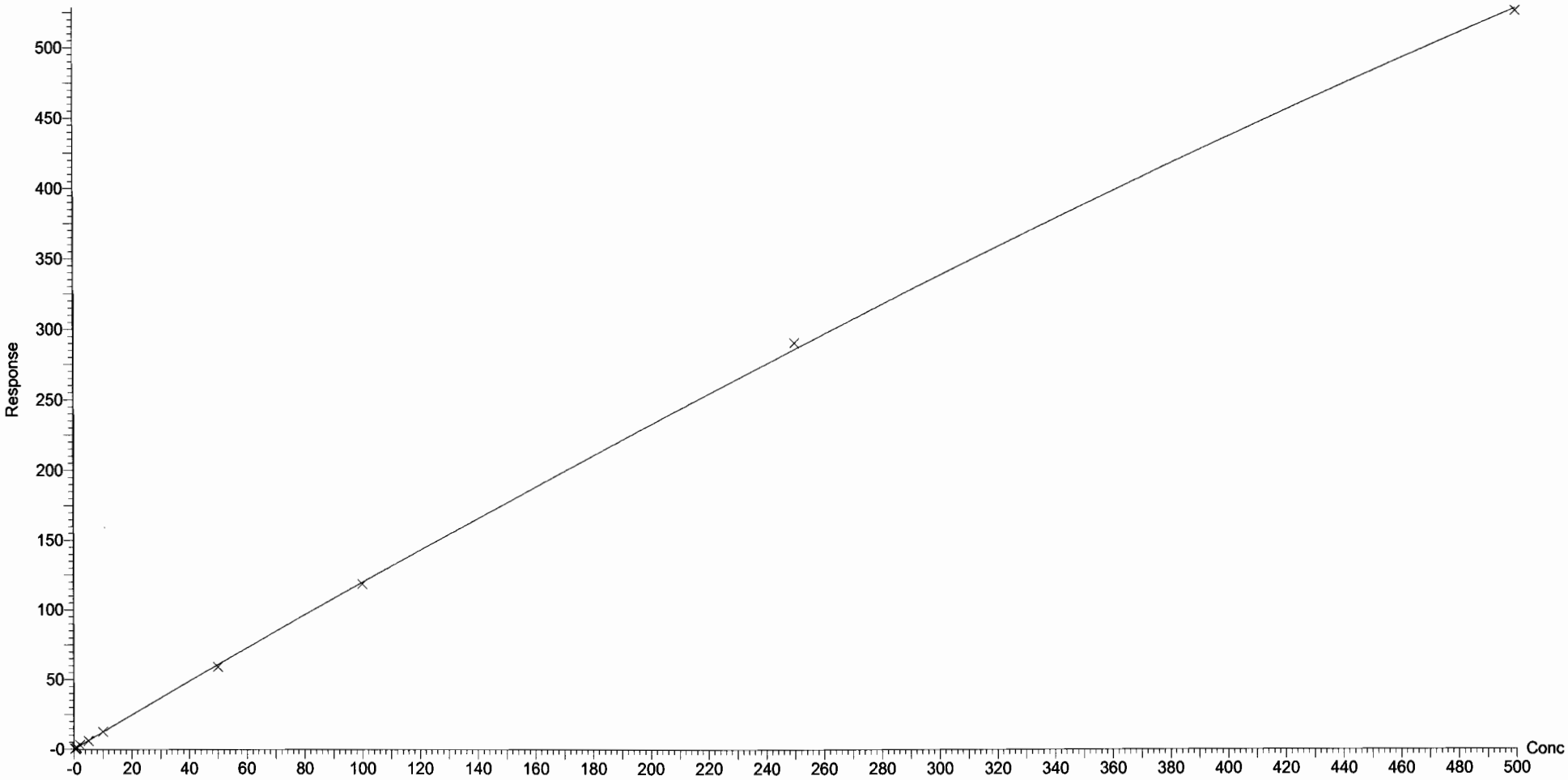
Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998876
Calibration curve: -0.00320317 * x^2 + 1.18129 * x + -0.0785414
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

Compound name: PFNA
Coefficient of Determination: R^2 = 0.999682
Calibration curve: -0.000346423 * x^2 + 1.22978 * x + 0.0495249
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

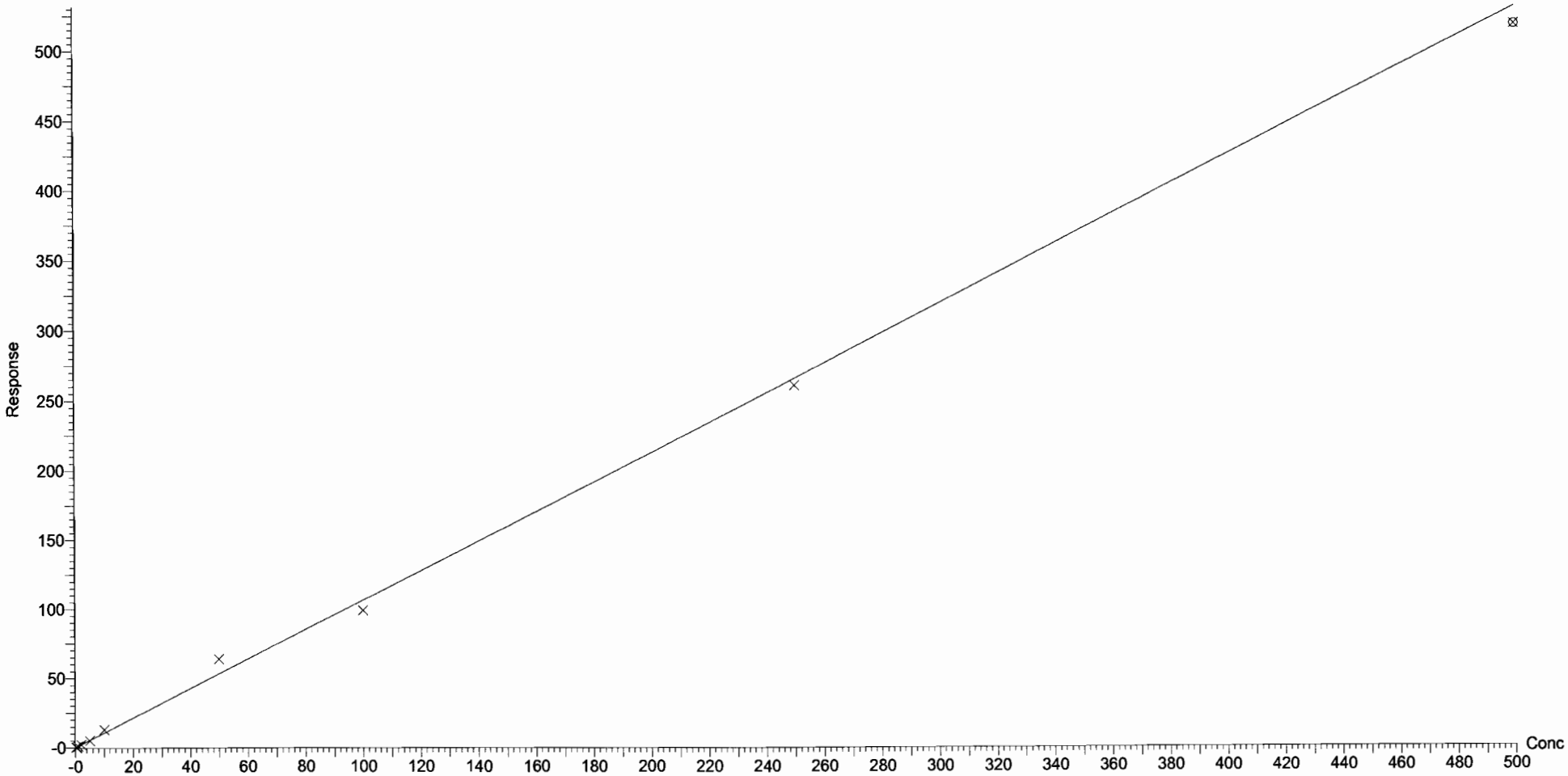


Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

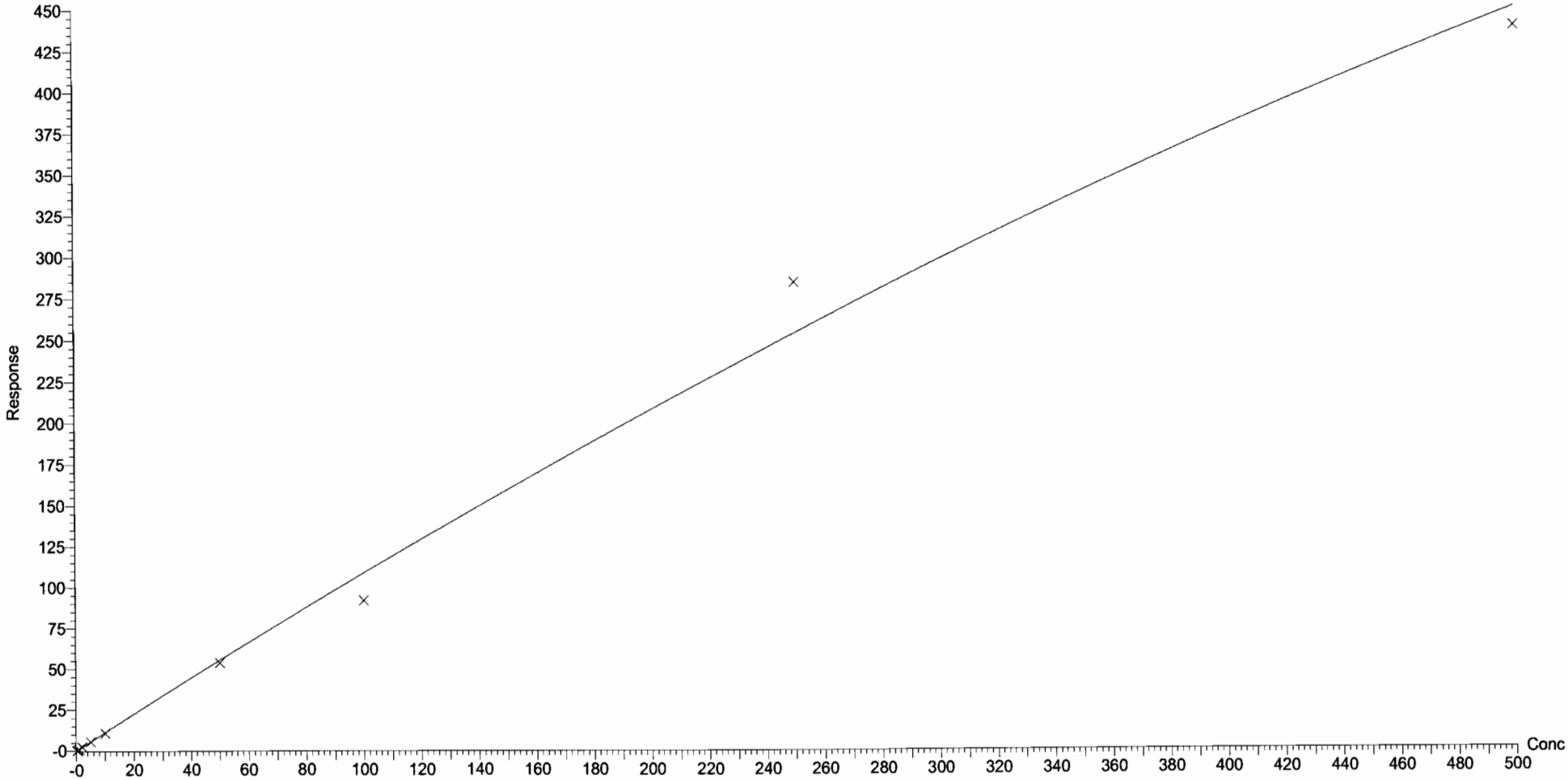
Compound name: PFOSA
Correlation coefficient: r = 0.996260, r^2 = 0.992534
Calibration curve: 1.06297 * x + -0.0116064
Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

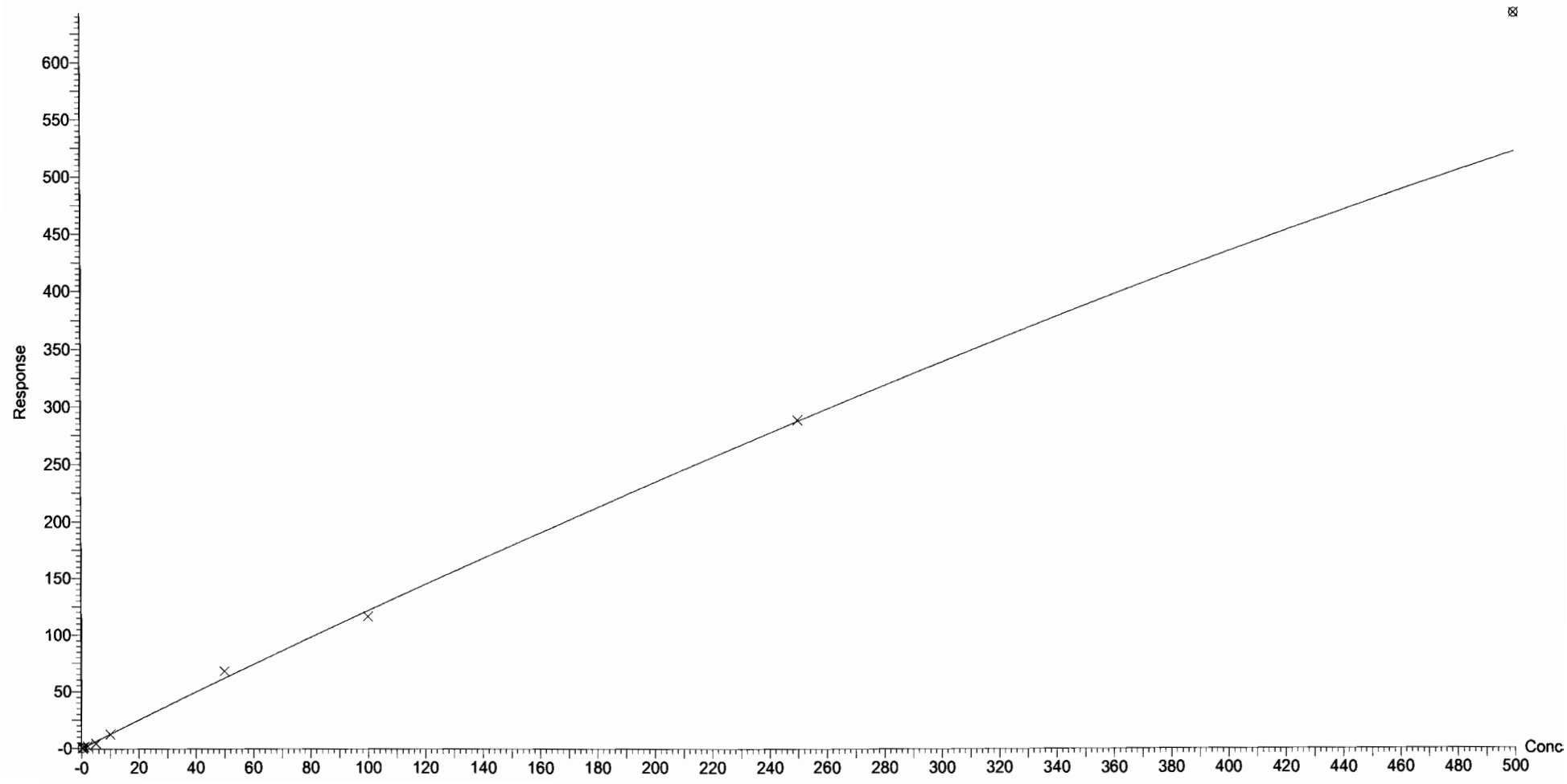
Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.992041
Calibration curve: -0.000459849 * x^2 + 1.13076 * x + -0.0806935
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

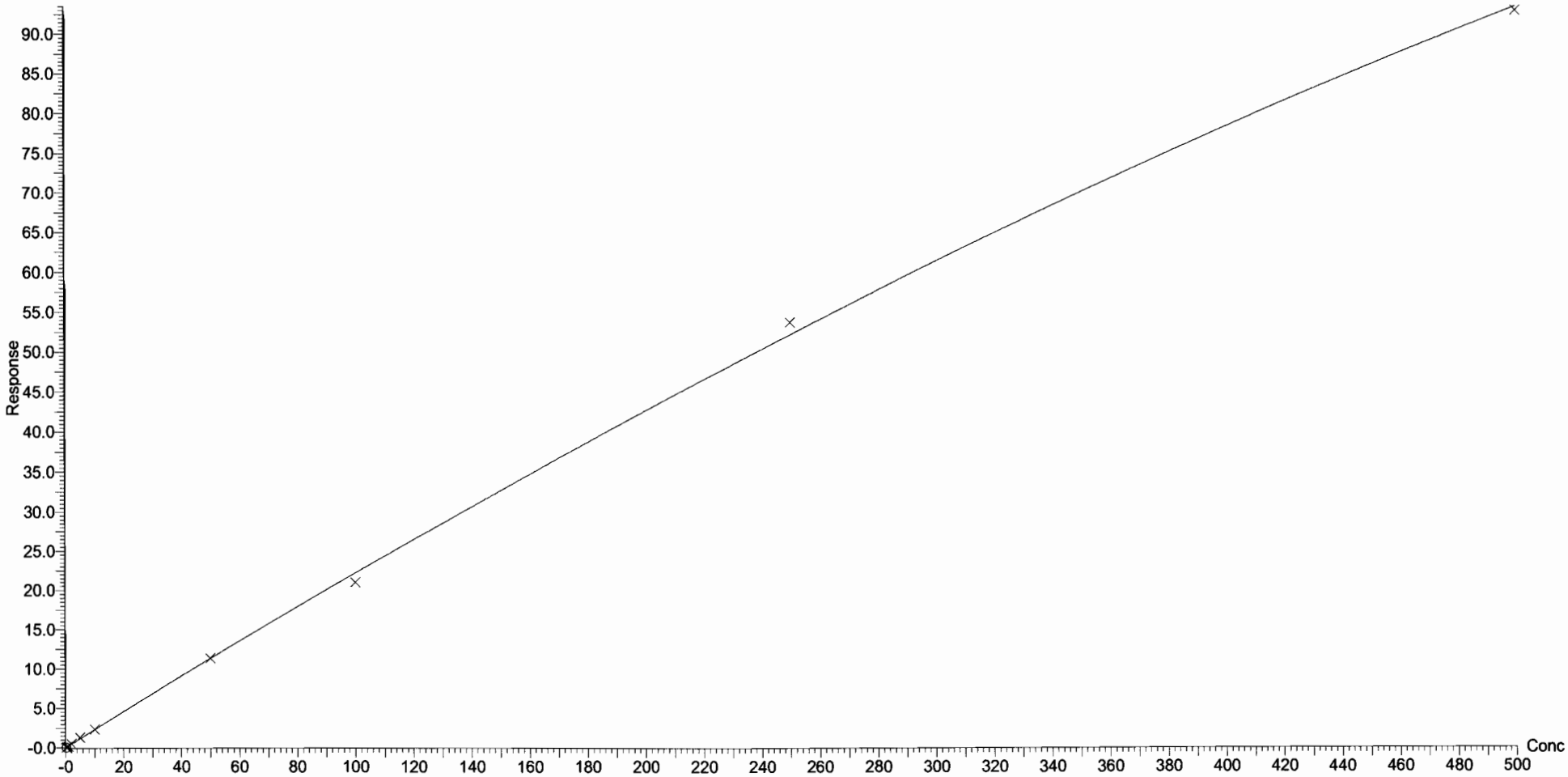
Compound name: PFDA
Coefficient of Determination: R^2 = 0.997055
Calibration curve: -0.000427494 * x^2 + 1.25663 * x + -0.168259
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

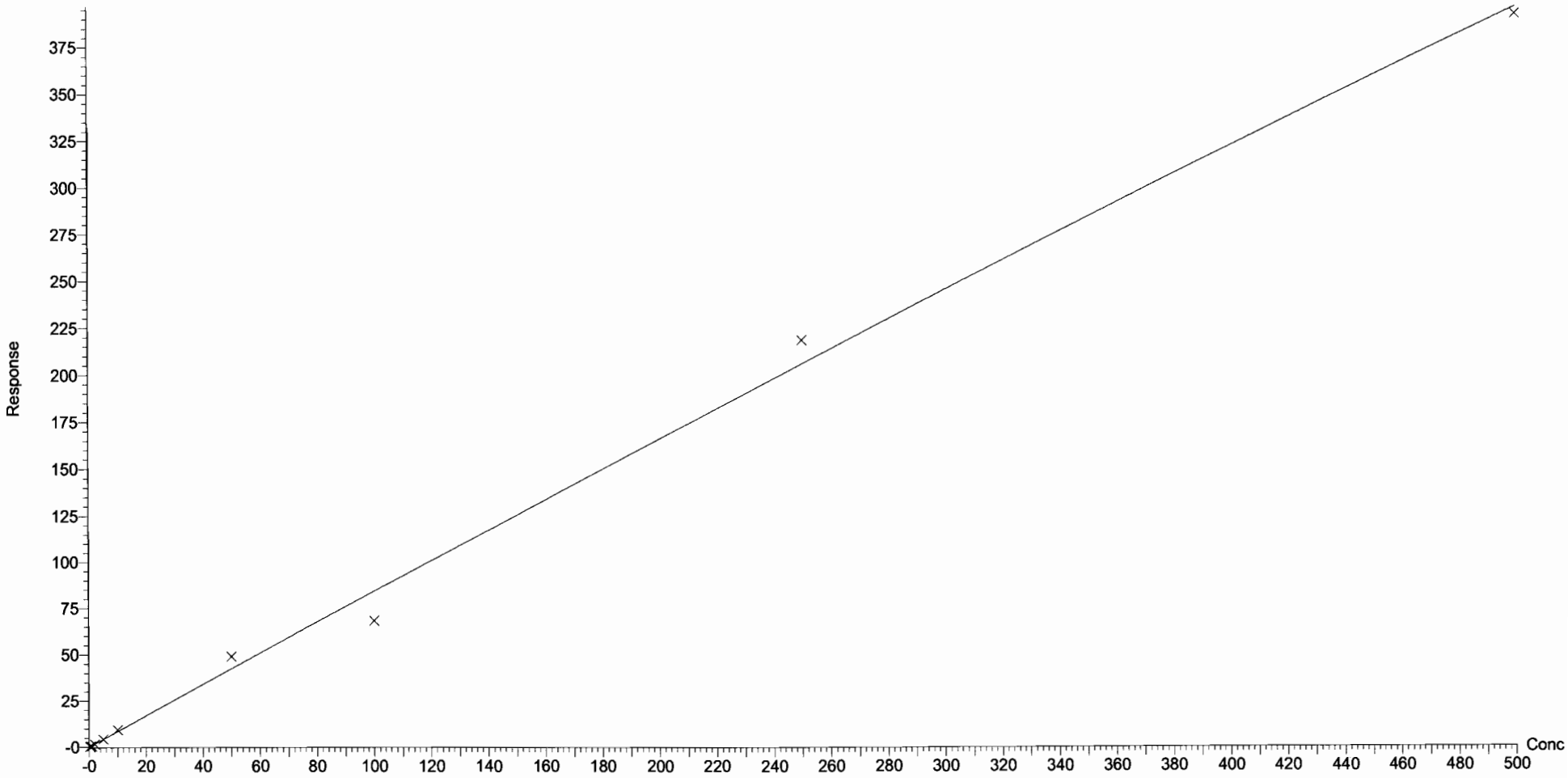
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.999052
Calibration curve: -8.73283e-005 * x^2 + 0.230675 * x + 0.00690415
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

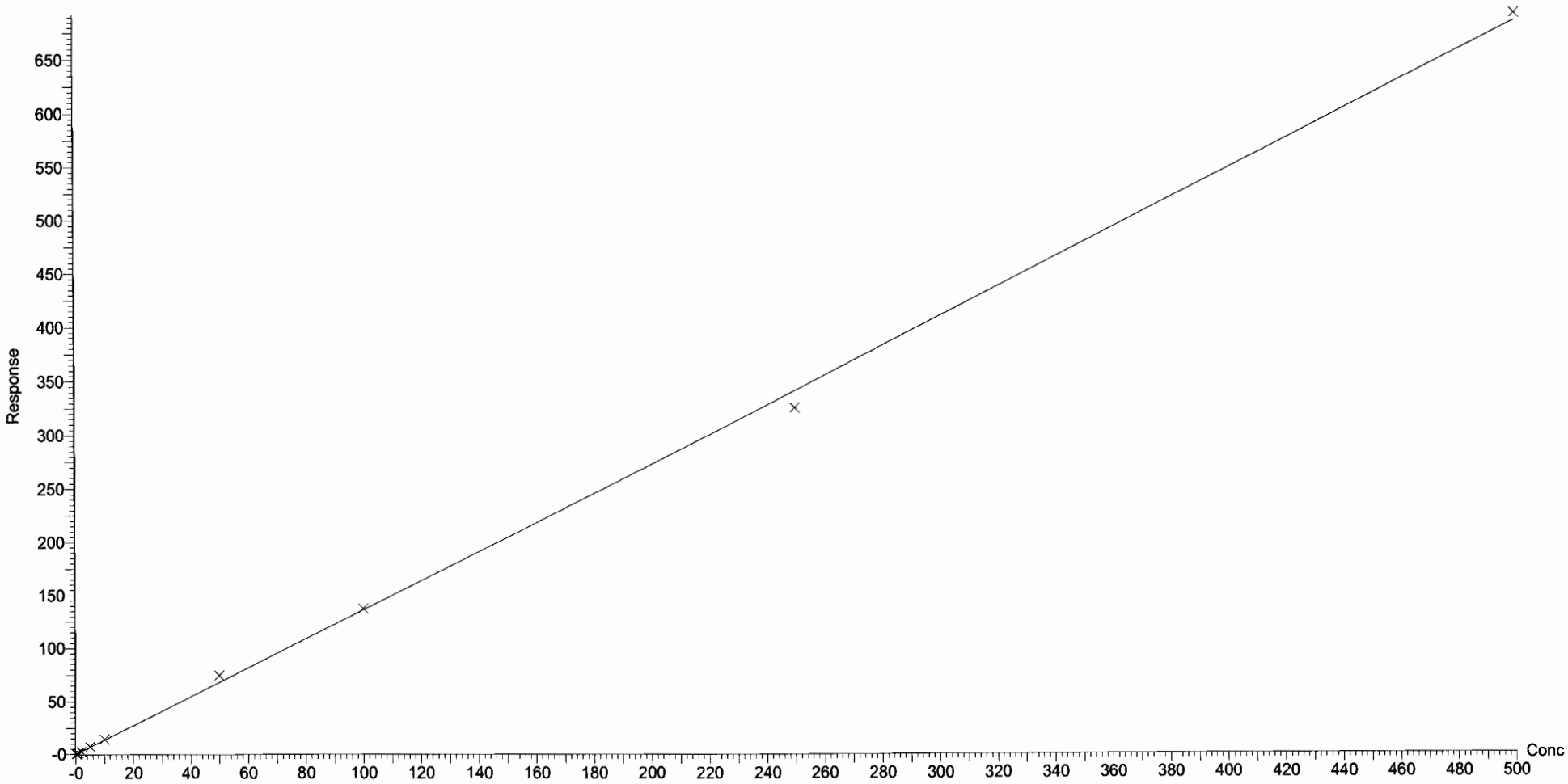
Compound name: PFNS
Coefficient of Determination: R^2 = 0.992981
Calibration curve: -0.000121998 * x^2 + 0.854418 * x + -0.00270057
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

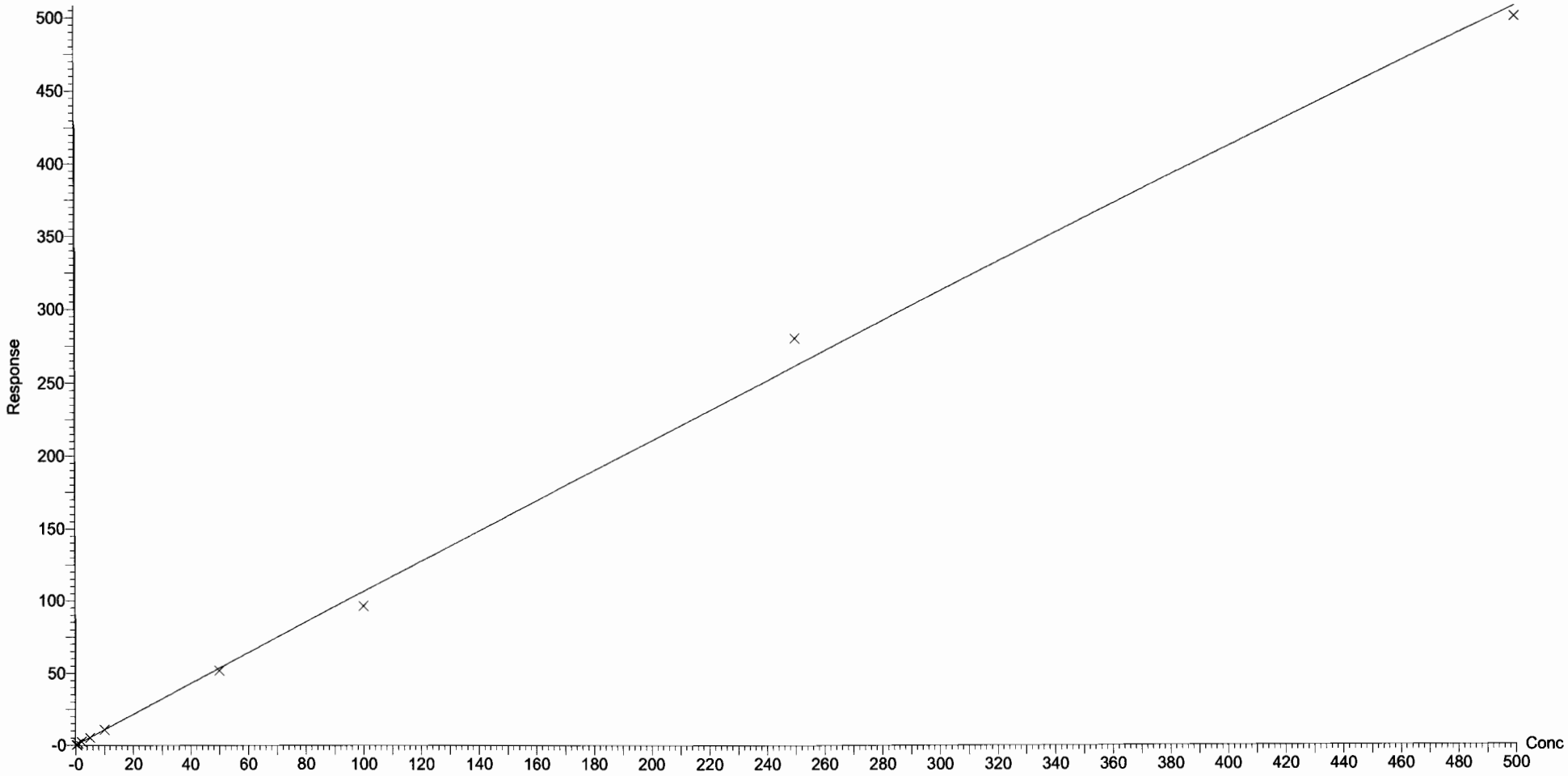
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.998764
Calibration curve: 3.01342e-005 * x^2 + 1.35675 * x + -0.0851455
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

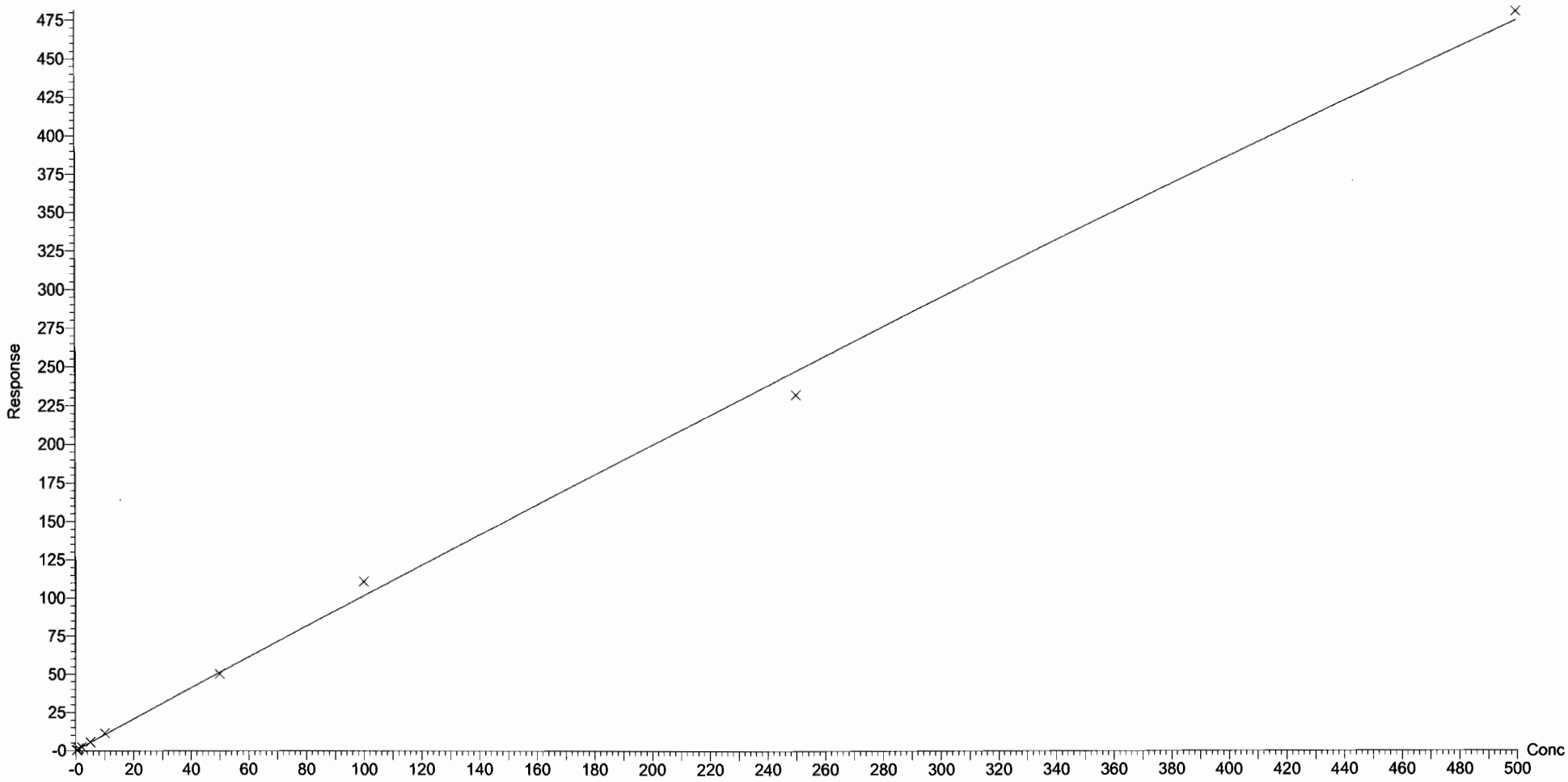
Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.997258
Calibration curve: -0.000114587 * x^2 + 1.07426 * x + -0.0705606
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

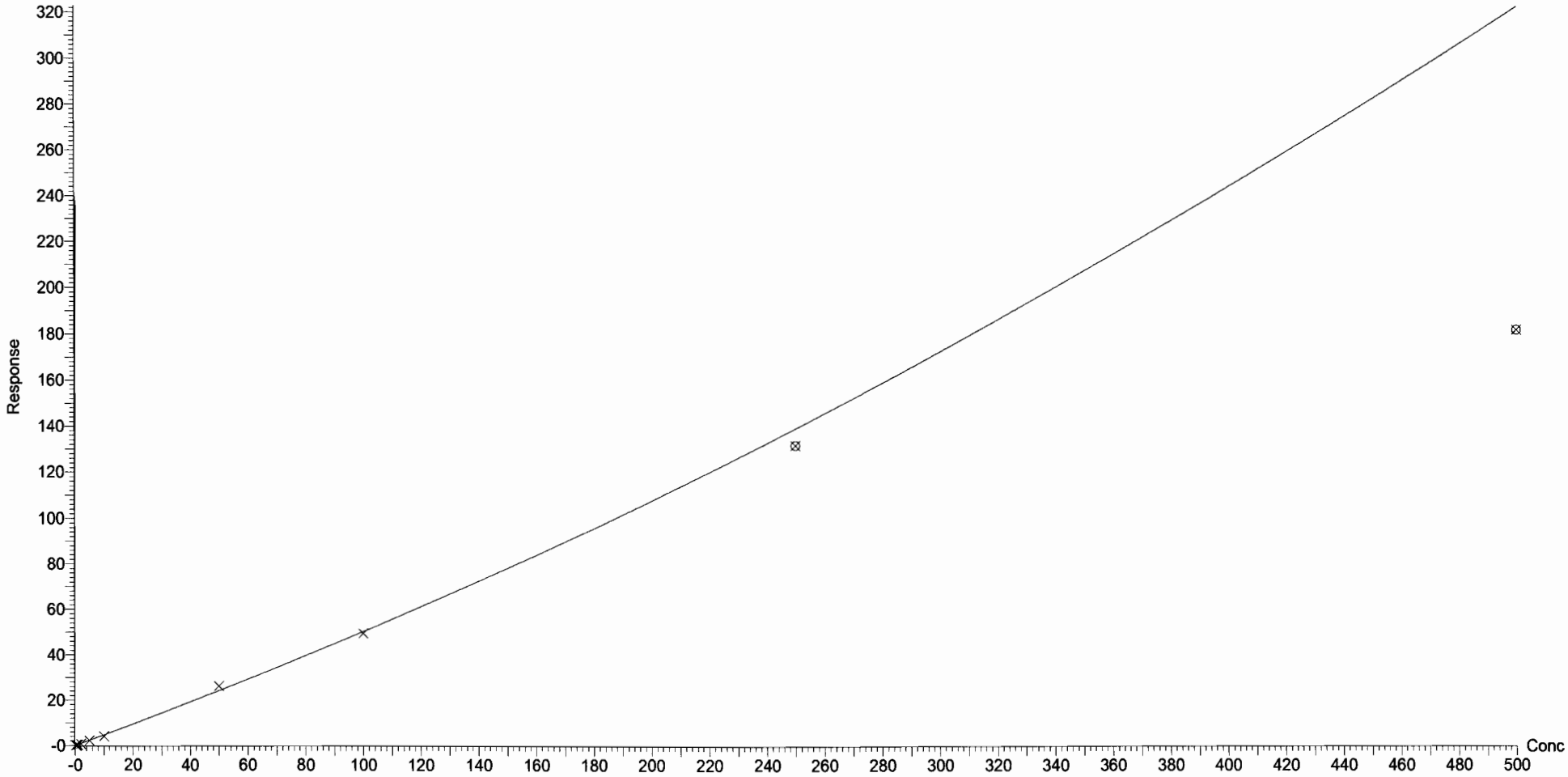
Compound name: PFUdA
Coefficient of Determination: R^2 = 0.997616
Calibration curve: -0.000154723 * x^2 + 1.02793 * x + 0.136525
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

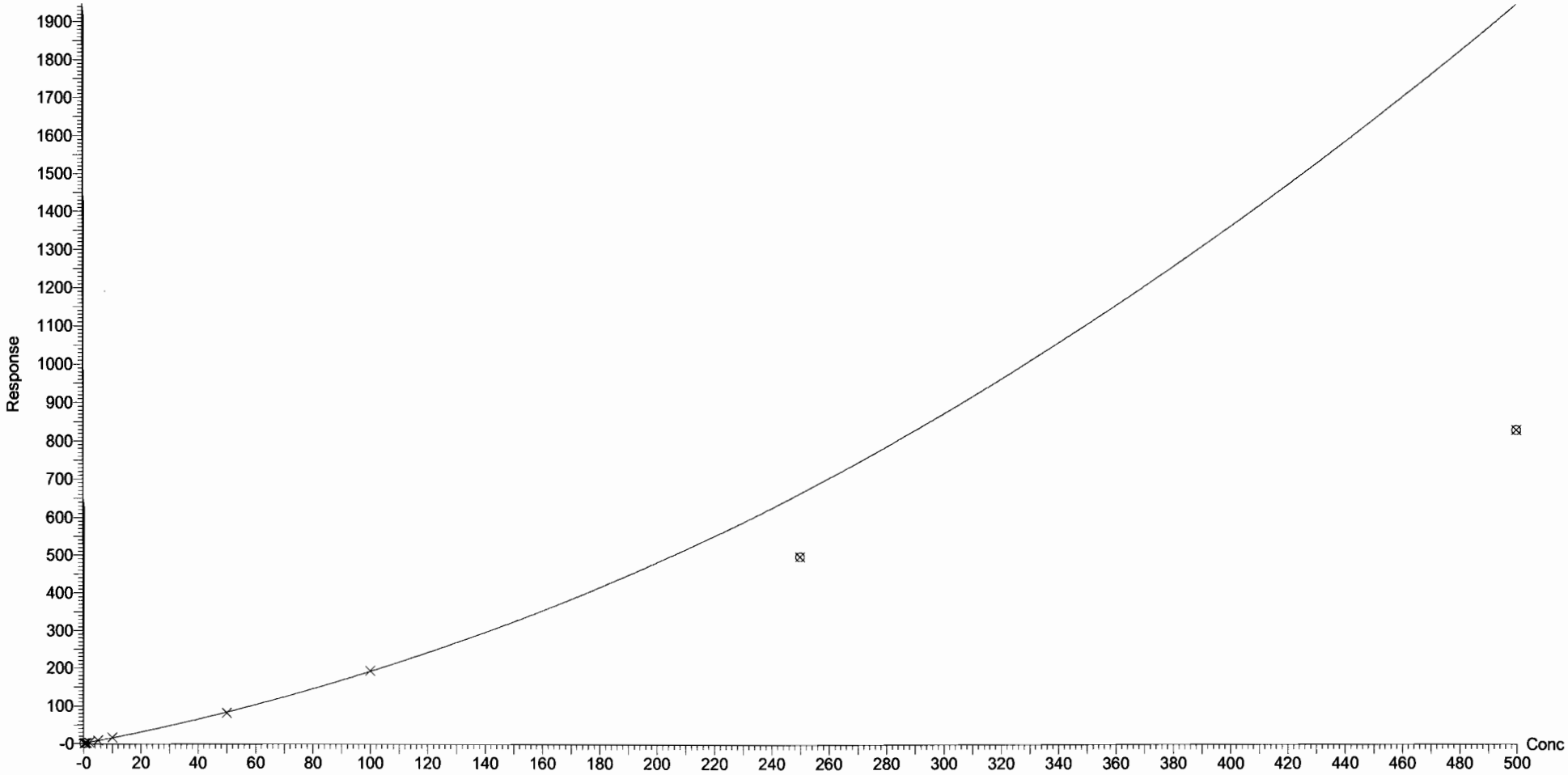
Compound name: PFDS
Coefficient of Determination: R^2 = 0.995765
Calibration curve: 0.000356429 * x^2 + 0.467357 * x + -0.0218895
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

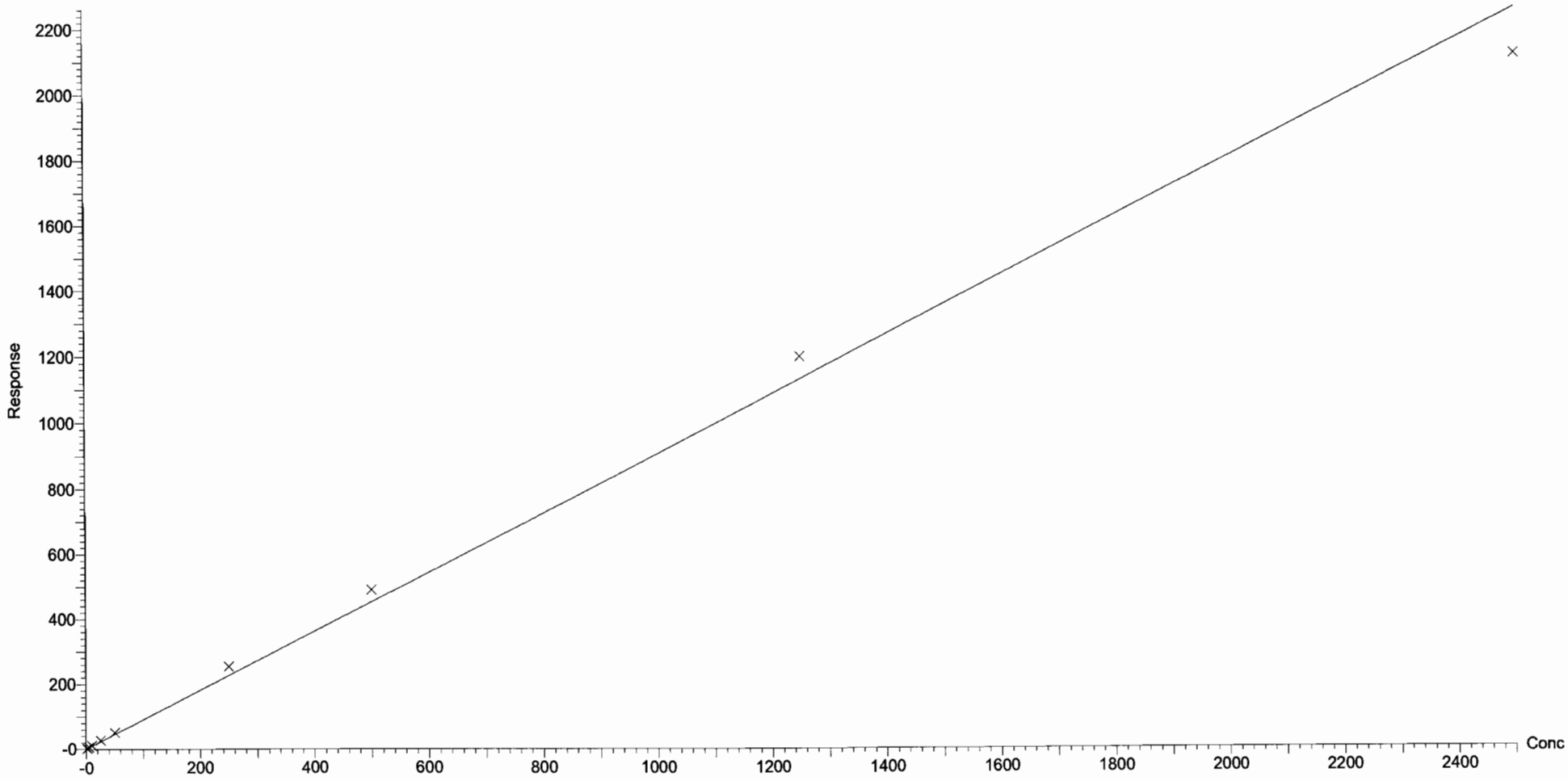
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999150
Calibration curve: 0.00496201 * x^2 + 1.4128 * x + 0.639401
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

Compound name: N-MeFOSA
Correlation coefficient: r = 0.997434, r^2 = 0.994875
Calibration curve: 0.904352 * x + 0.313322
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

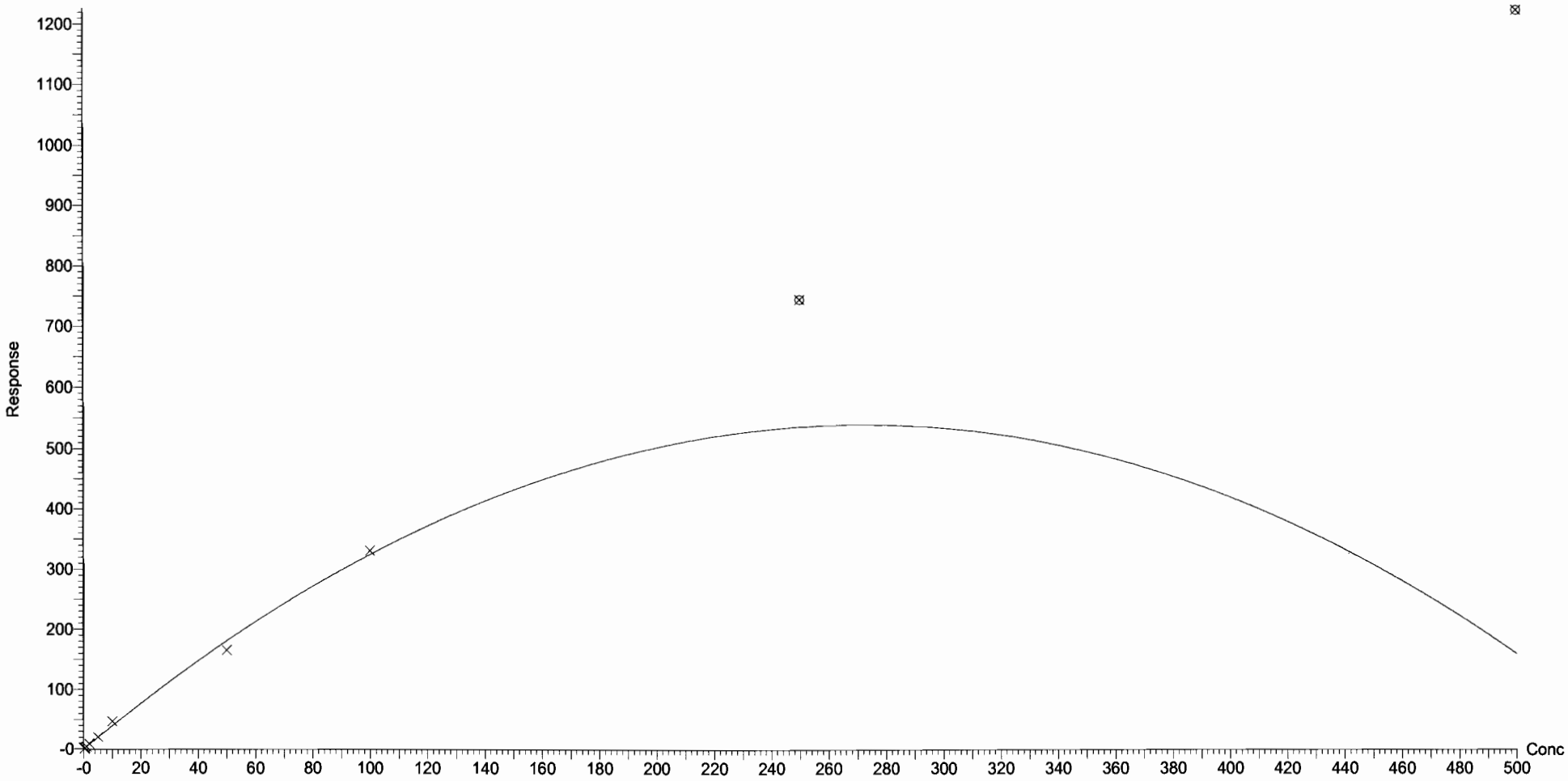


Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

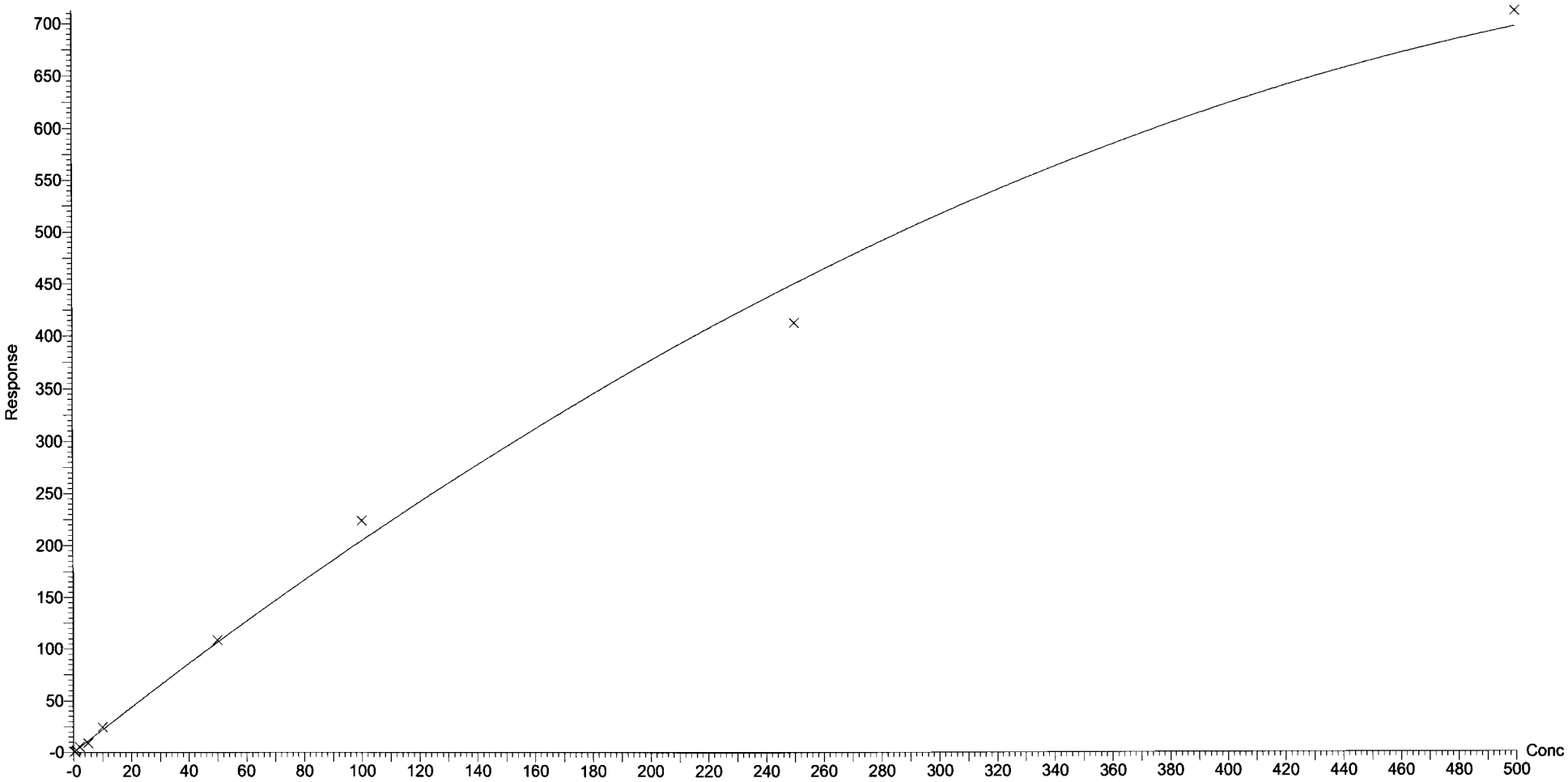
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.993888
Calibration curve: -0.00731597 * x^2 + 3.97537 * x + 0.0730998
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

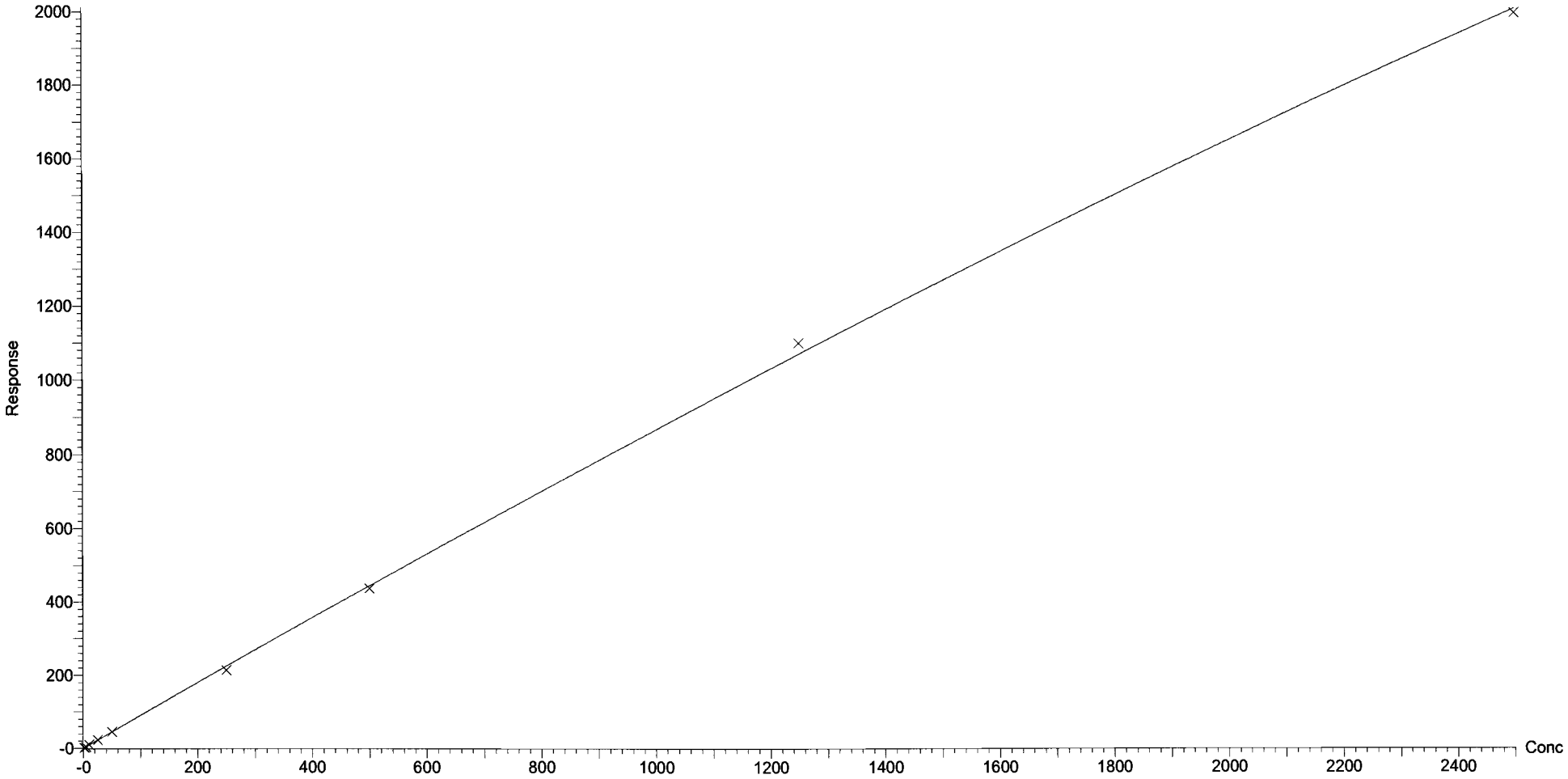
Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.995043
Calibration curve: -0.001626 * x^2 + 2.20804 * x + -0.00552365
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

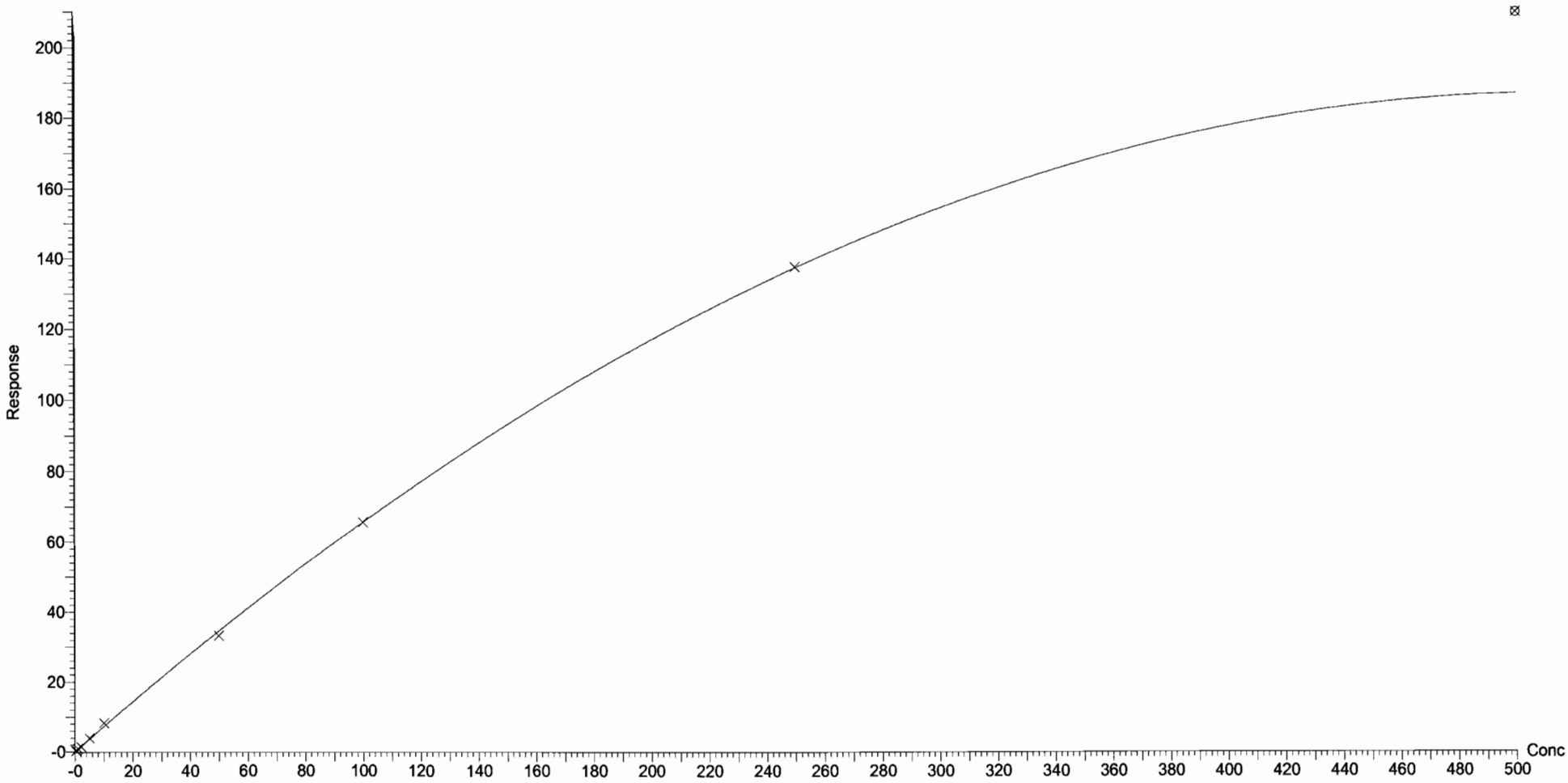
Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999525
Calibration curve: -4.20397e-005 * x^2 + 0.909049 * x + 0.0496773
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:53:14 Pacific Standard Time

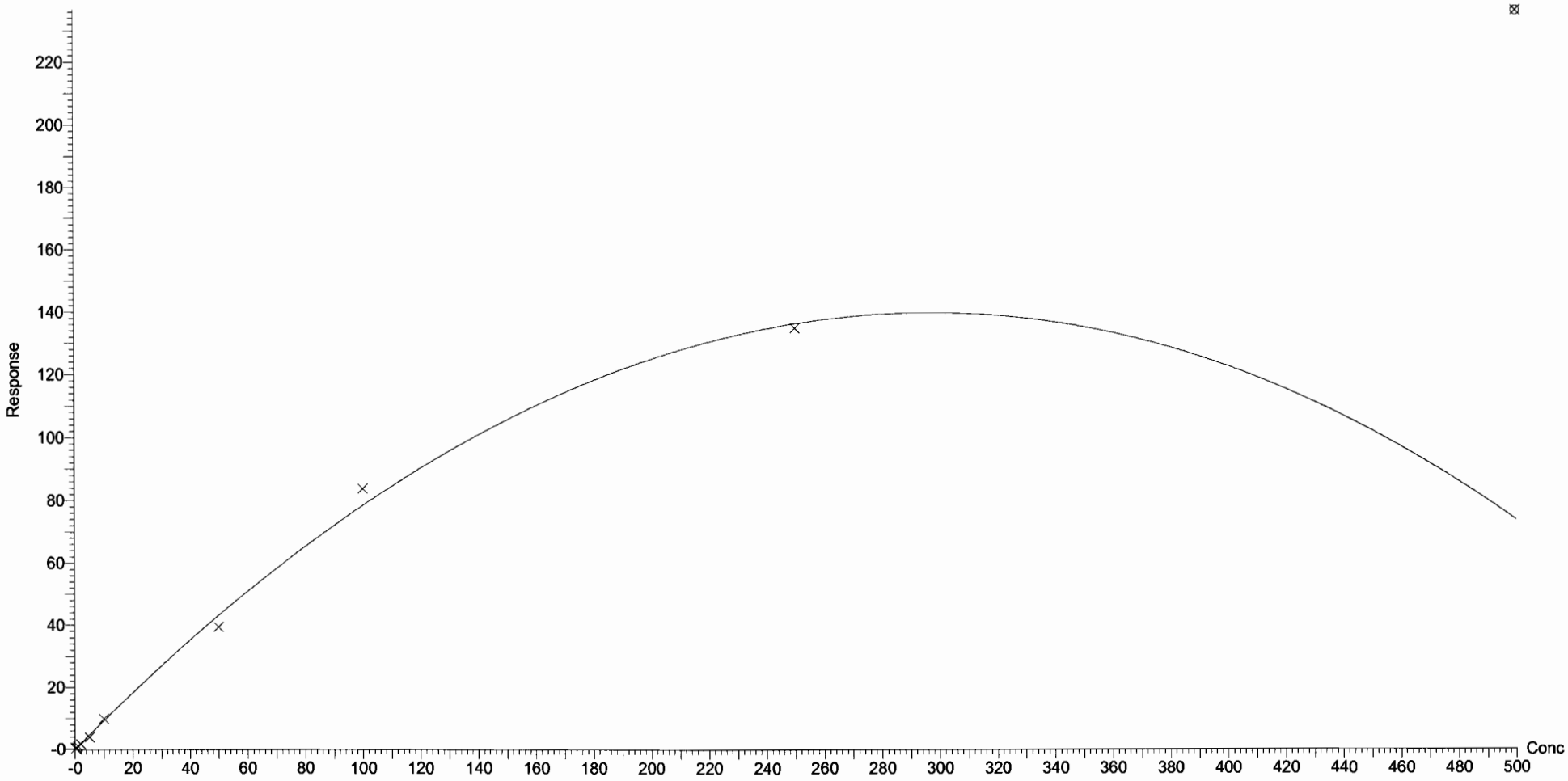
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998701
Calibration curve: -0.000702362 * x^2 + 0.725251 * x + 0.092609
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:56:48 Pacific Standard Time

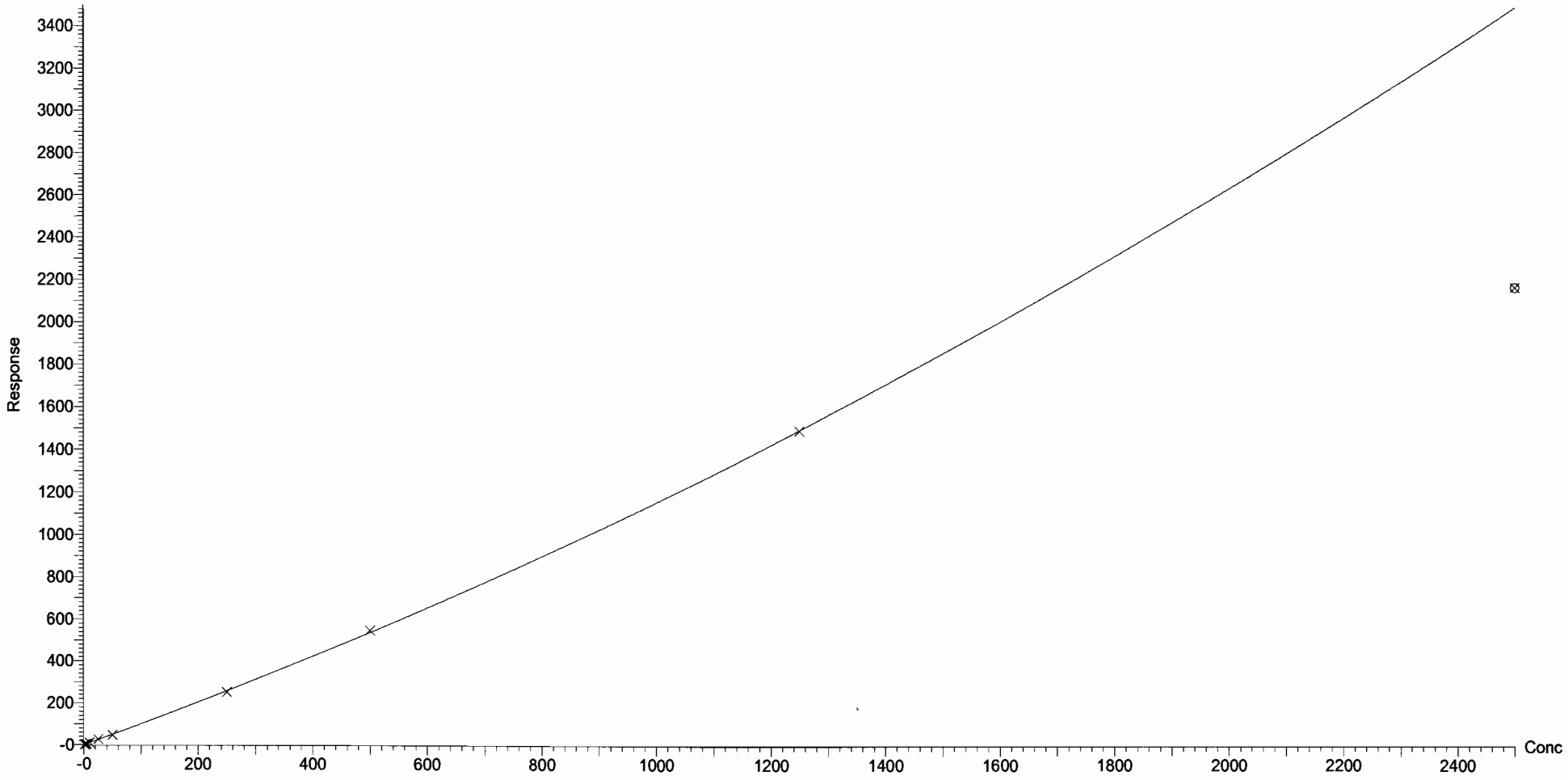
Compound name: PFODA
Coefficient of Determination: R^2 = 0.995886
Calibration curve: -0.0015927 * x^2 + 0.943535 * x + -0.0103925
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:56:48 Pacific Standard Time

Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999674
Calibration curve: 0.000162073 * x^2 + 0.993321 * x + 0.0408533
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

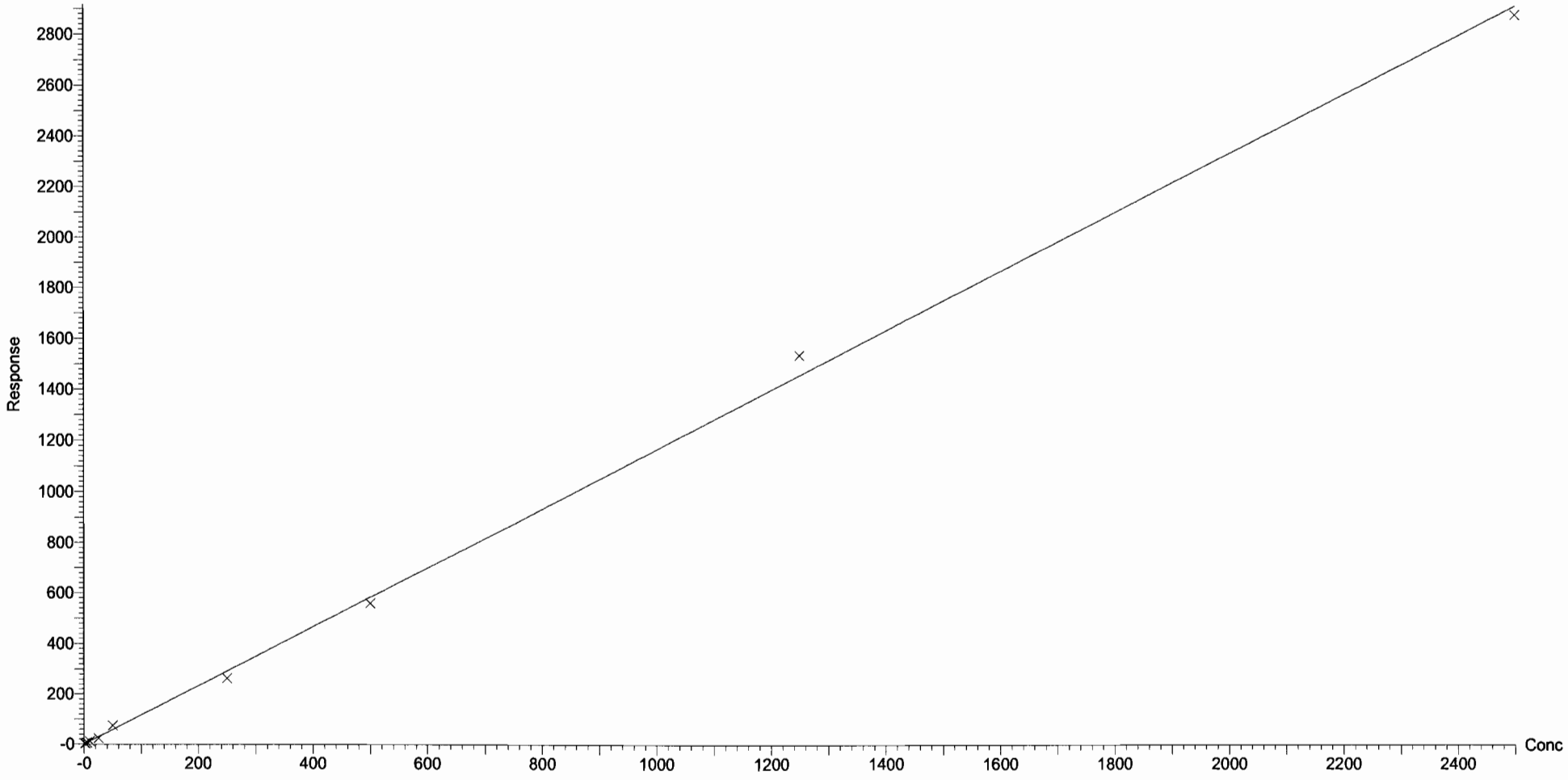


Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:56:48 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.998685, r^2 = 0.997371
Calibration curve: 1.166 * x + -0.0323662
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



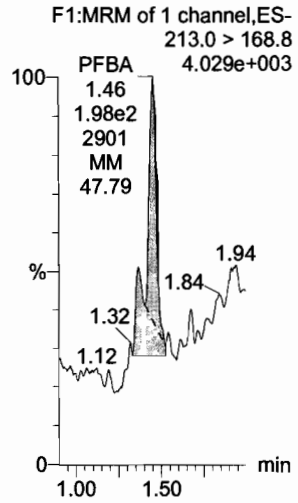
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

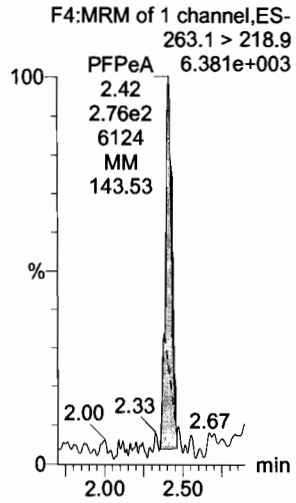
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 08:49:29

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

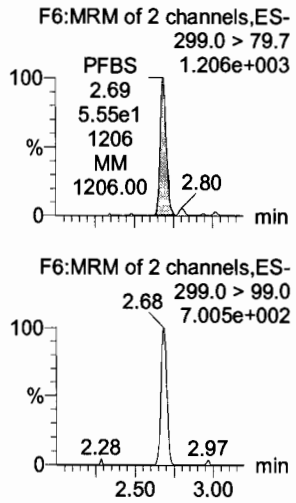
PFBA



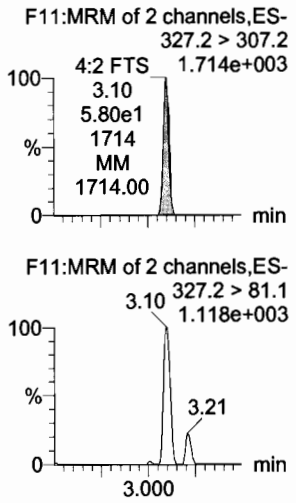
PFPeA



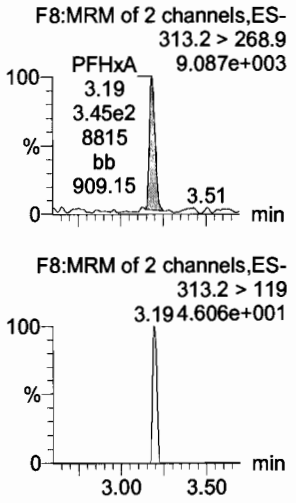
PFBS



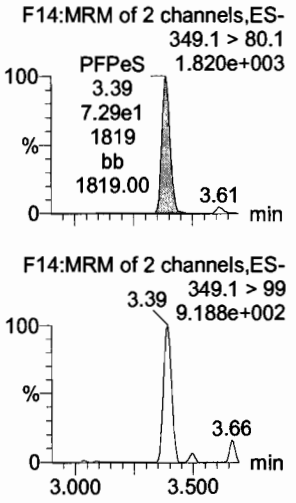
4:2 FTS



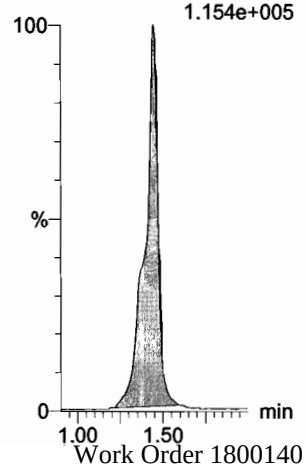
PFHxA



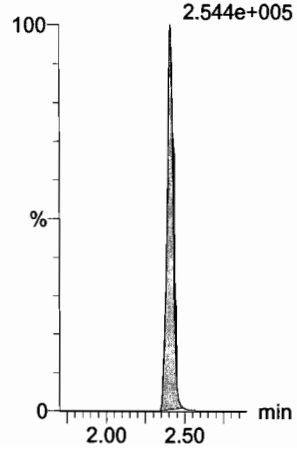
PFPeS



13C3-PFBA



13C3-PFPeA



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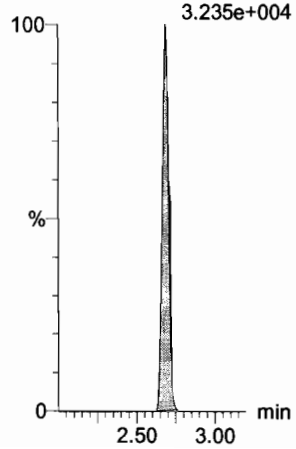

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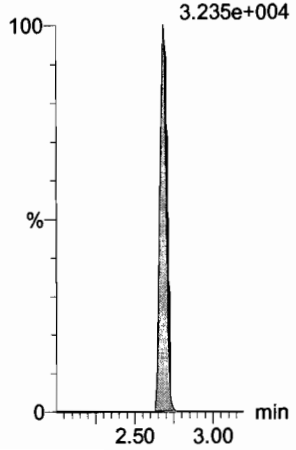

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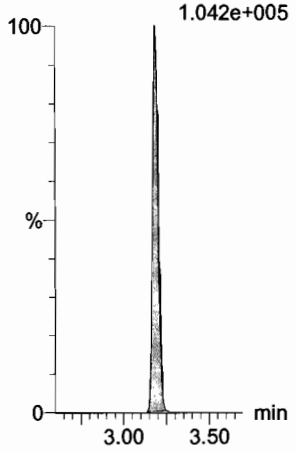

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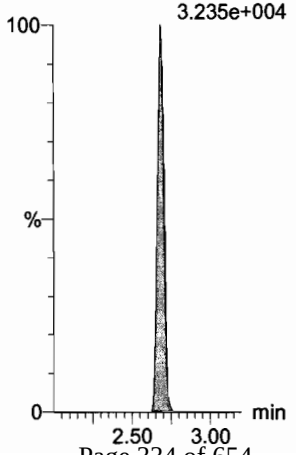

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Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

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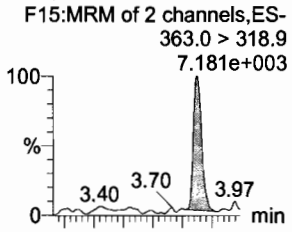

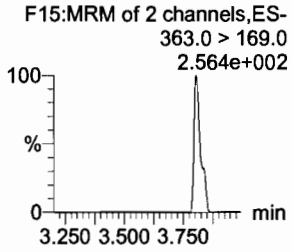

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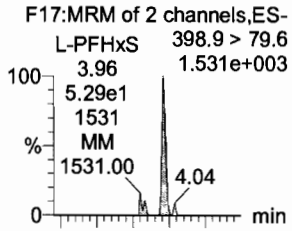

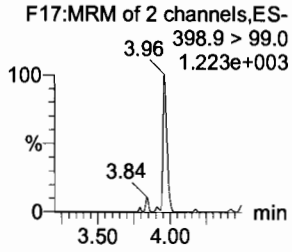

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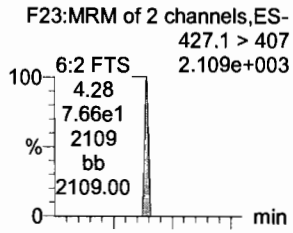

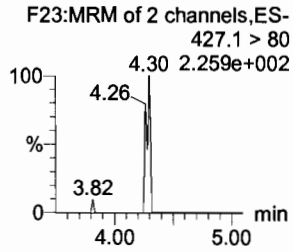

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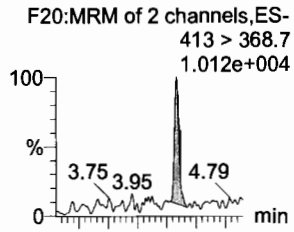

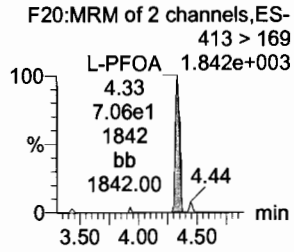

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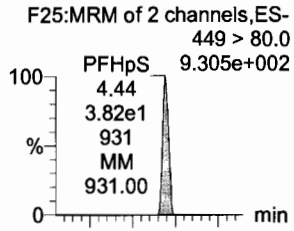

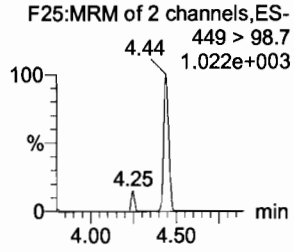

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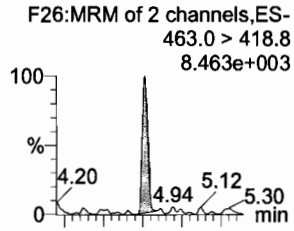

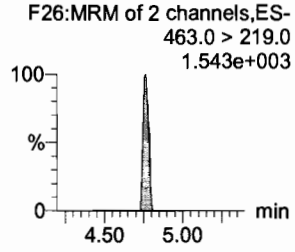

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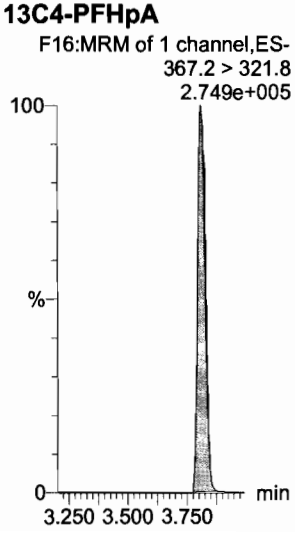
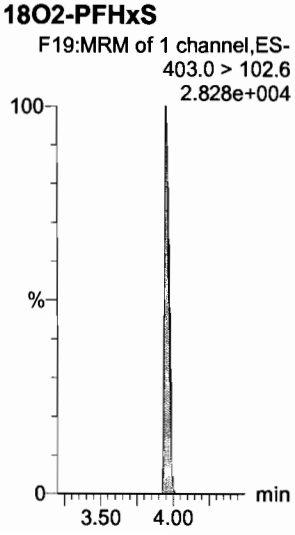


18O2-PFHxS



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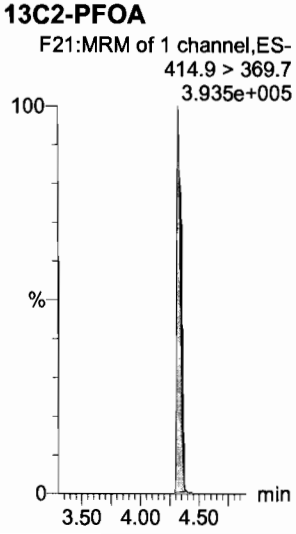

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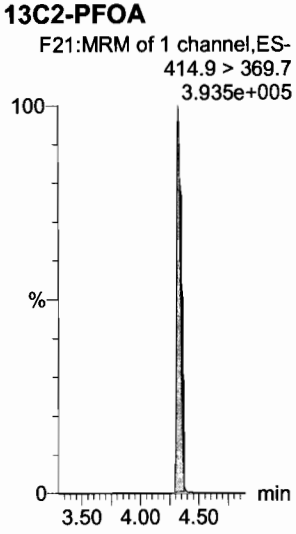

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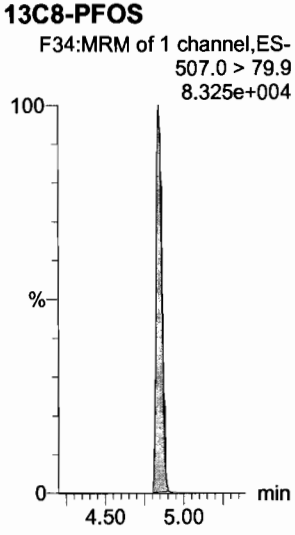

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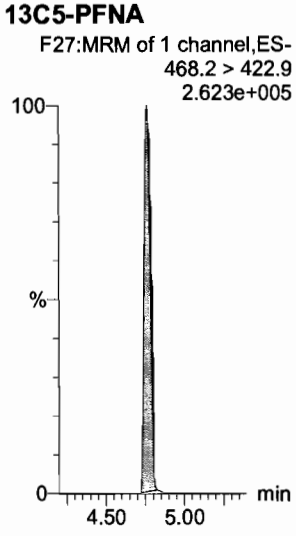

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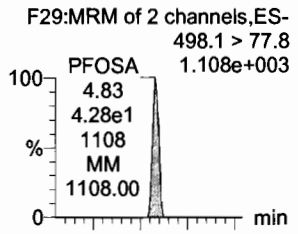
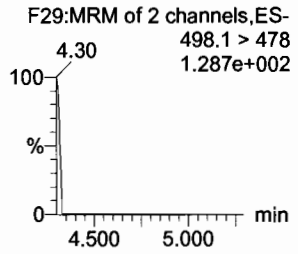
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

PFOSA





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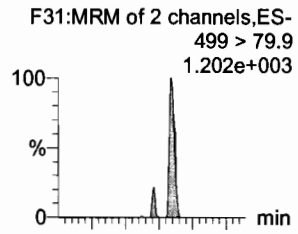

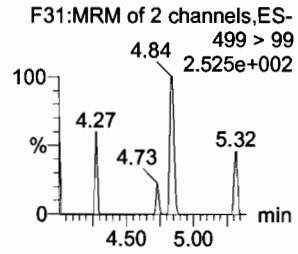

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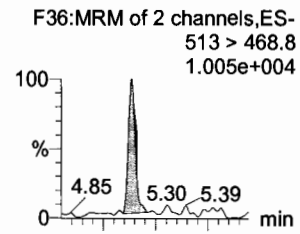

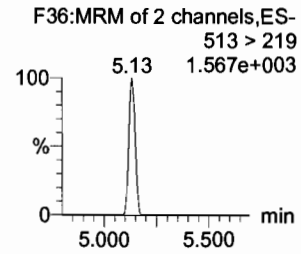

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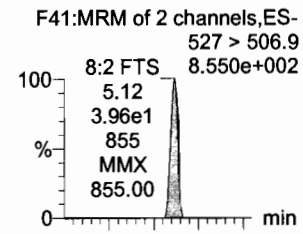

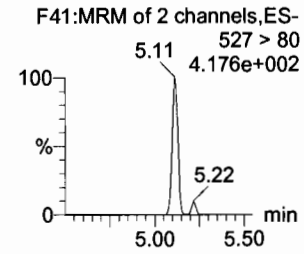

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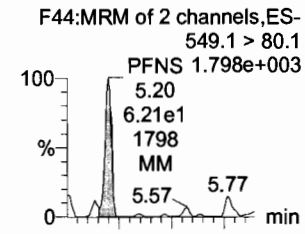

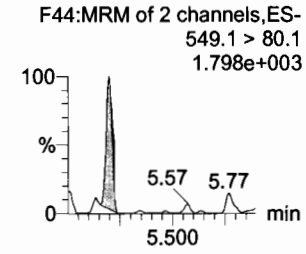

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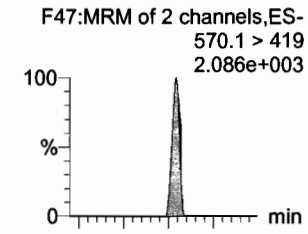

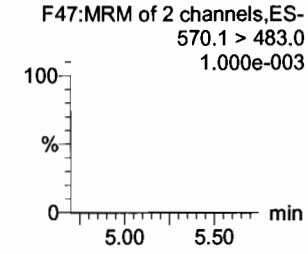

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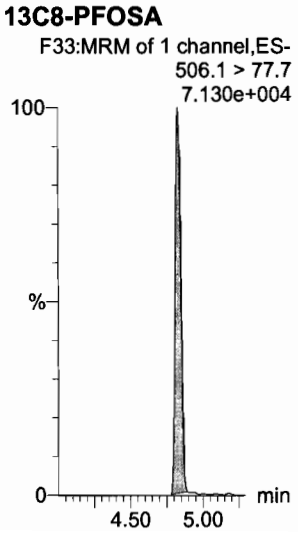

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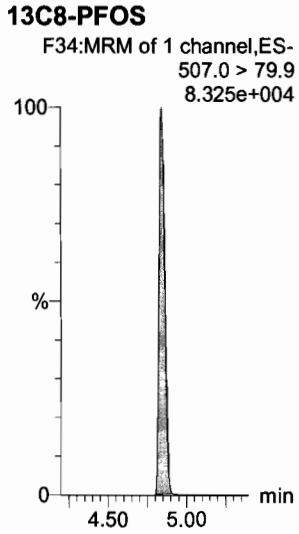

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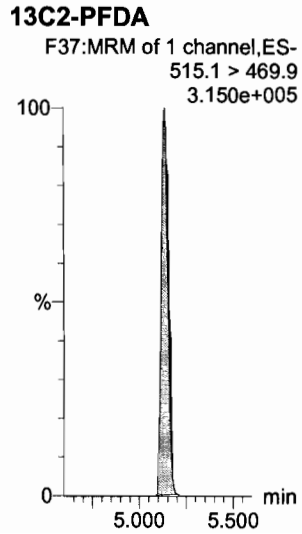

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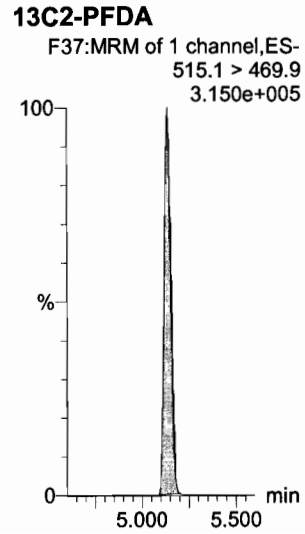

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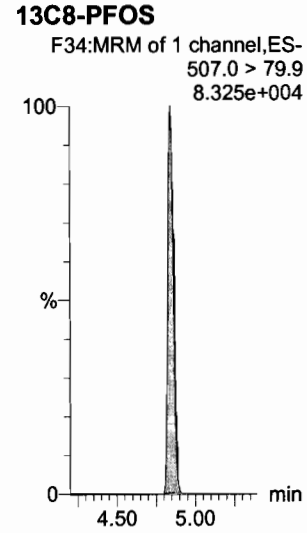

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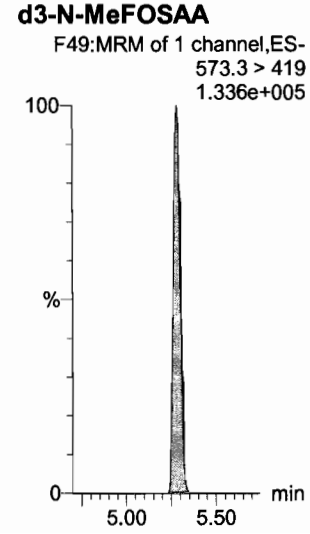

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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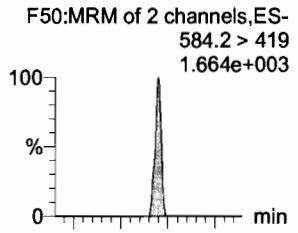
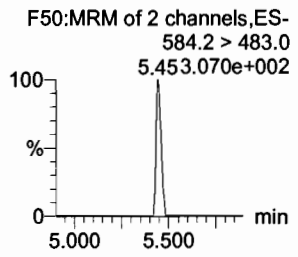
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

N-EtFOSAA





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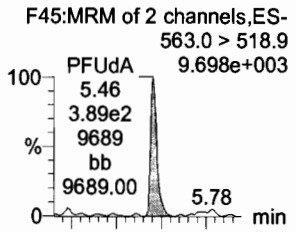

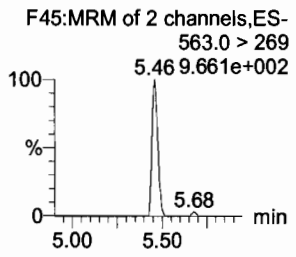

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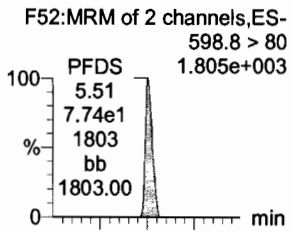

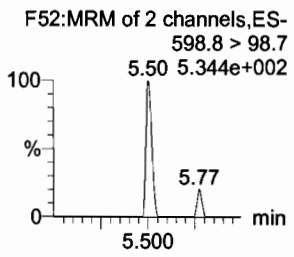

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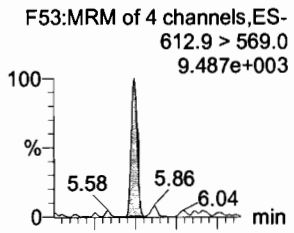

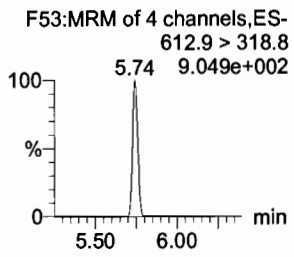

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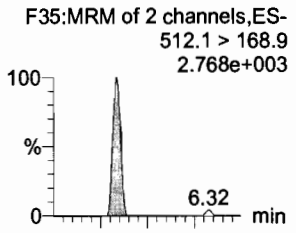

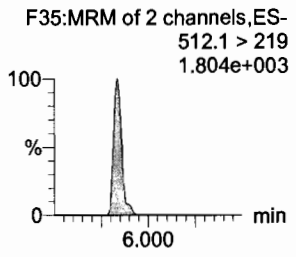

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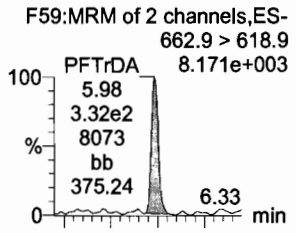
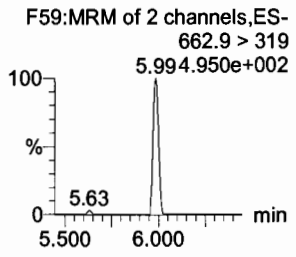
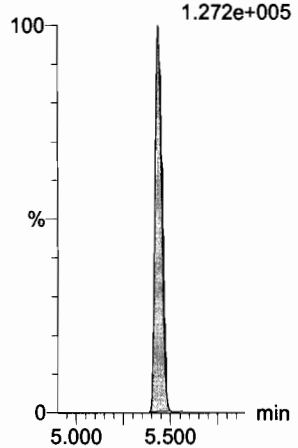
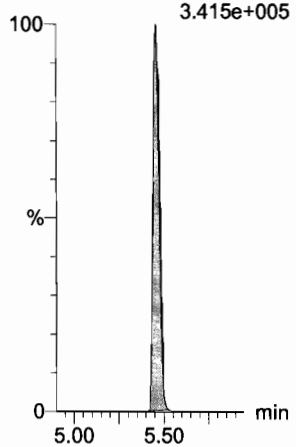




d5-N-EtFOSAA



13C2-PFUdA



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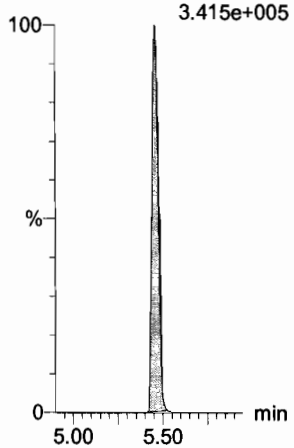
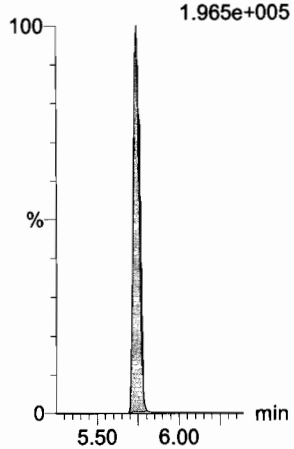
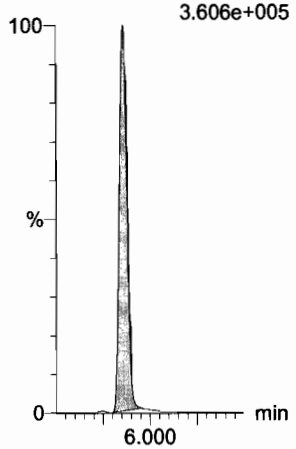


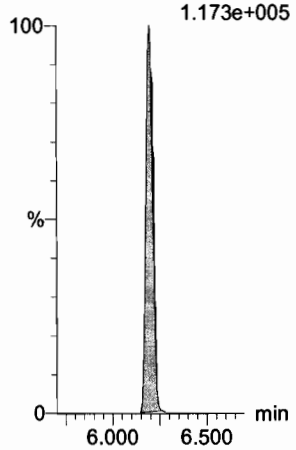
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

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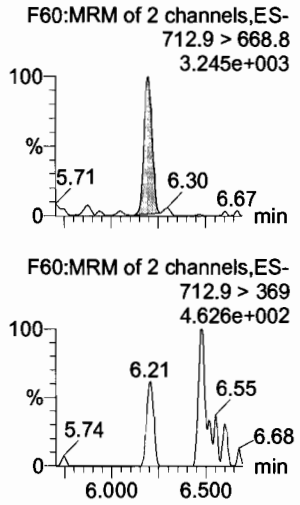
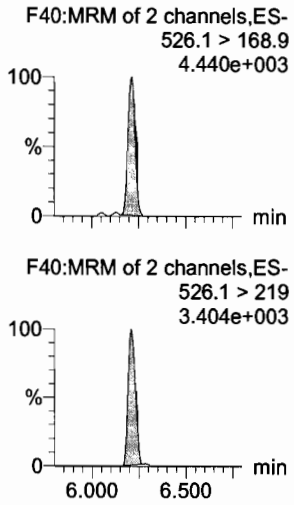
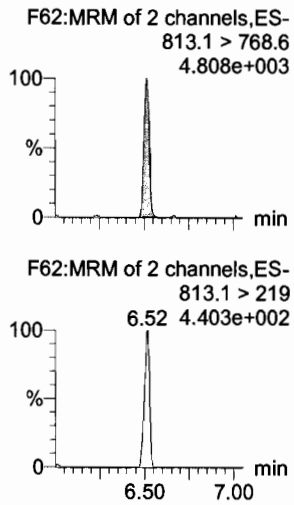


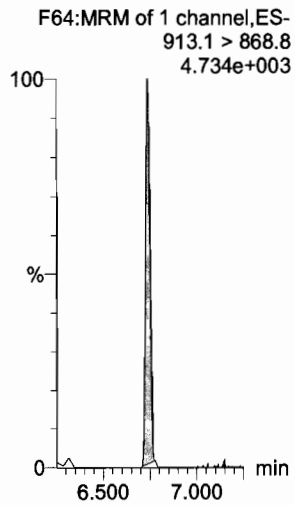
N-EtFOSA



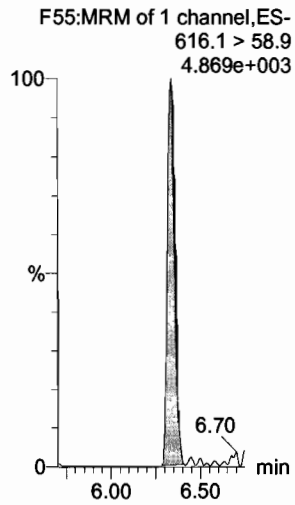
PFHxDA



PFODA



N-MeFOSE



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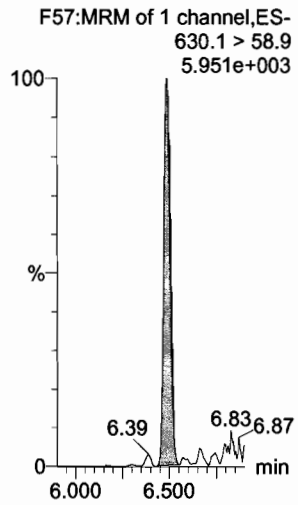
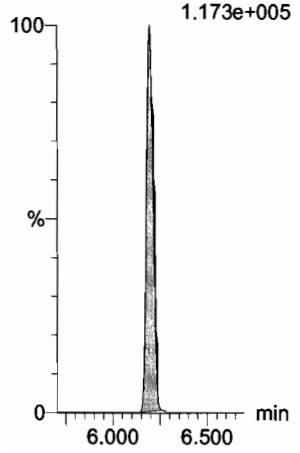
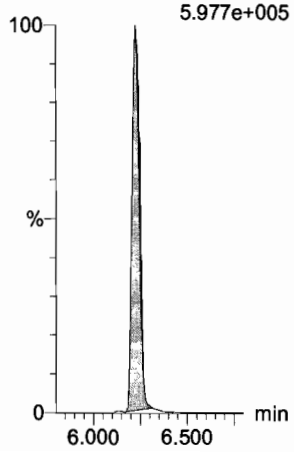


13C2-PFTeDA



d5-N-ETFOSA



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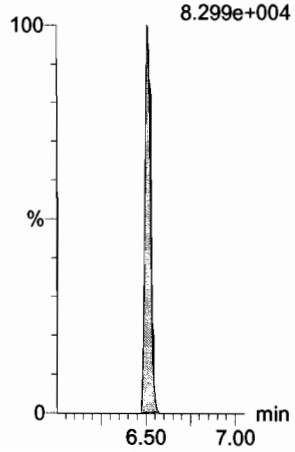

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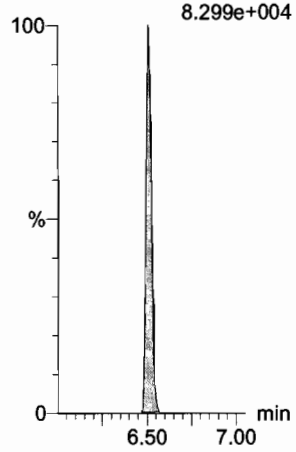
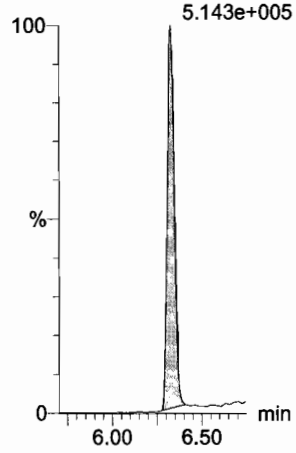
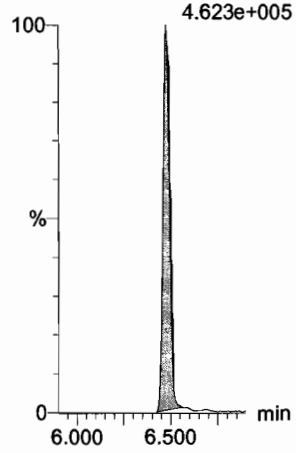


d7-N-MeFOSE



d9-N-EtFOSE

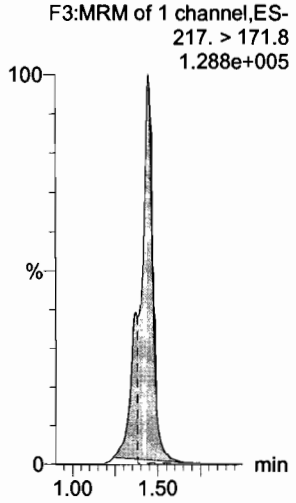


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

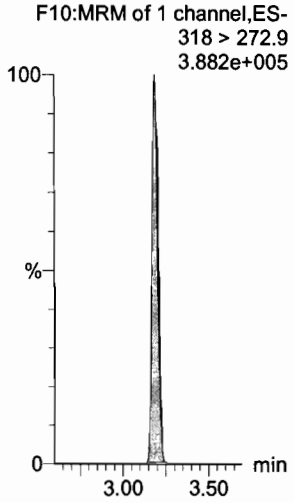
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

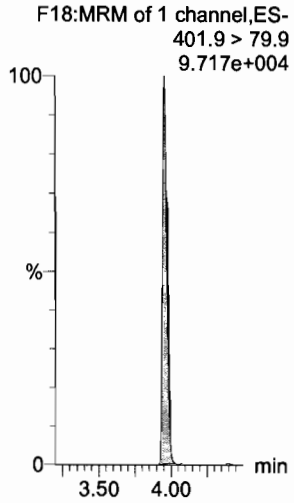
13C4-PFBA



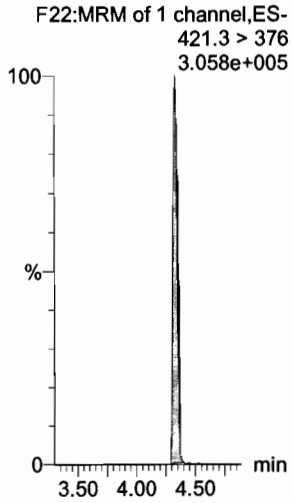
13C5-PFHxA



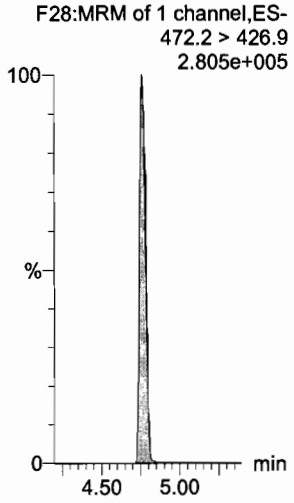
13C3-PFHxS



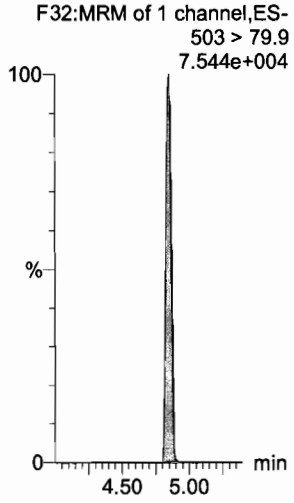
13C8-PFOA



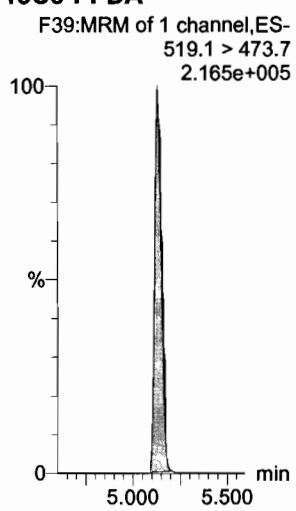
13C9-PFNA



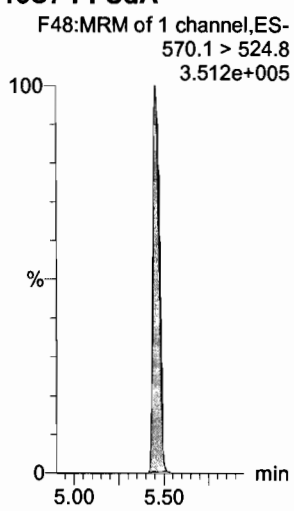
13C4-PFOS



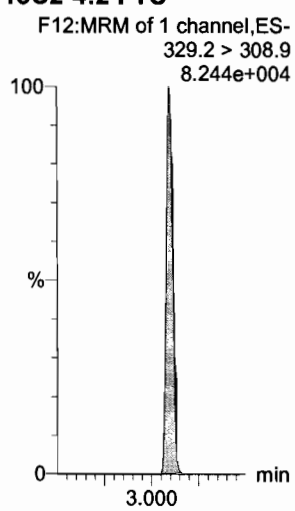
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS

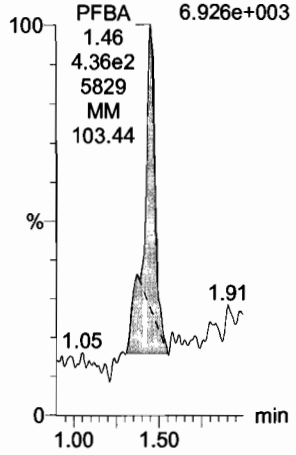


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_3, Date: 05-Feb-2018, Time: 12:16:04, ID: ST180205M1-2 PFC CS-1 18A3008, Description: PFC CS-1 18A3008

PFBA



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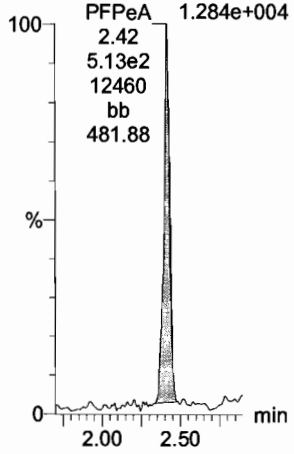
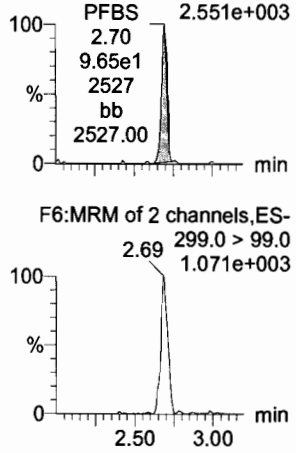
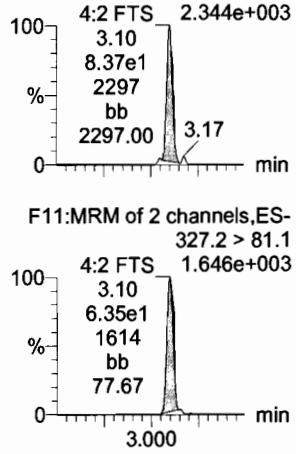


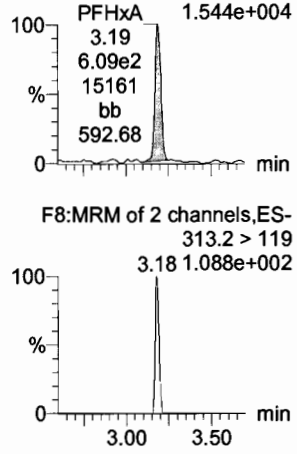
PFBS



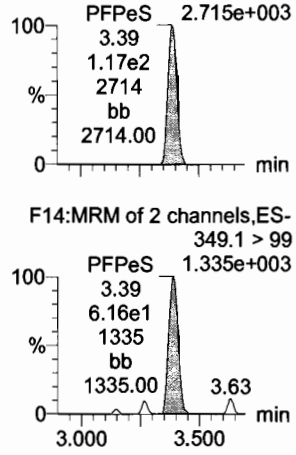
4:2 FTS



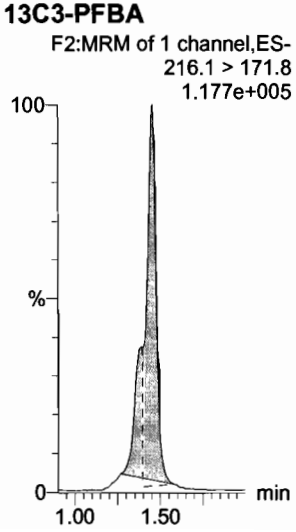
PFHxA



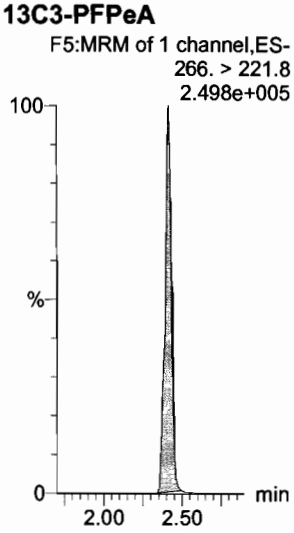
PFPeS



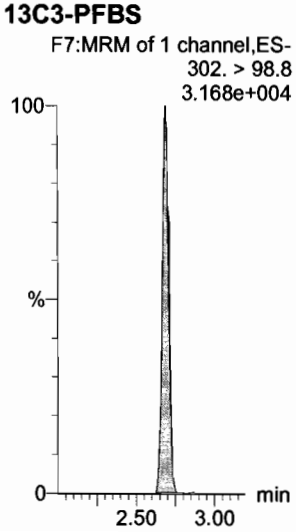
13C3-PFBA



13C3-PFPeA



13C3-PFBS



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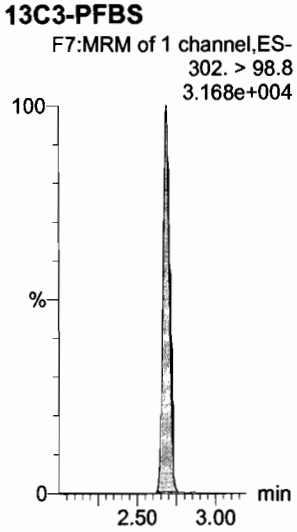

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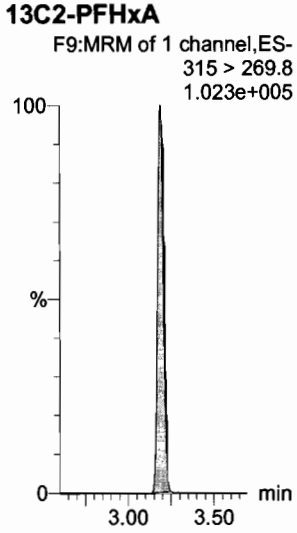
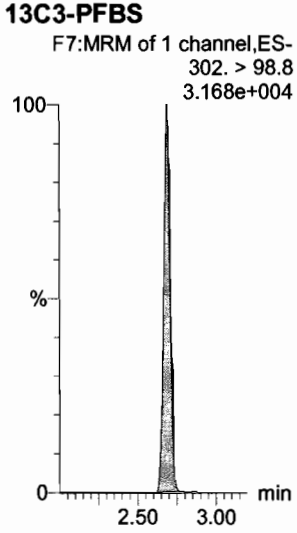


13C3-PFBS

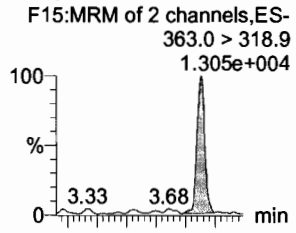


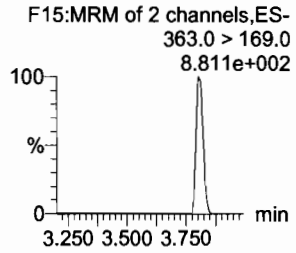
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

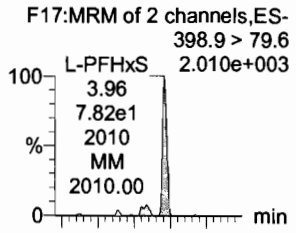
Name: 180205M1_3, Date: 05-Feb-2018, Time: 12:16:04, ID: ST180205M1-2 PFC CS-1 18A3008, Description: PFC CS-1 18A3008

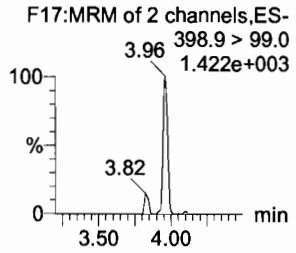
PFHpA



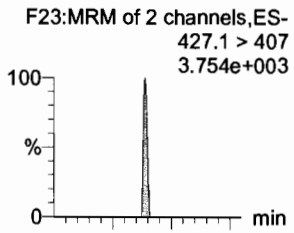


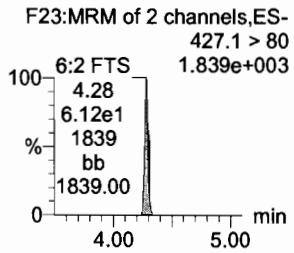
L-PFHxS



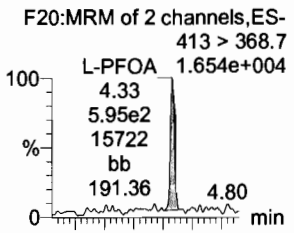


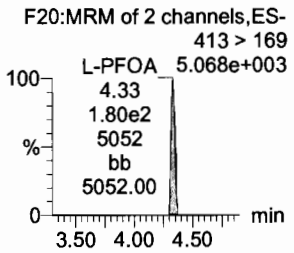
6:2 FTS



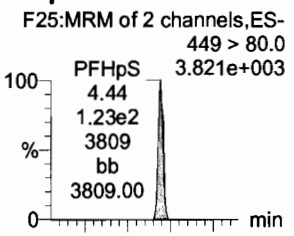


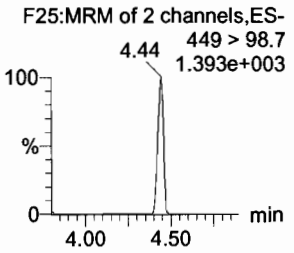
L-PFOA



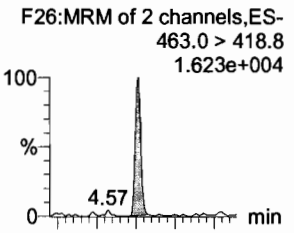


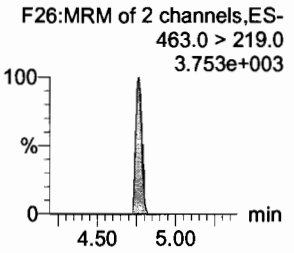
PFHpS



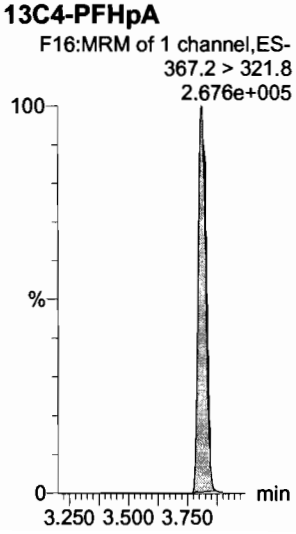


PFNA





13C4-PFHpA



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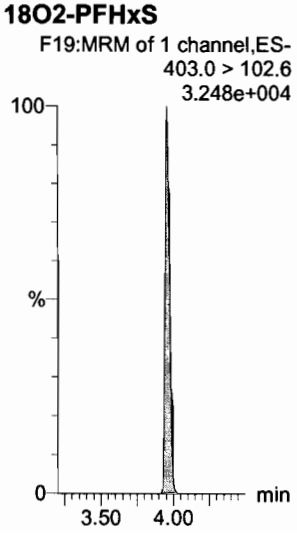

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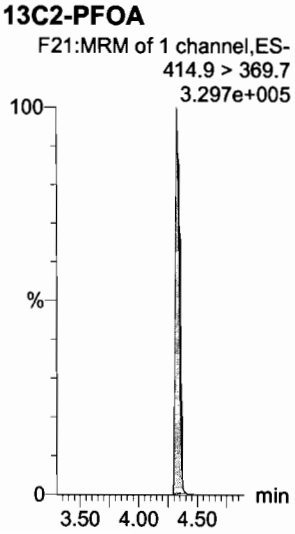

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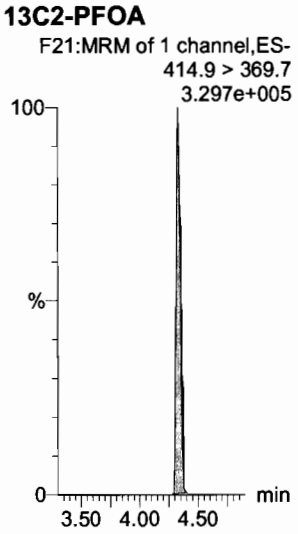

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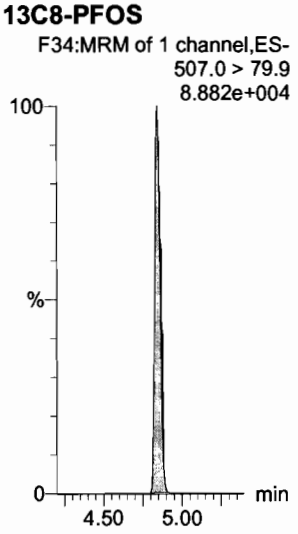

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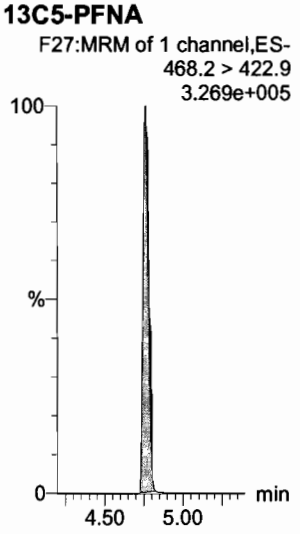

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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_3, Date: 05-Feb-2018, Time: 12:16:04, ID: ST180205M1-2 PFC CS-1 18A3008, Description: PFC CS-1 18A3008

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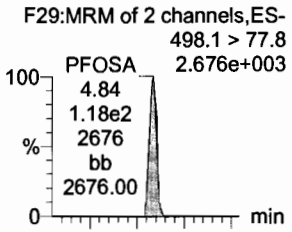

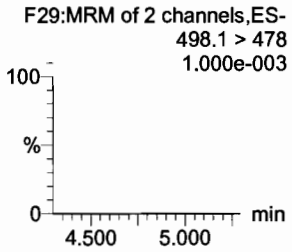

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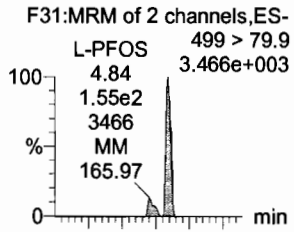

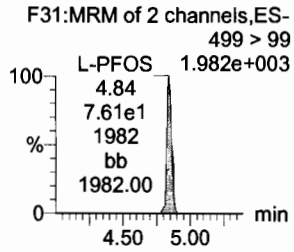

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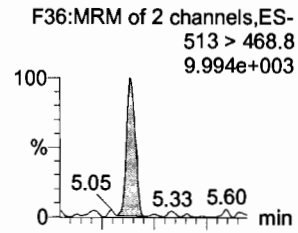

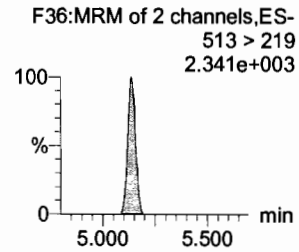

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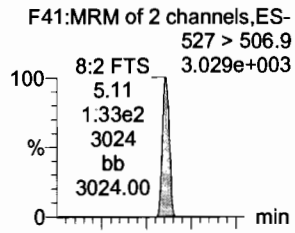

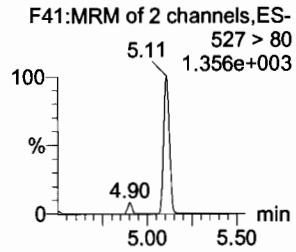

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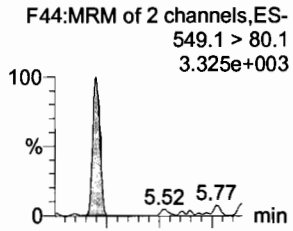

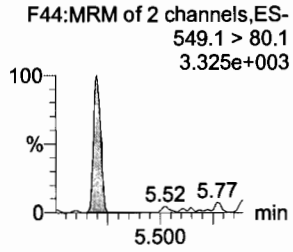

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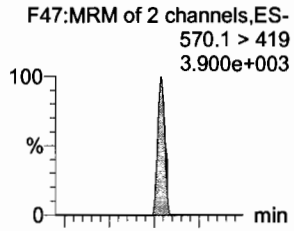

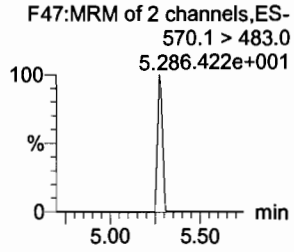

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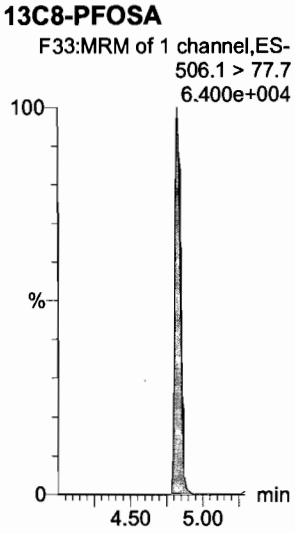

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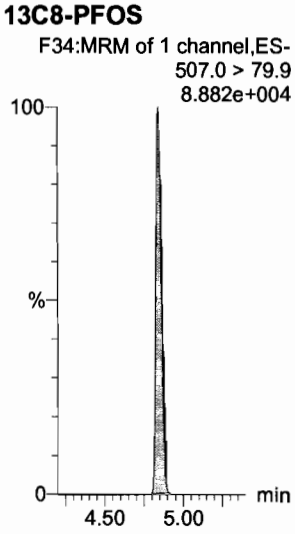

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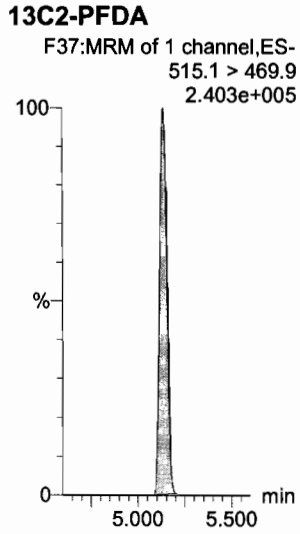

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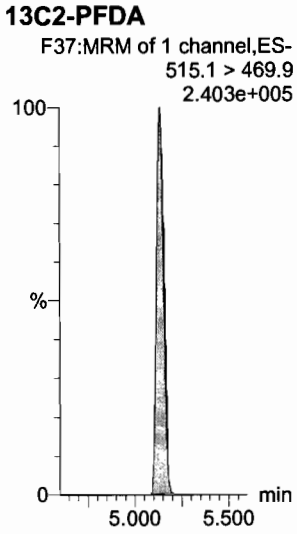

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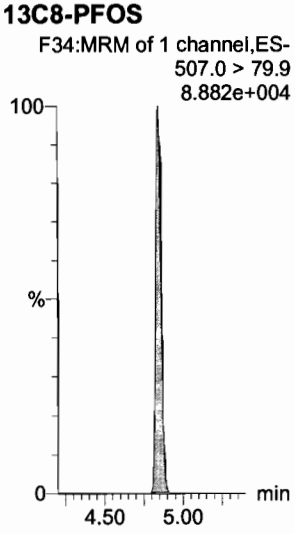

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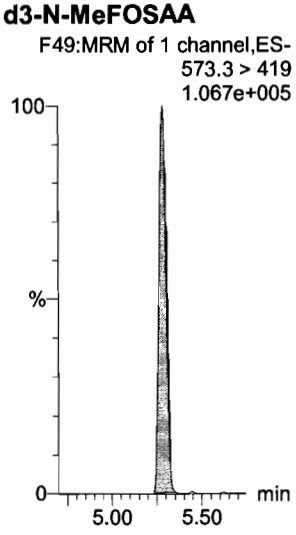

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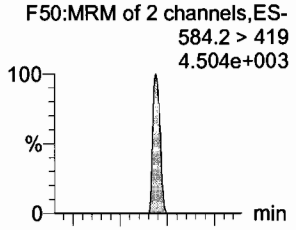

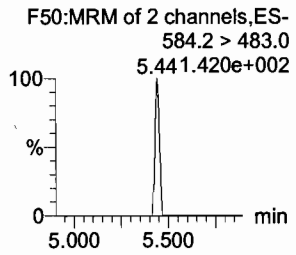

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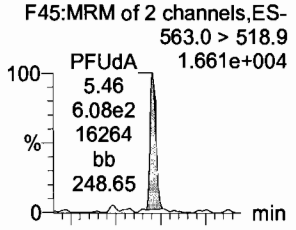

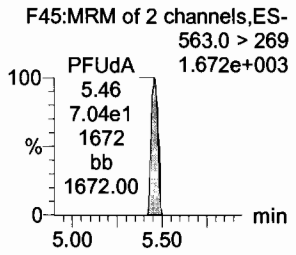

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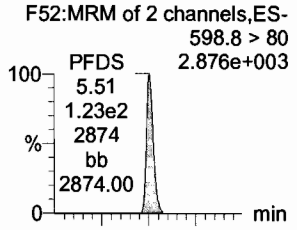

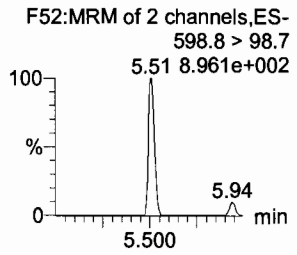

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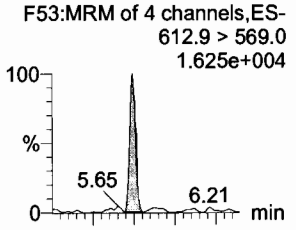

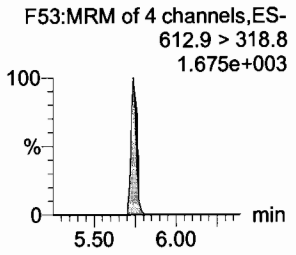

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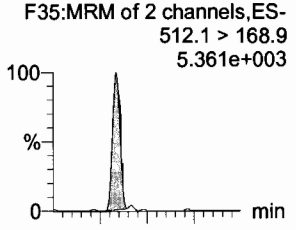

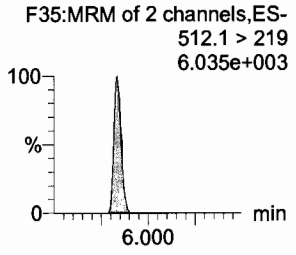

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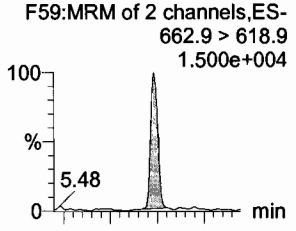

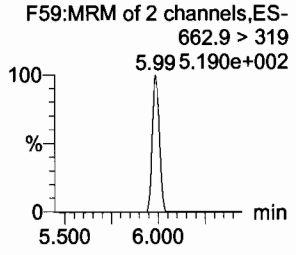

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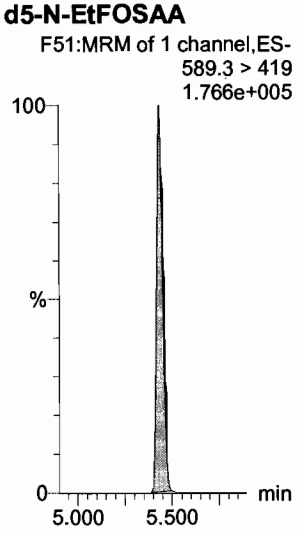

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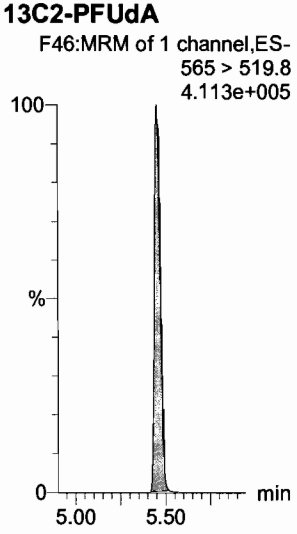

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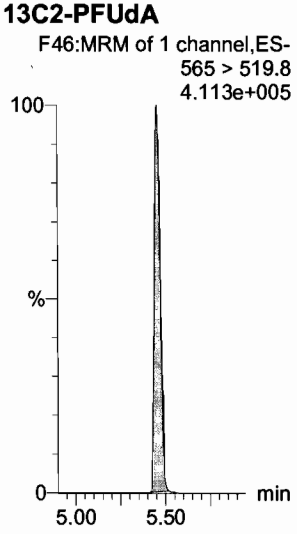

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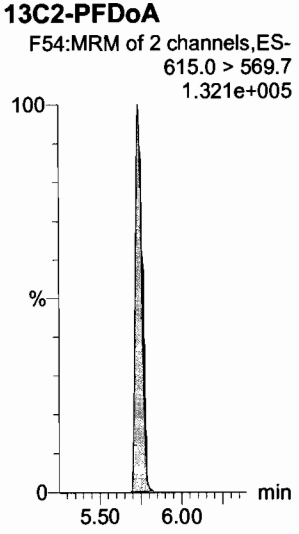

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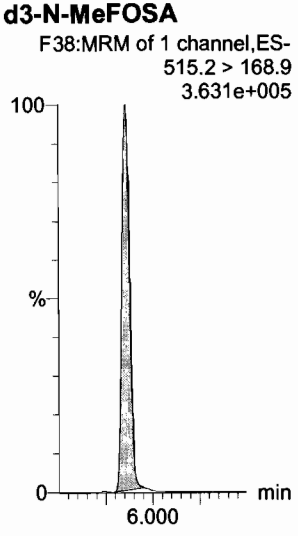

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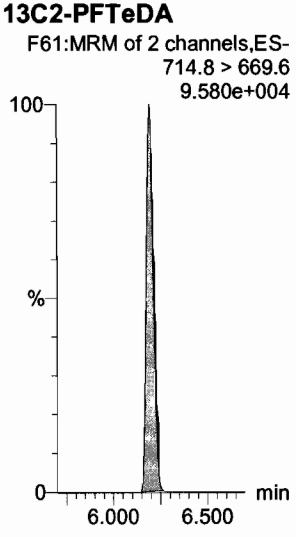

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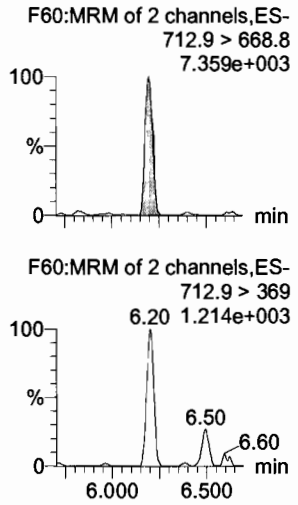

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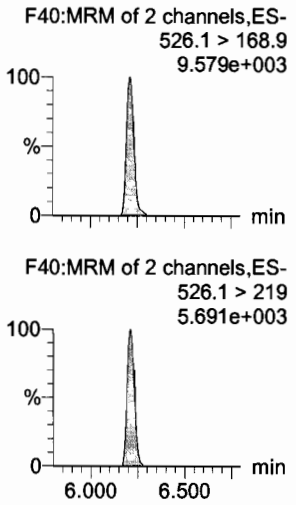

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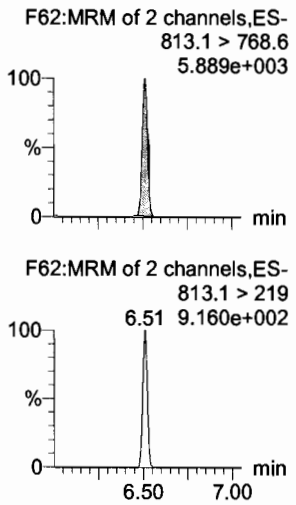

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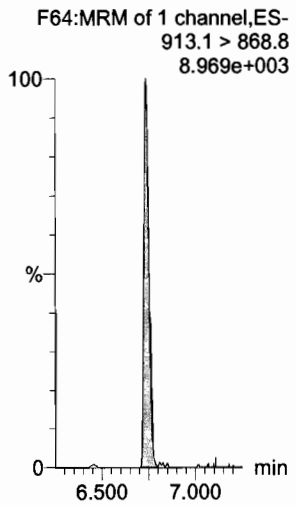
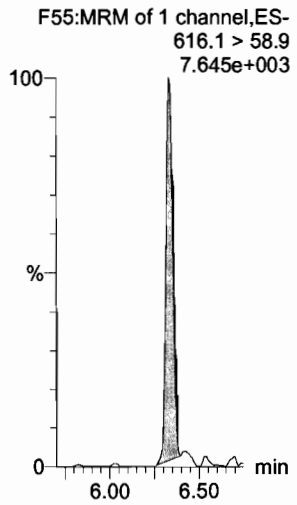


N-MeFOSE



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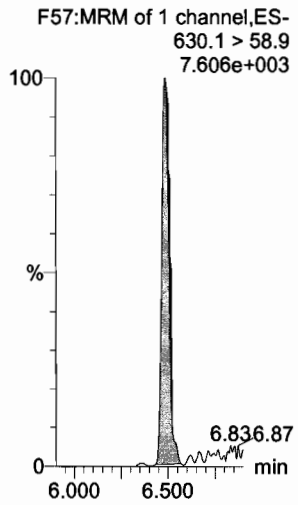

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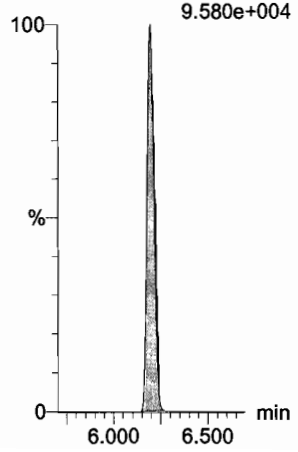

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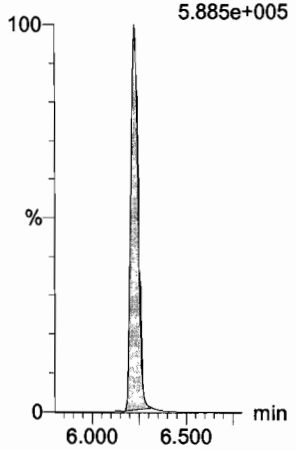

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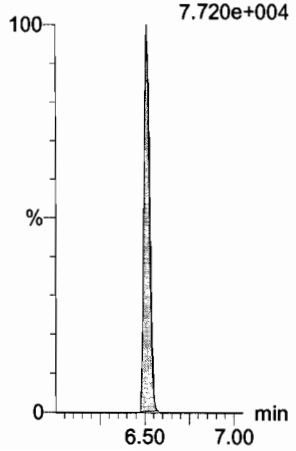

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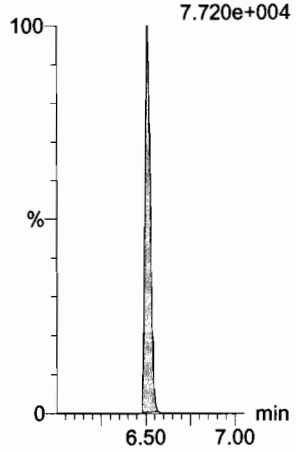
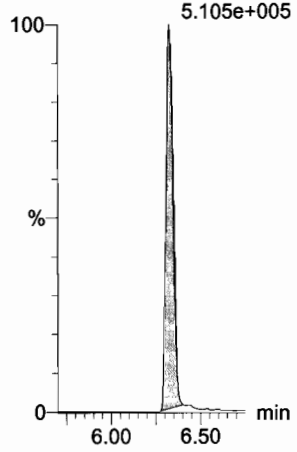
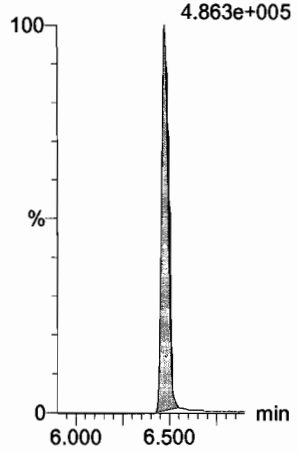


d7-N-MeFOSE



d9-N-EtFOSE

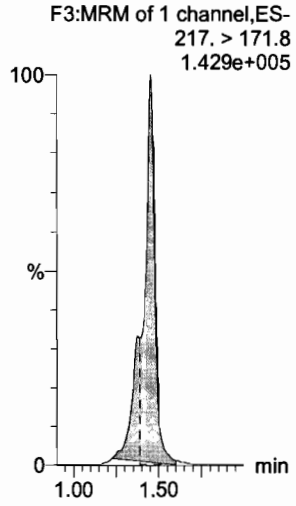


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

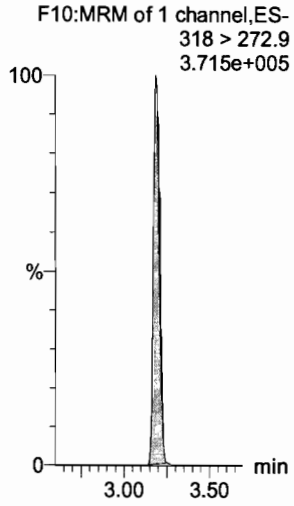
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_3, Date: 05-Feb-2018, Time: 12:16:04, ID: ST180205M1-2 PFC CS-1 18A3008, Description: PFC CS-1 18A3008

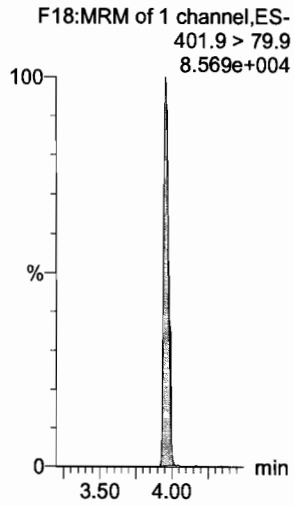
13C4-PFBA



13C5-PFHxA



13C3-PFHxS



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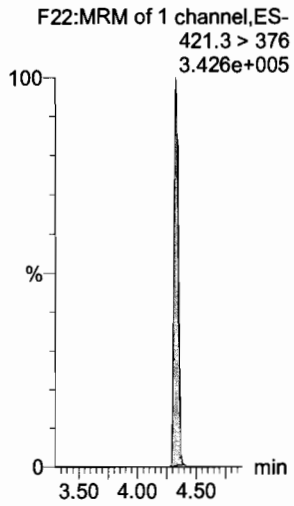

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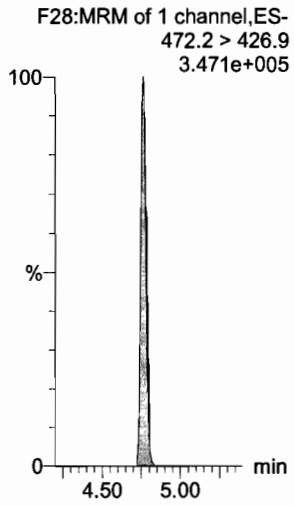
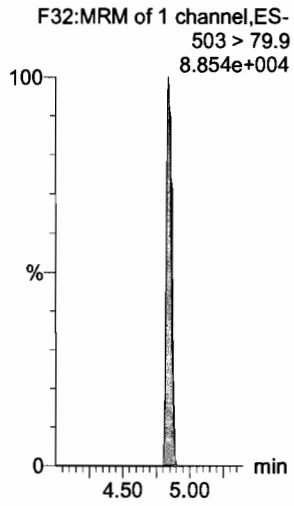


13C4-PFOS



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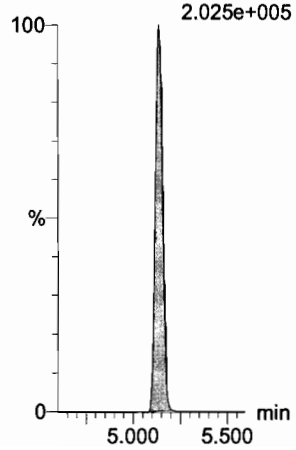

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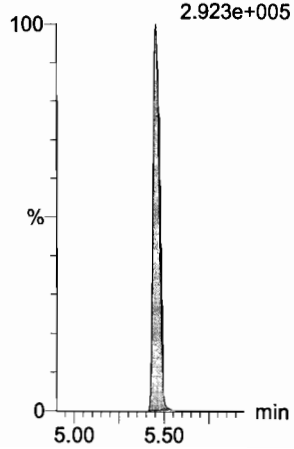
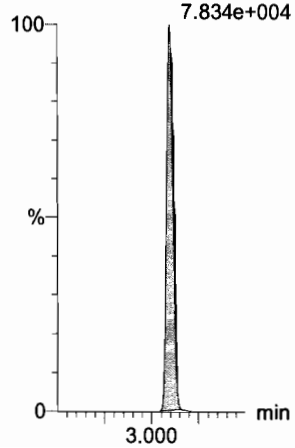


13C2-4:2 FTS



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

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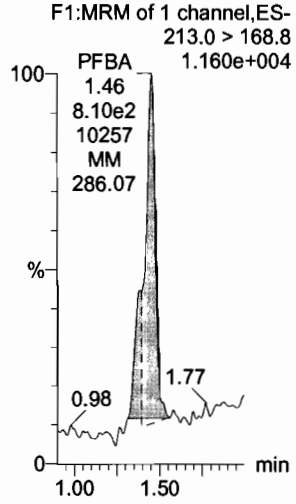

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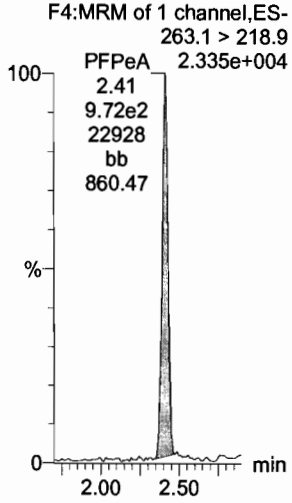

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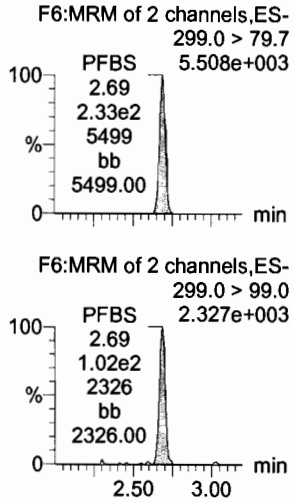
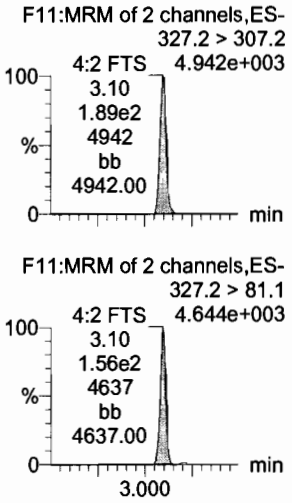


4:2 FTS



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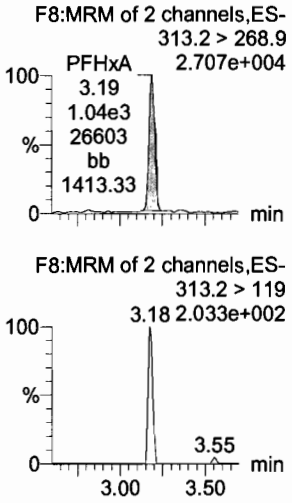

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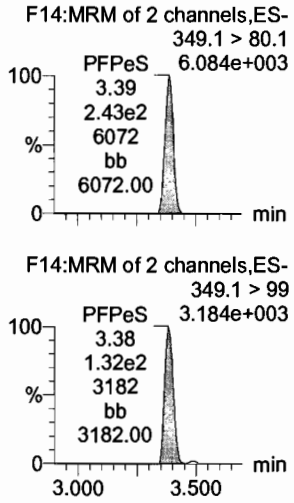
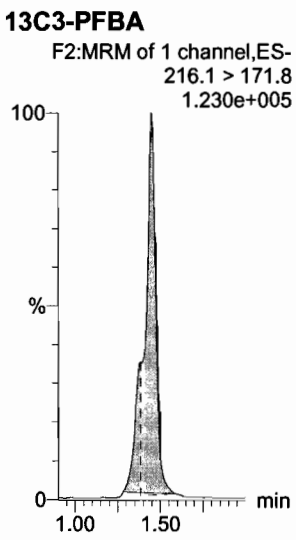


13C3-PFBA



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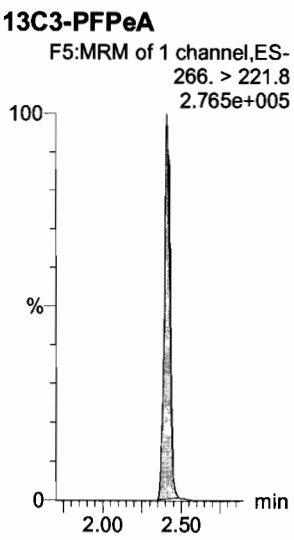

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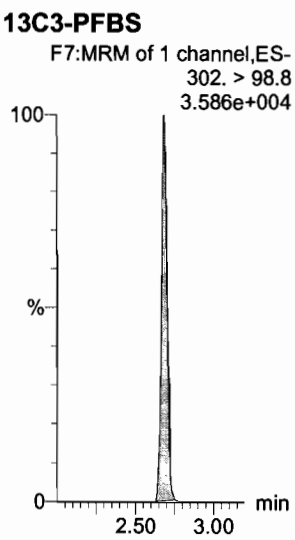

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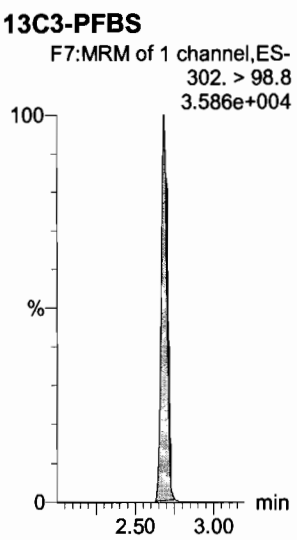

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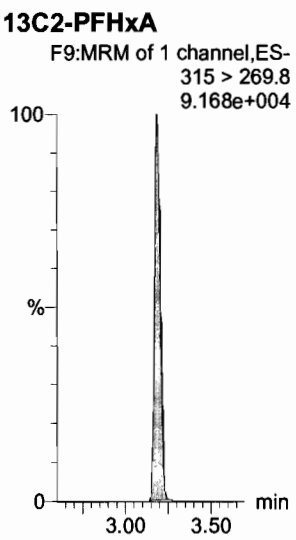

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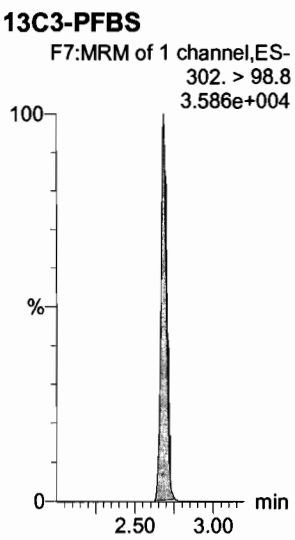
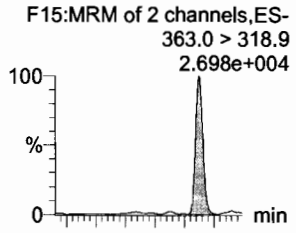


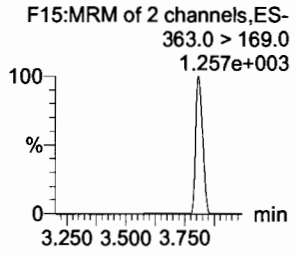
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

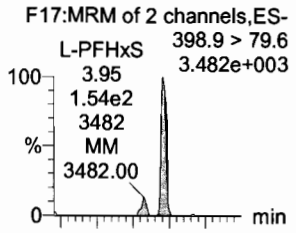
Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

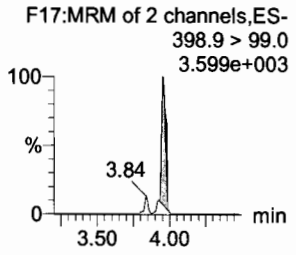
PFHpA



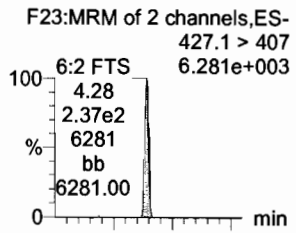


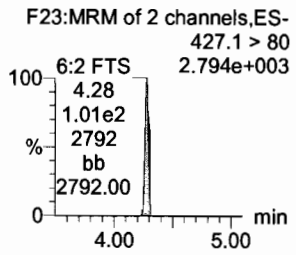
L-PFHxS



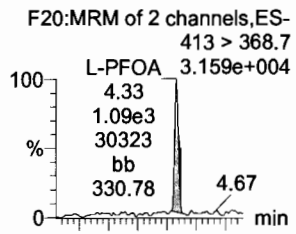


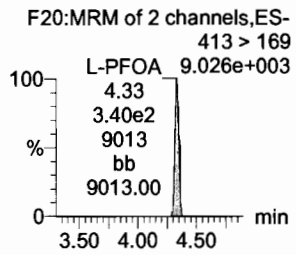
6:2 FTS



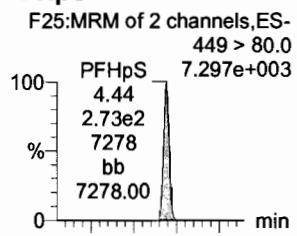


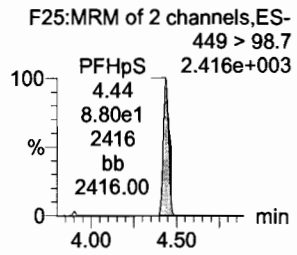
L-PFOA





PFHpS





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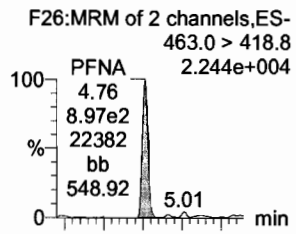
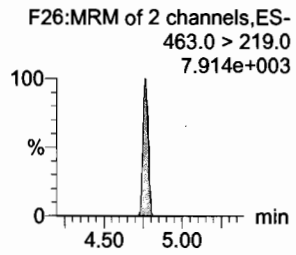
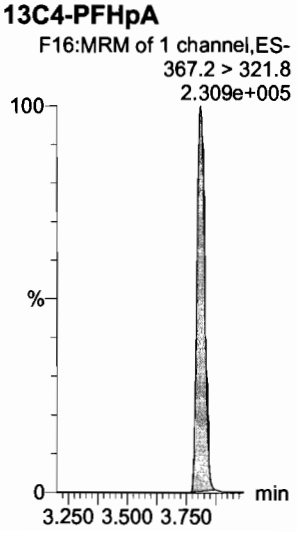
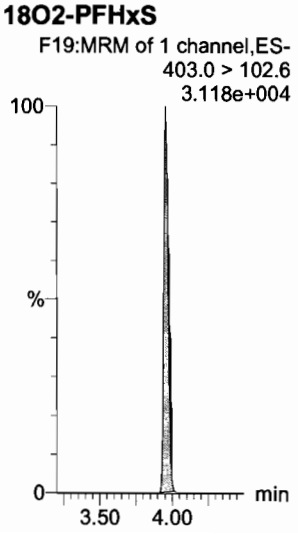




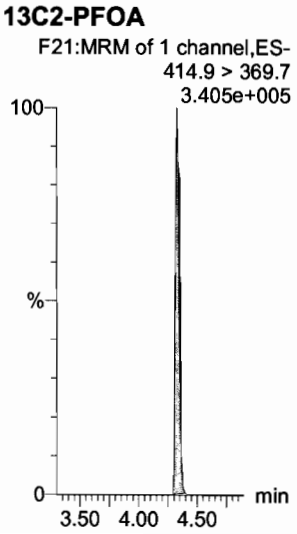
13C4-PFHpA



18O2-PFHxS



13C2-PFOA



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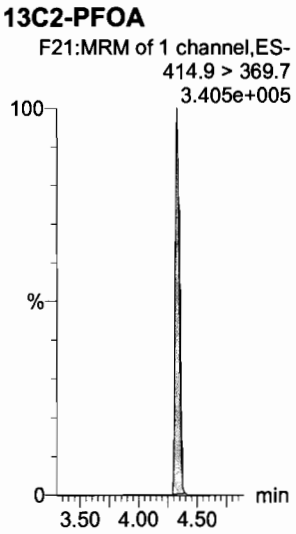
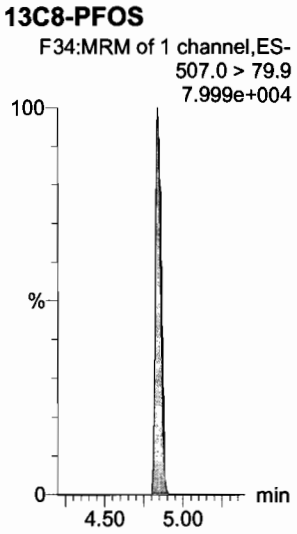
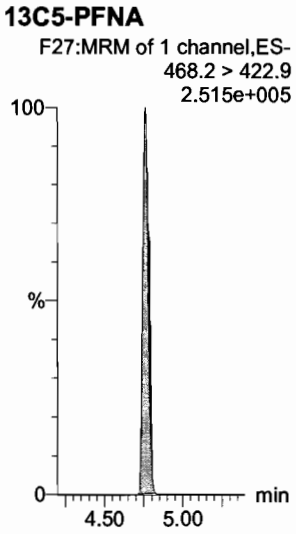


13C8-PFOS



13C5-PFNA

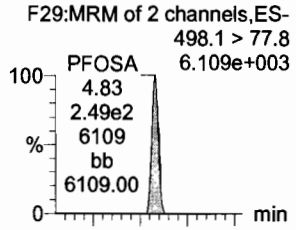


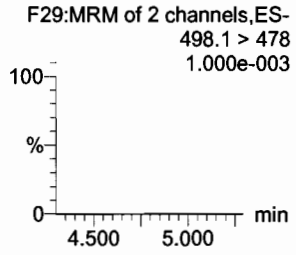
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

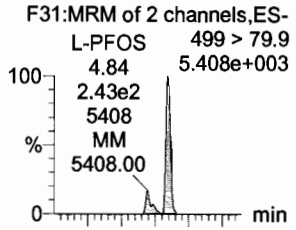
Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

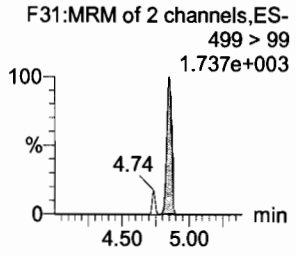
PFOSA



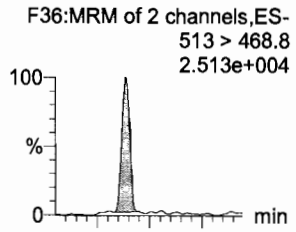


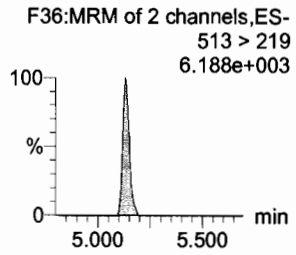
L-PFOS



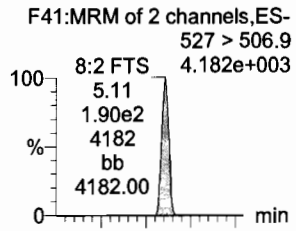


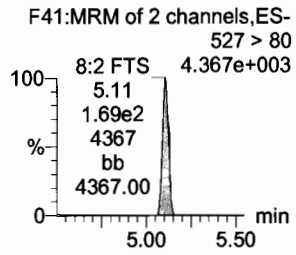
PFDA





8:2 FTS





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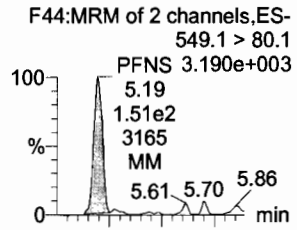
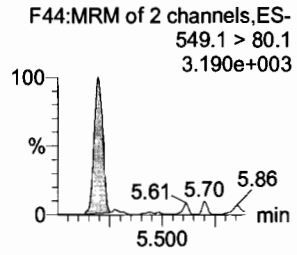
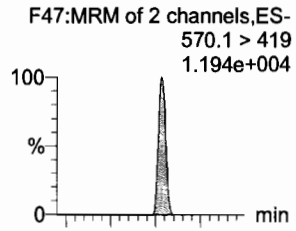
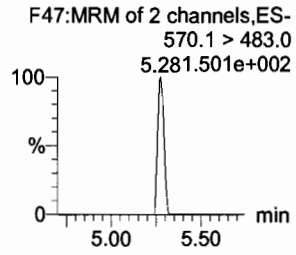


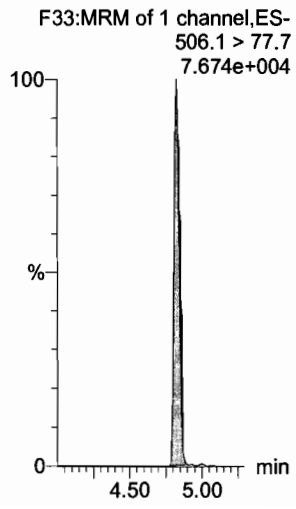


N-MeFOSAA





13C8-PFOSA



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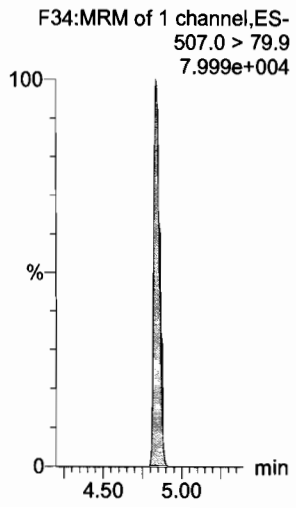
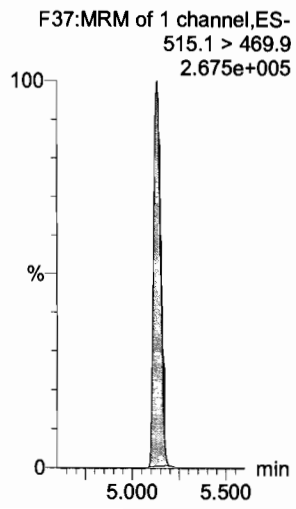


13C2-PFDA



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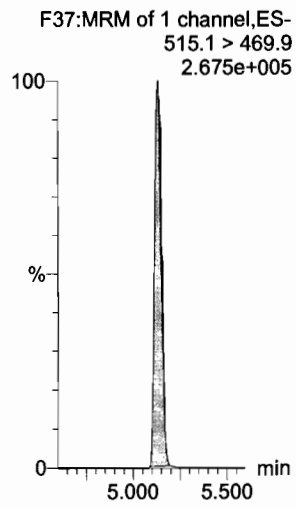
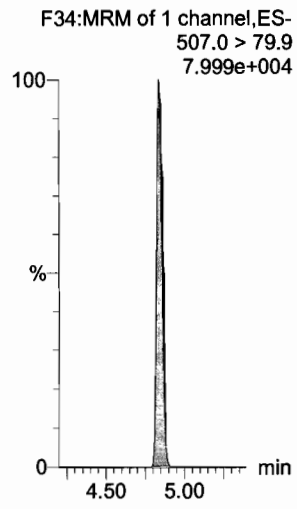
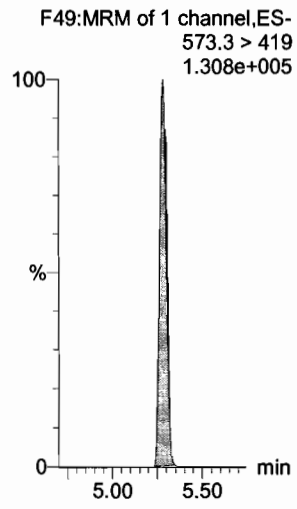


13C8-PFOS



d3-N-MeFOSAA



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Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

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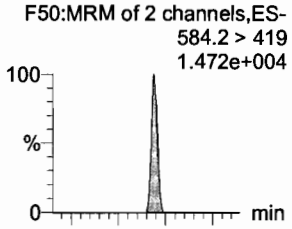

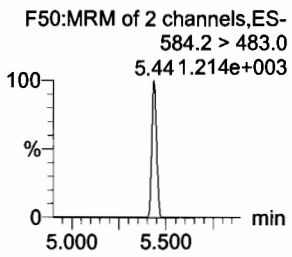

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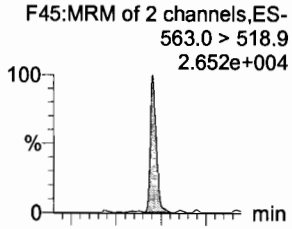

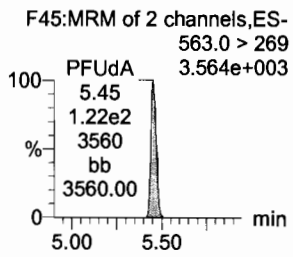

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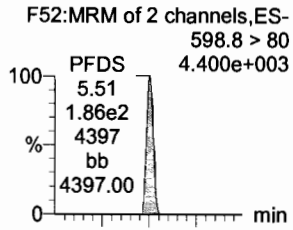

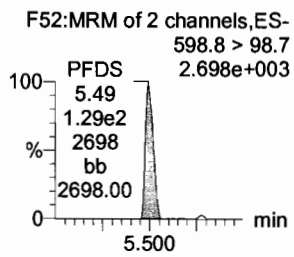

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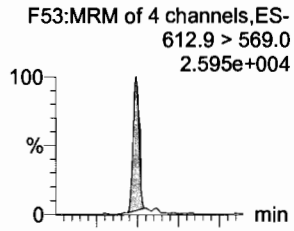

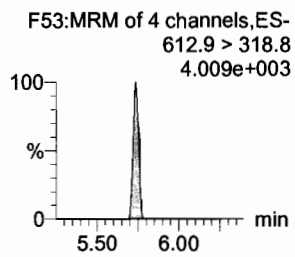

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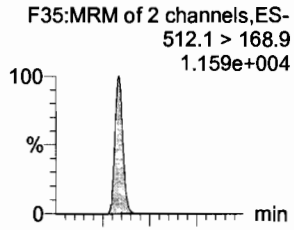

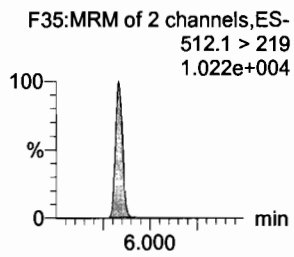

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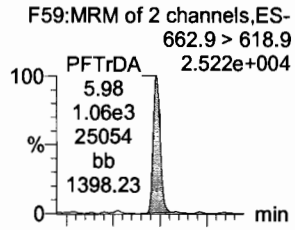
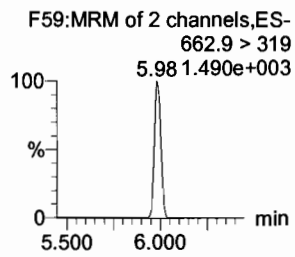
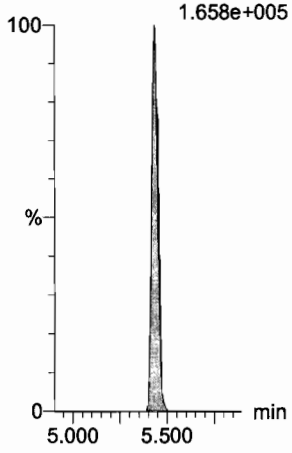




d5-N-EtFOSAA



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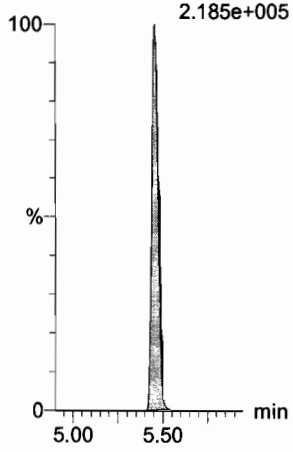

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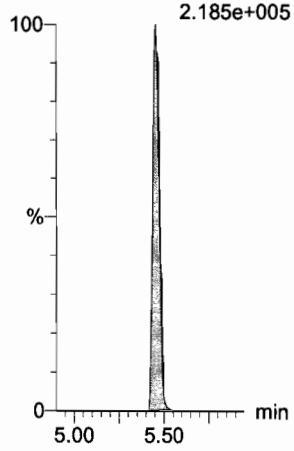
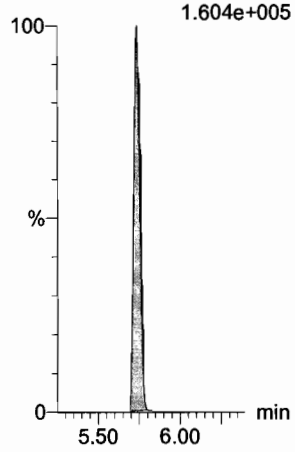


13C2-PFDoA



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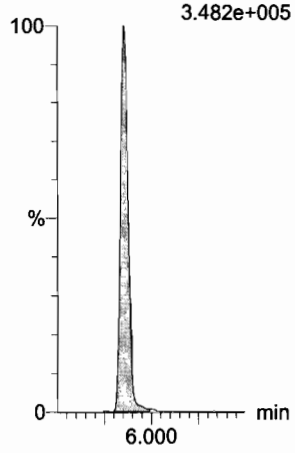

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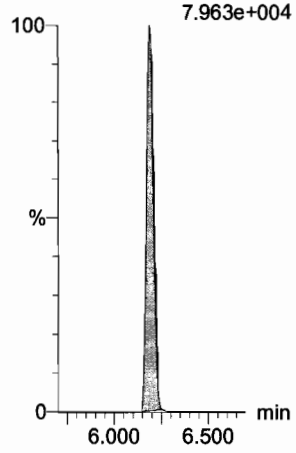

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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

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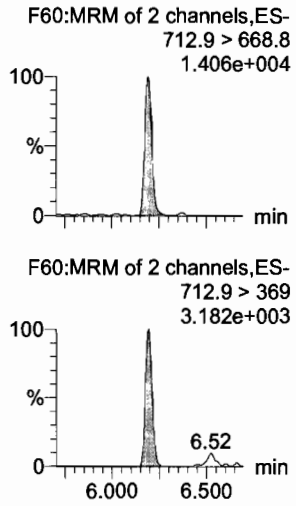

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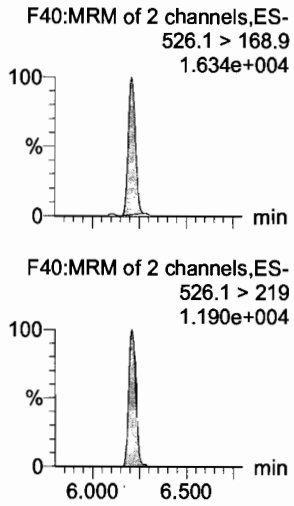

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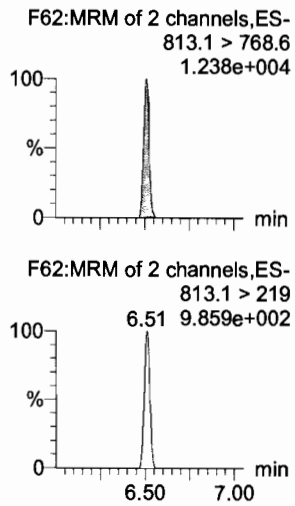

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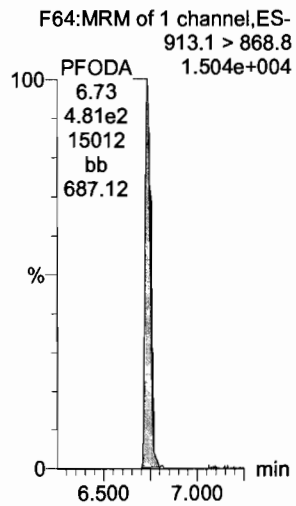

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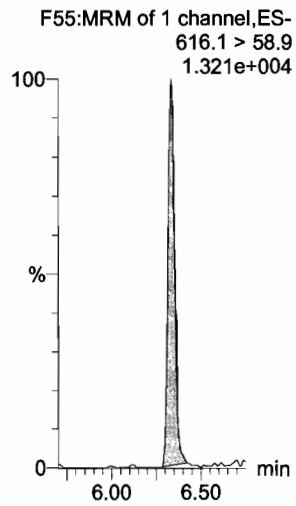

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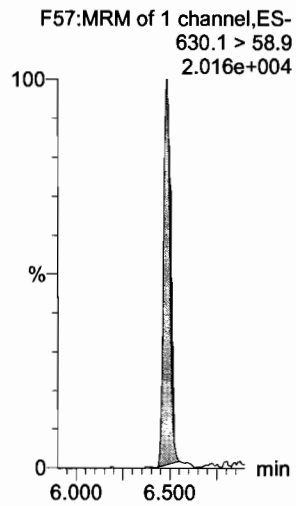

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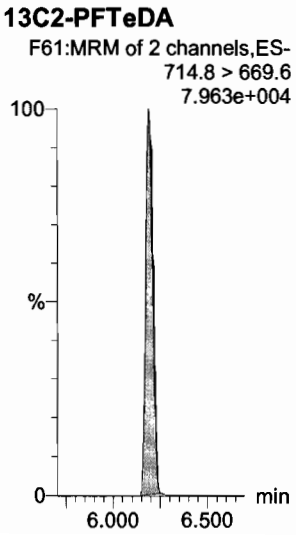
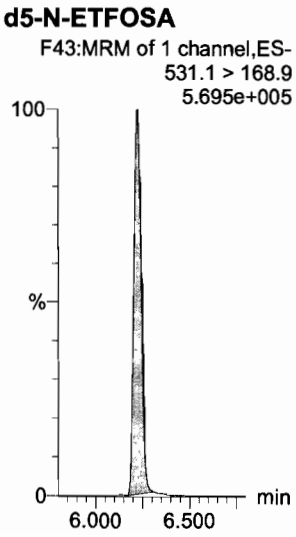


d5-N-ETFOSA



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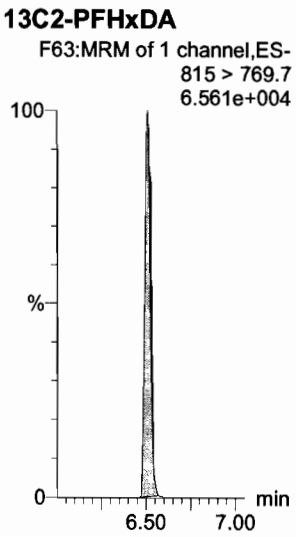

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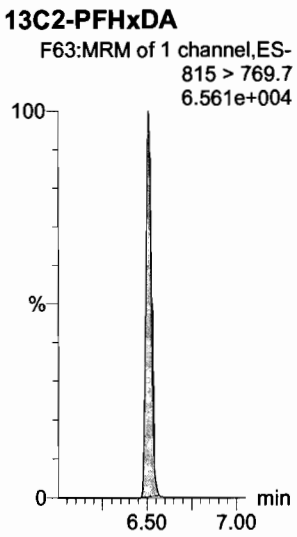

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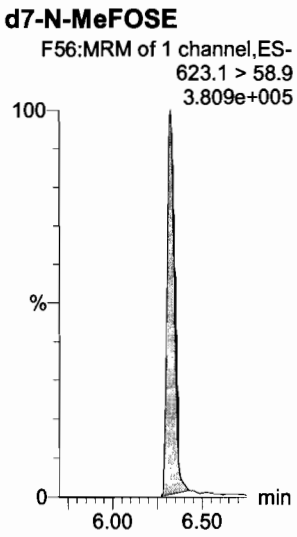
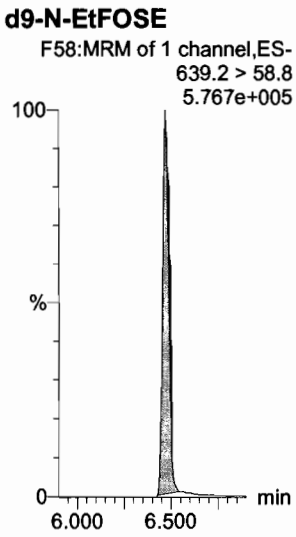


d9-N-EtFOSE



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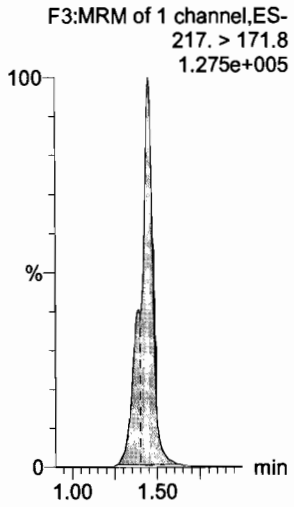
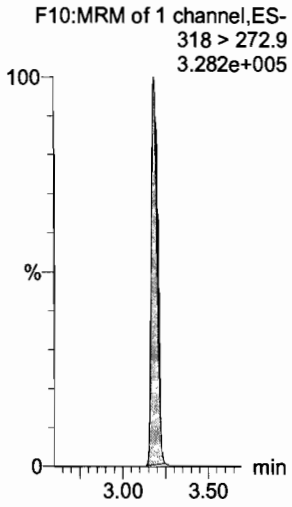
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_4, Date: 05-Feb-2018, Time: 12:27:31, ID: ST180205M1-3 PFC CS0 18A3009, Description: PFC CS0 18A3009

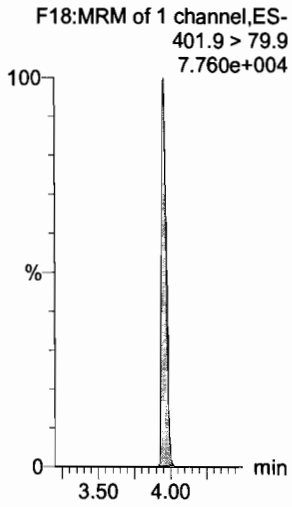
13C4-PFBA



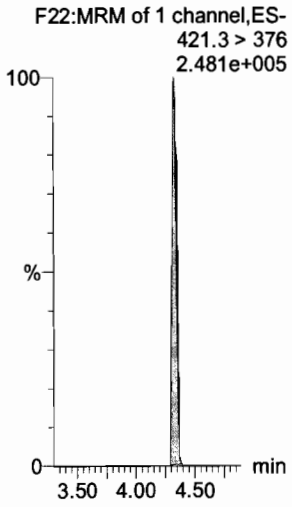
13C5-PFHxA



13C3-PFHxS



13C8-PFOA



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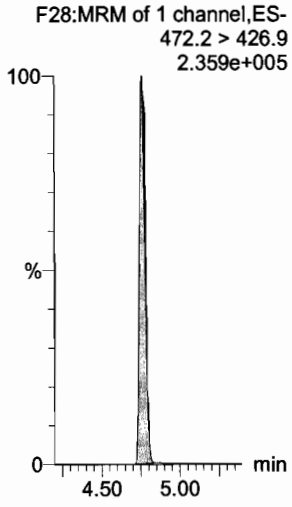
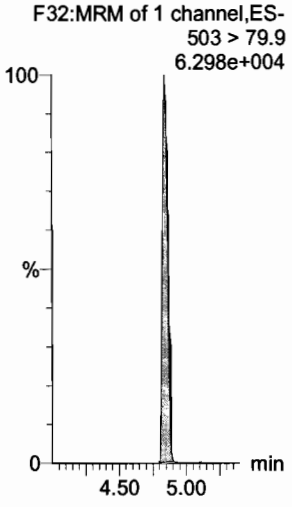


13C4-PFOS



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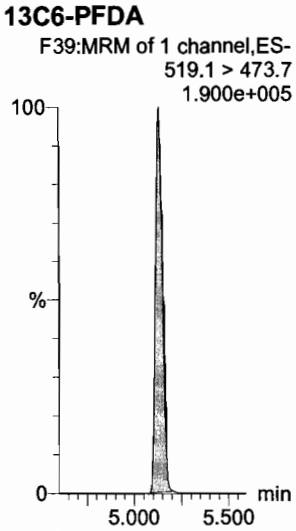
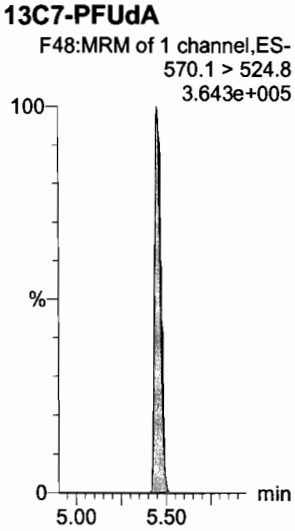


13C7-PFUdA



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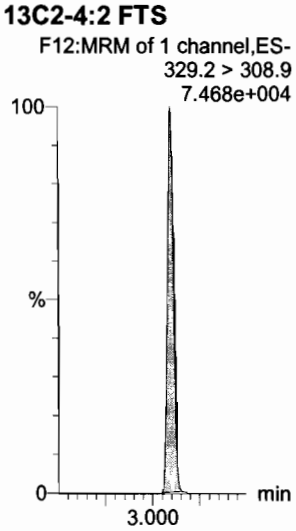

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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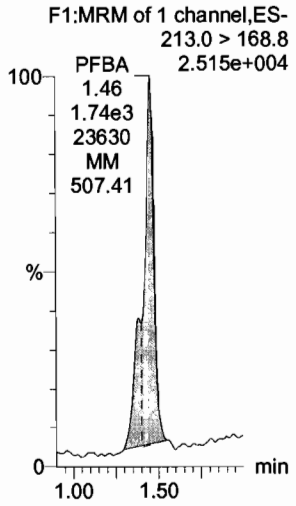
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

PFBA



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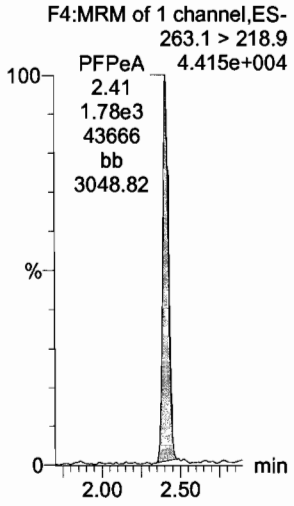
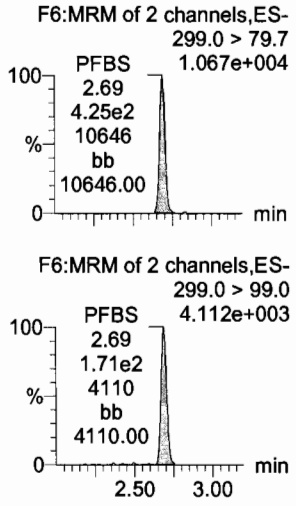
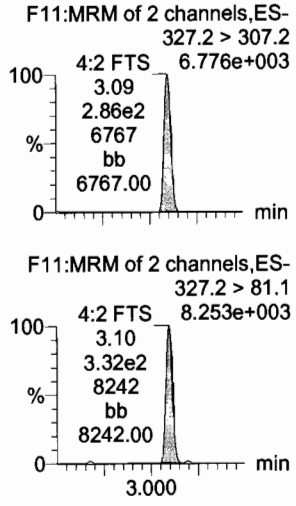


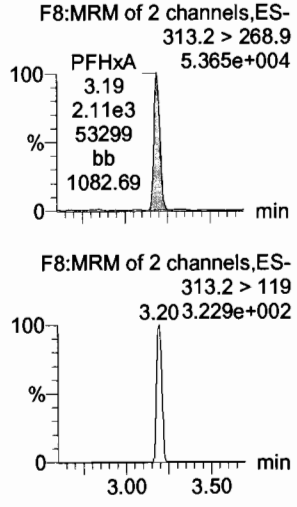
PFBS



4:2 FTS



PFHxA



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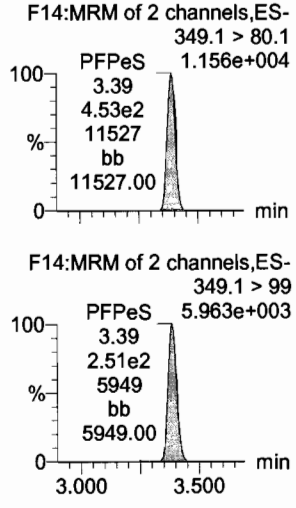

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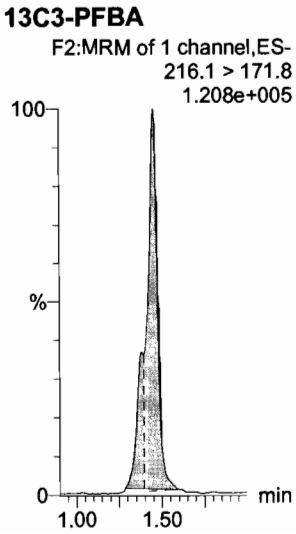

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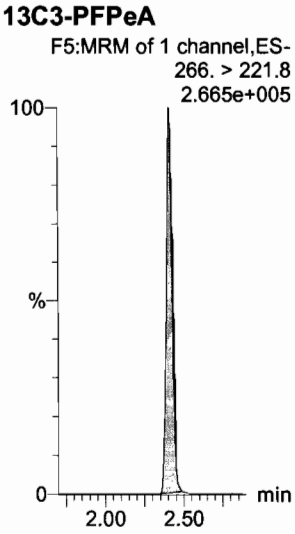

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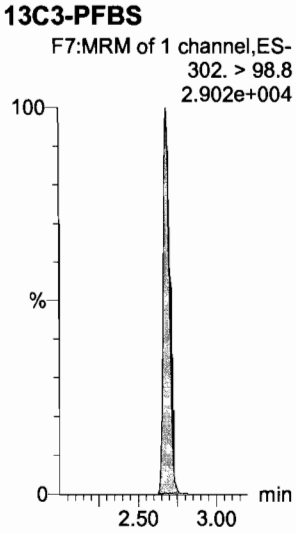

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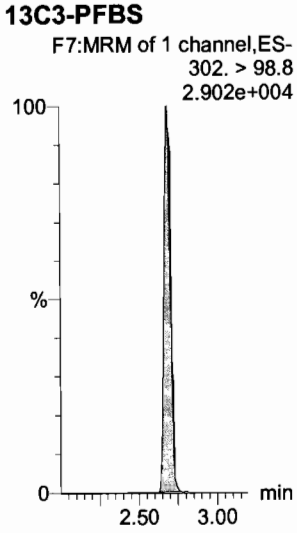

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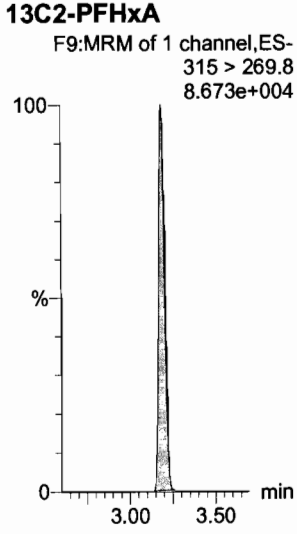

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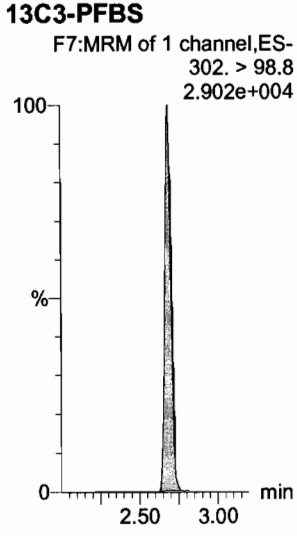

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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

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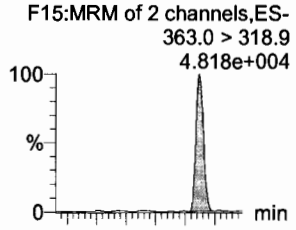
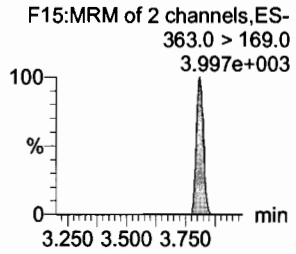
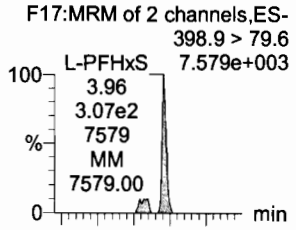
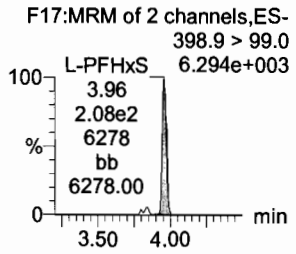




L-PFHxS





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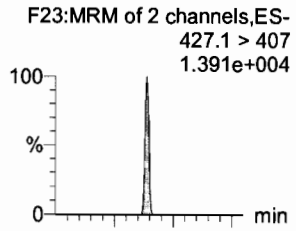

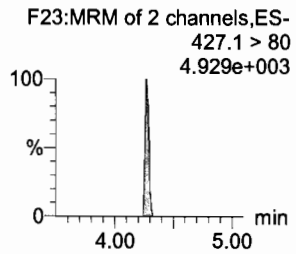

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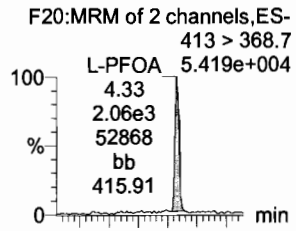

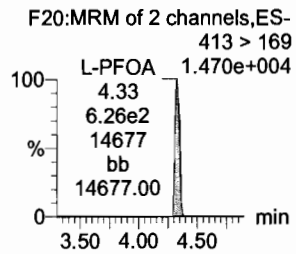

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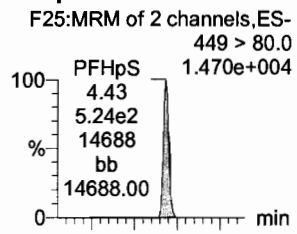

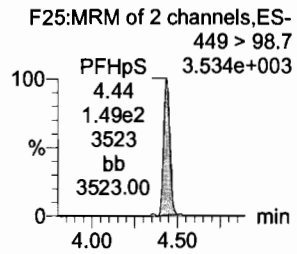

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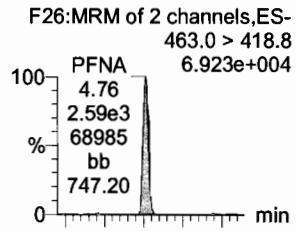

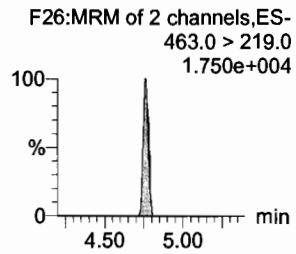

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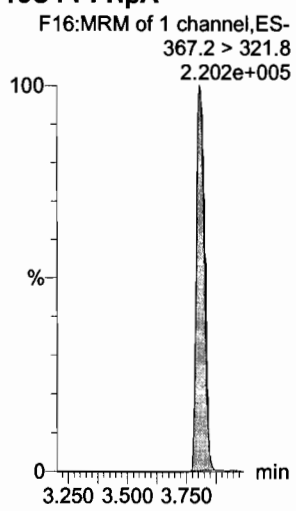

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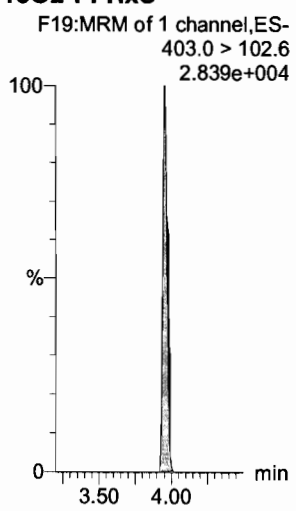

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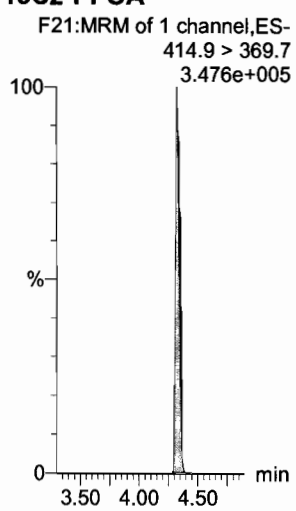

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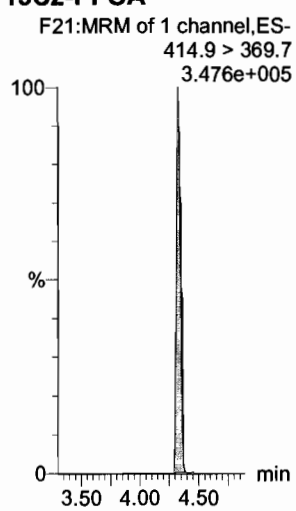

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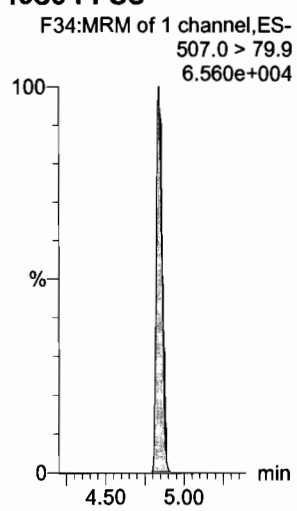

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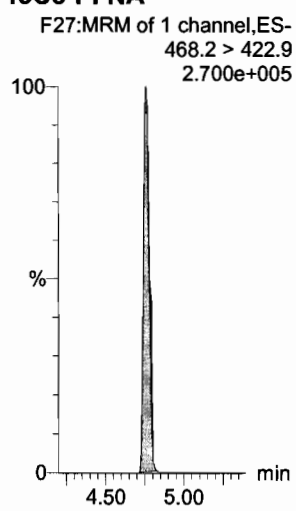

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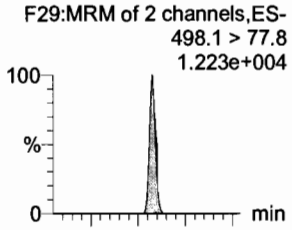
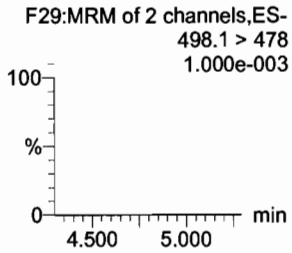
Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

PFOSA





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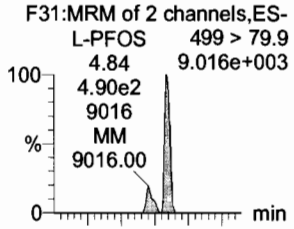

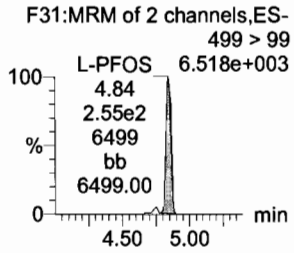

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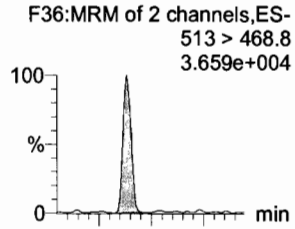

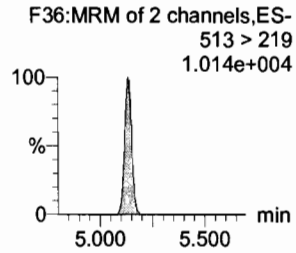

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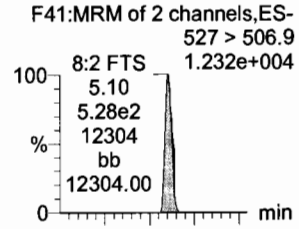

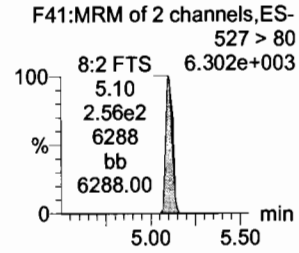

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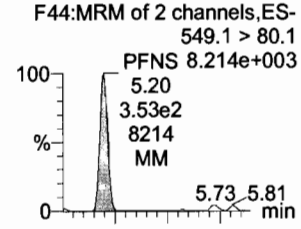

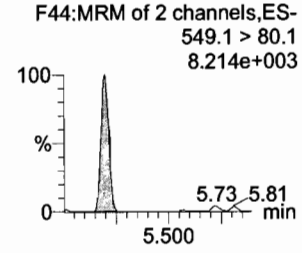

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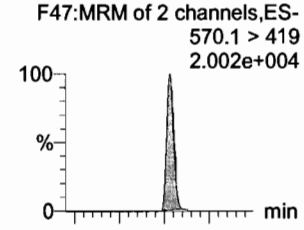

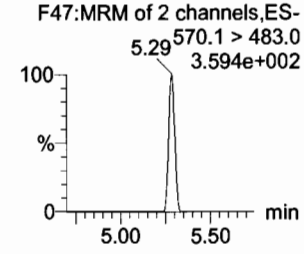

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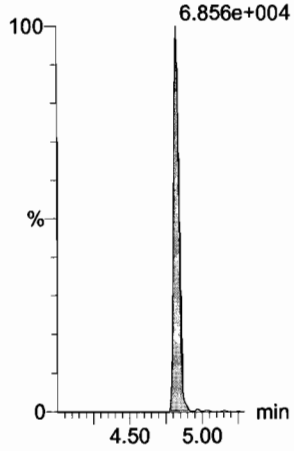

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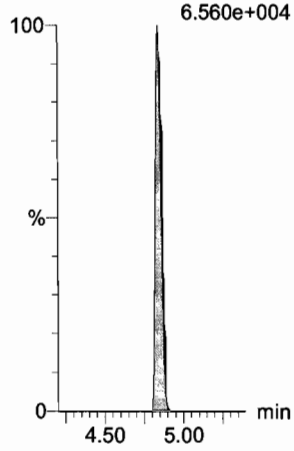

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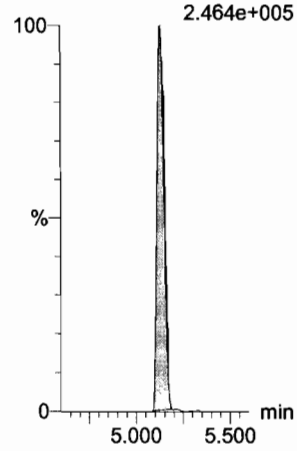

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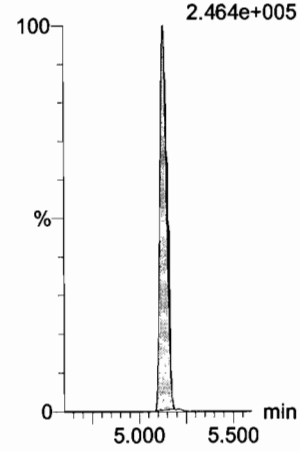

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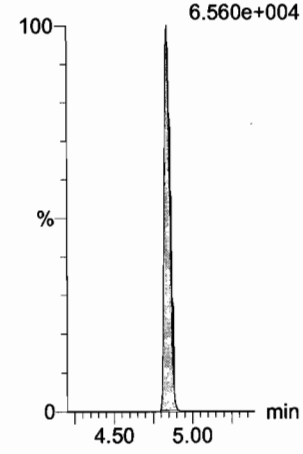

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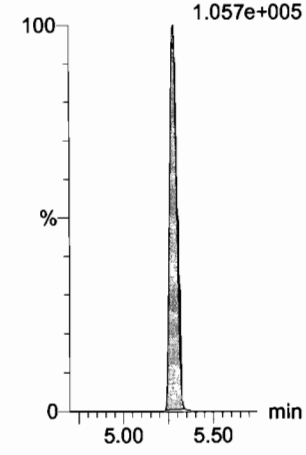

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Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

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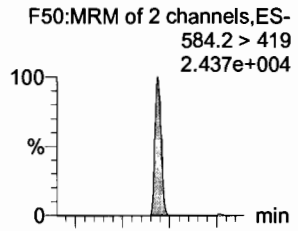

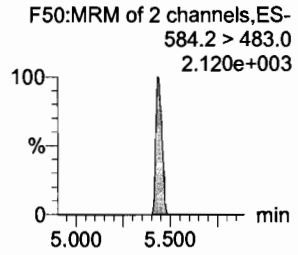

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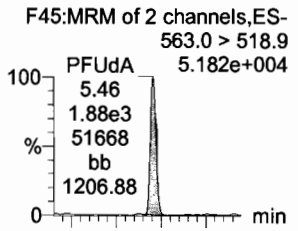

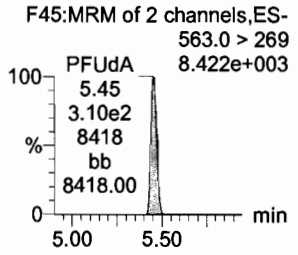

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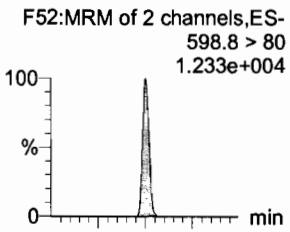

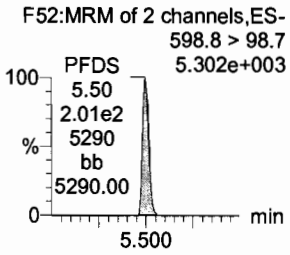

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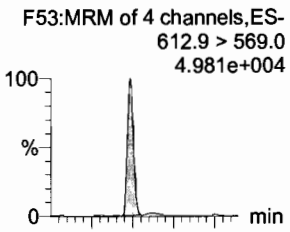

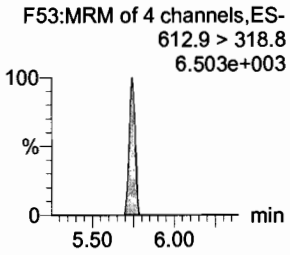

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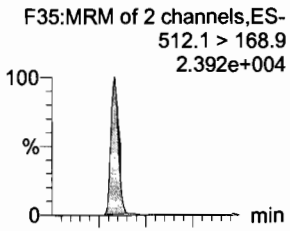

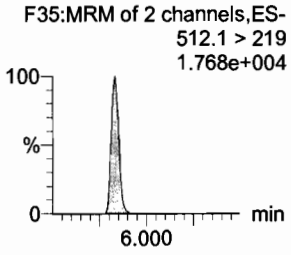

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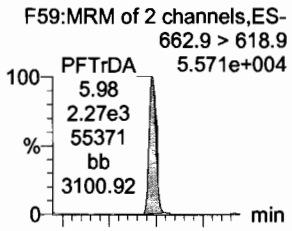
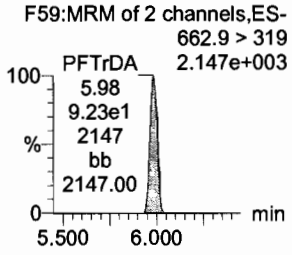
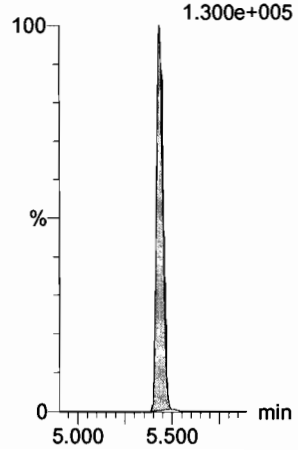
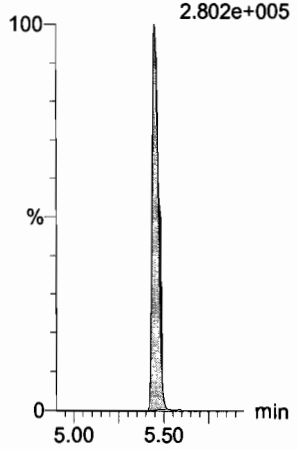




d5-N-EtFOSAA



13C2-PFUdA



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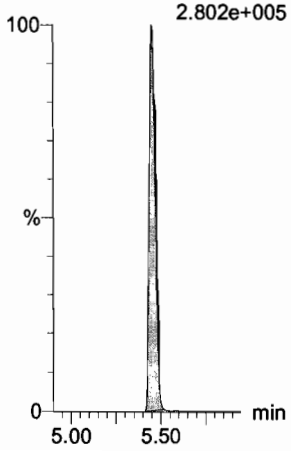
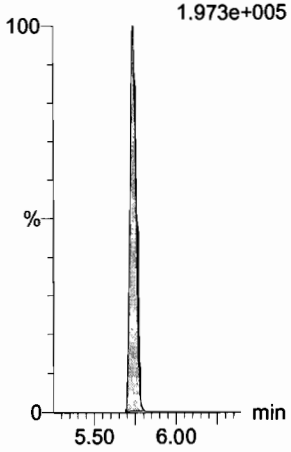
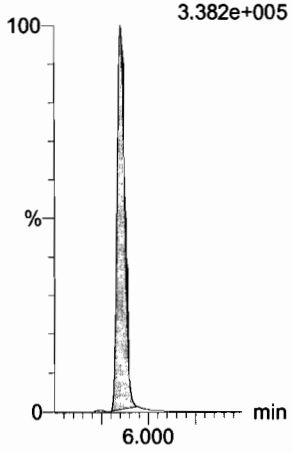


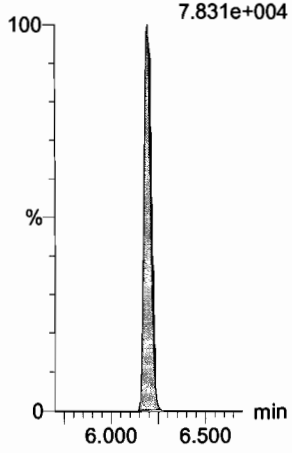
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

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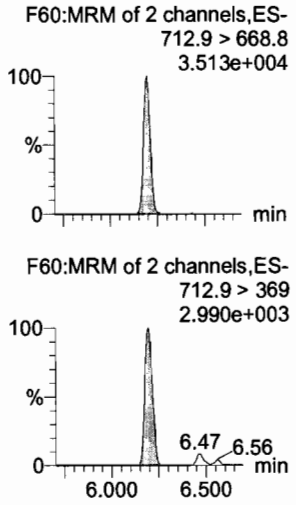

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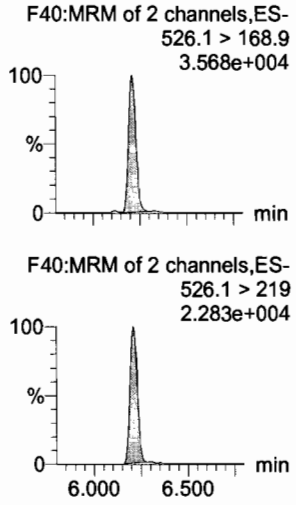

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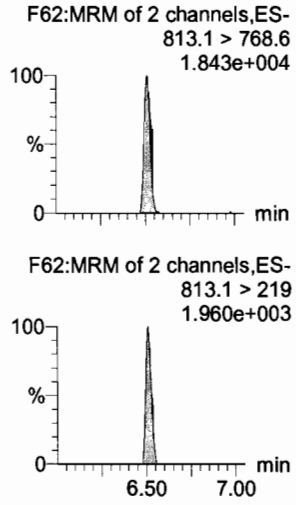

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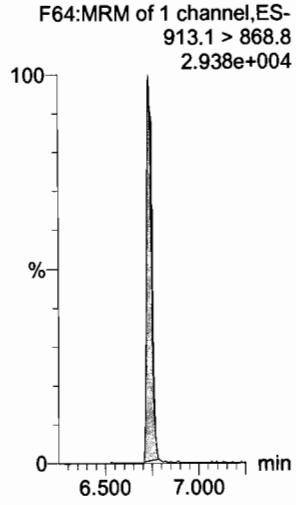
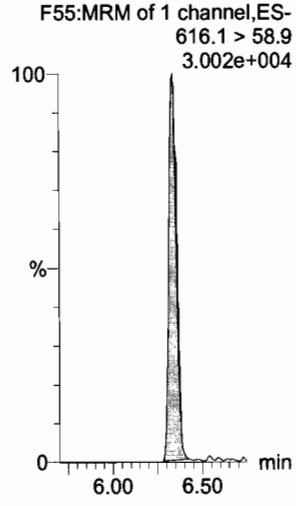


N-MeFOSE



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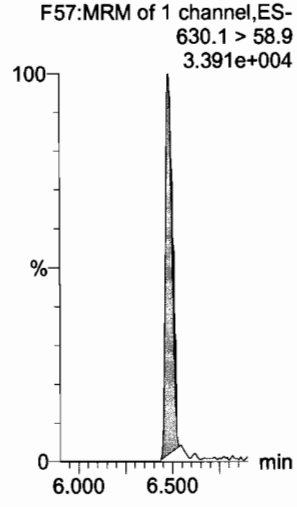

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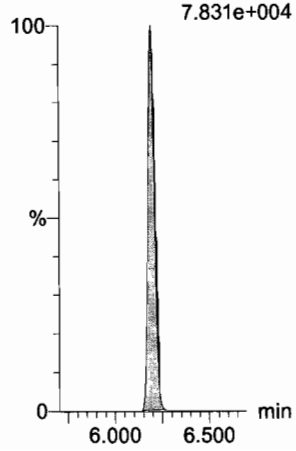
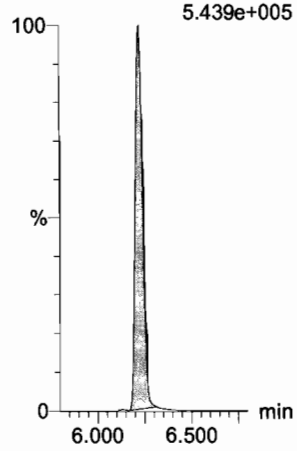


d5-N-ETFOSA



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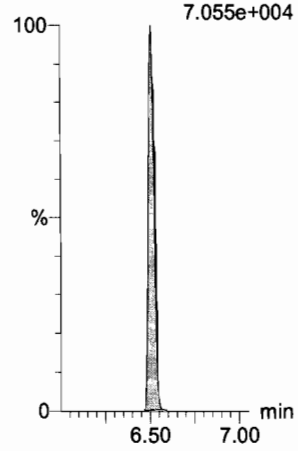

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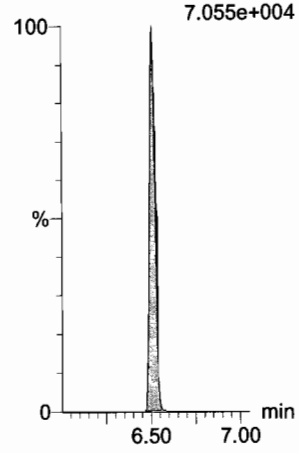
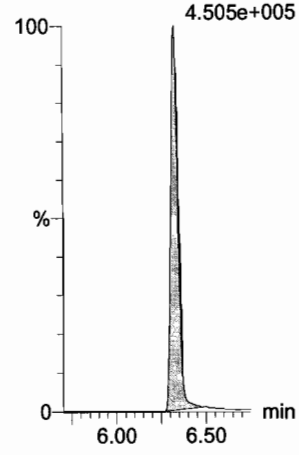


d7-N-MeFOSE



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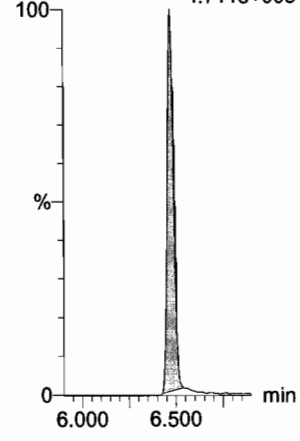
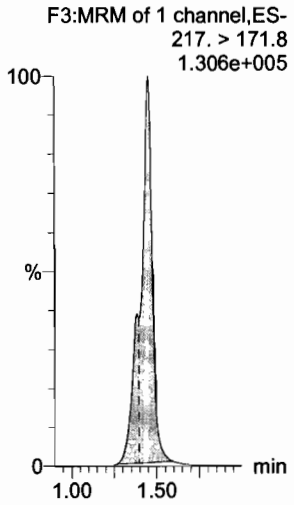


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_5, Date: 05-Feb-2018, Time: 12:38:58, ID: ST180205M1-4 PFC CS1 18A3010, Description: PFC CS1 18A3010

13C4-PFBA



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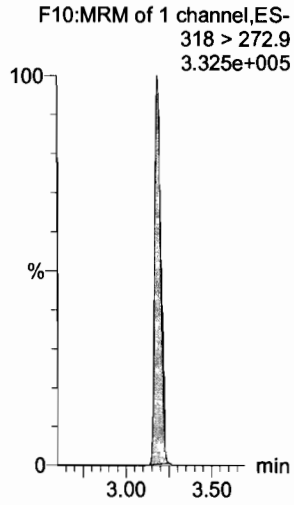
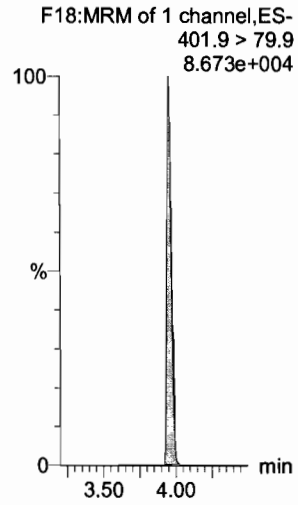


13C3-PFHxS



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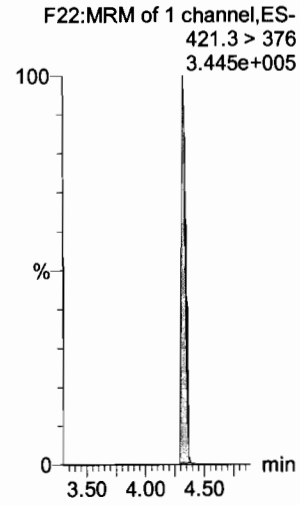
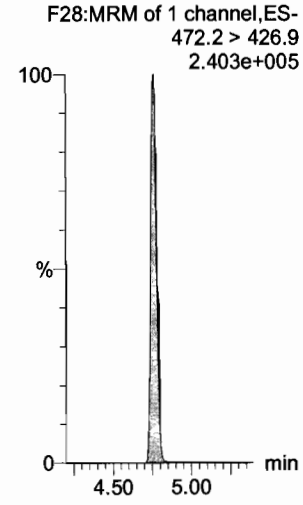
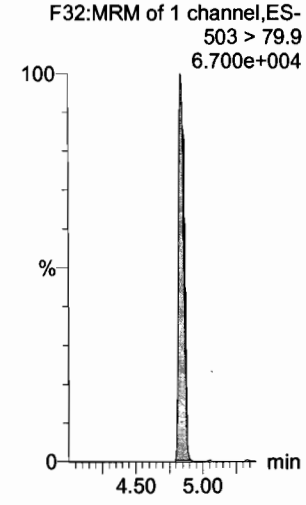


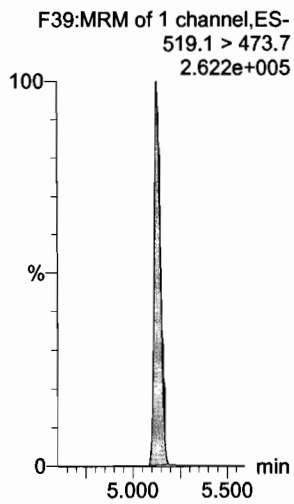
13C9-PFNA



13C4-PFOS



13C6-PFDA



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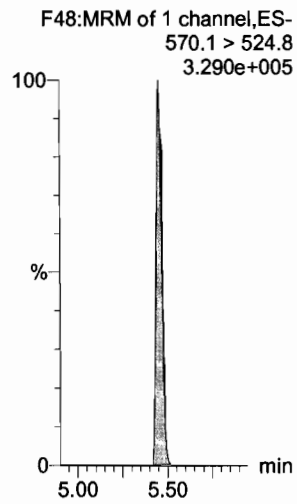
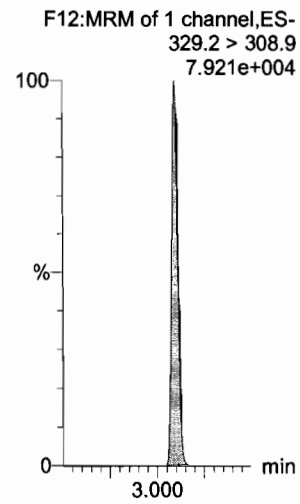


13C2-4:2 FTS

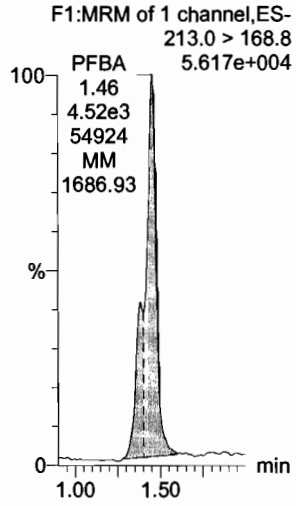


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_6, Date: 05-Feb-2018, Time: 12:50:27, ID: ST180205M1-5 PFC CS2 18A3011, Description: PFC CS2 18A3011

PFBA



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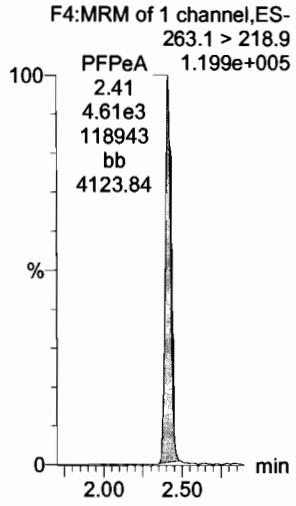
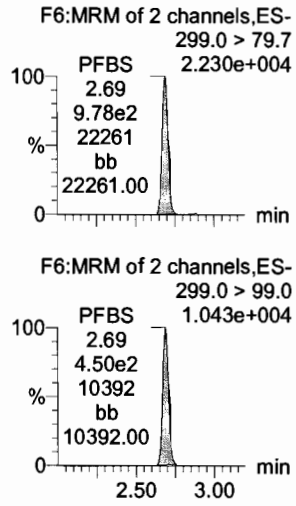
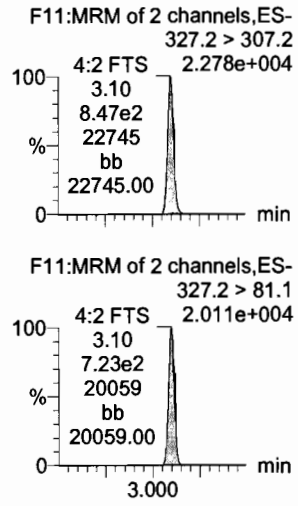


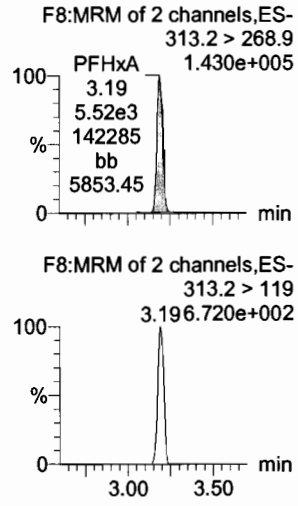
PFBS



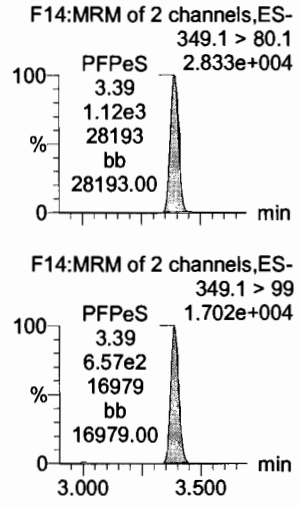
4:2 FTS



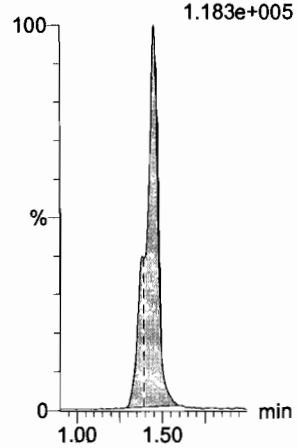
PFHxA



PFPeS



13C3-PFBA



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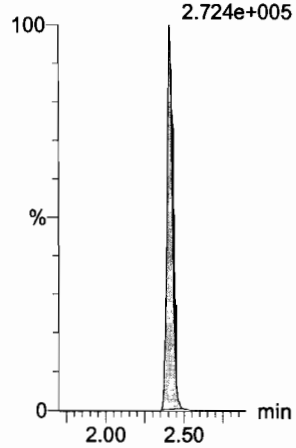
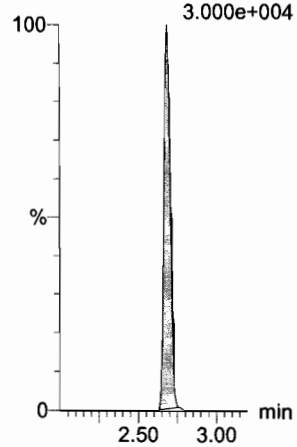


13C3-PFBS



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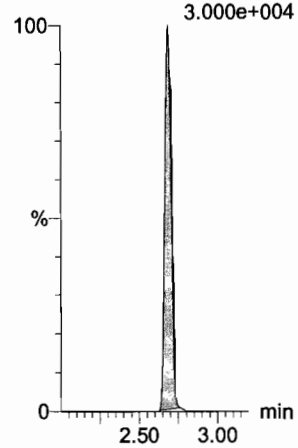
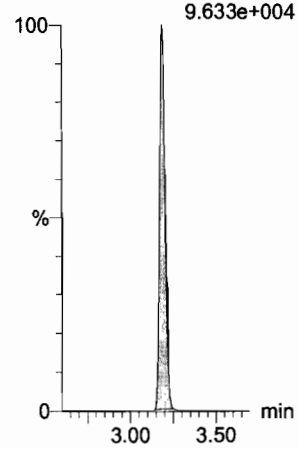
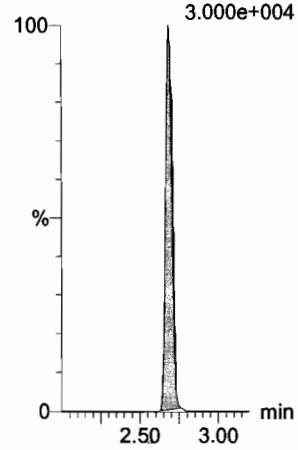


13C2-PFHxA



13C3-PFBS

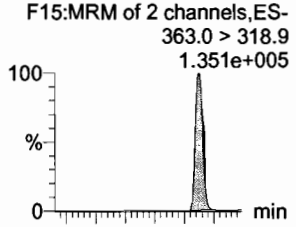


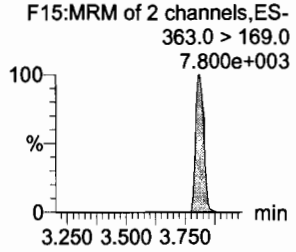
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

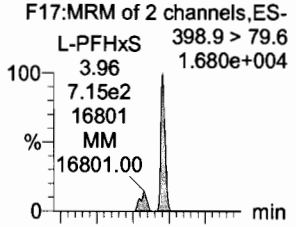
Name: 180205M1_6, Date: 05-Feb-2018, Time: 12:50:27, ID: ST180205M1-5 PFC CS2 18A3011, Description: PFC CS2 18A3011

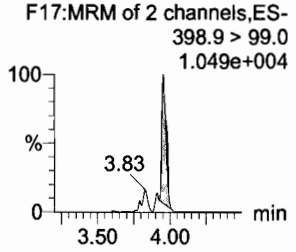
PFHpA



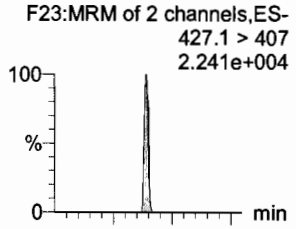


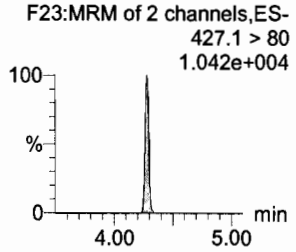
L-PFHxS



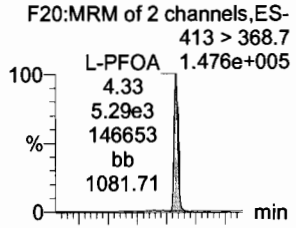


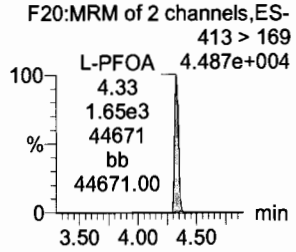
6:2 FTS



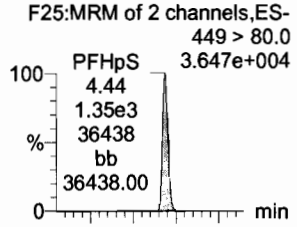


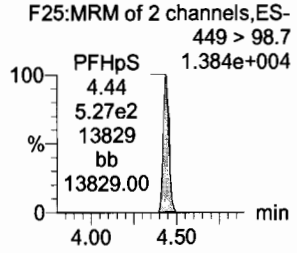
L-PFOA





PFHpS





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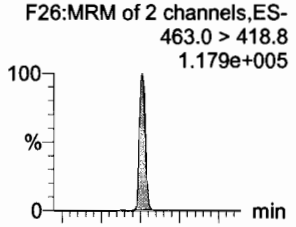
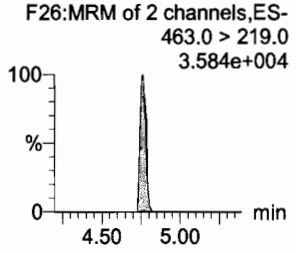
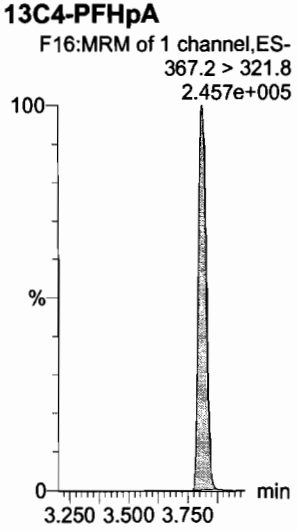
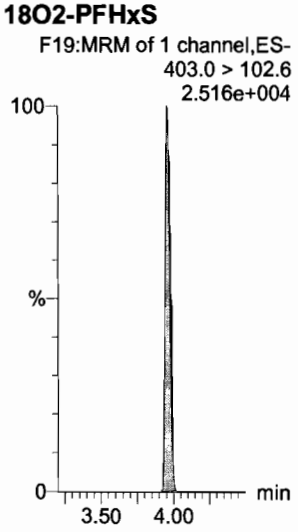




13C4-PFHpA



18O2-PFHxS



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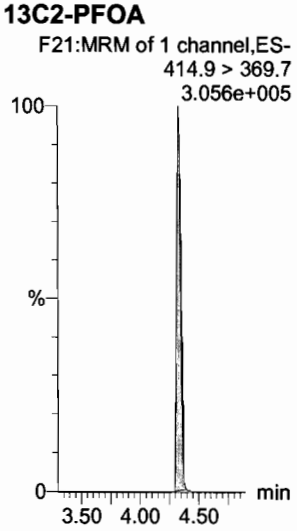

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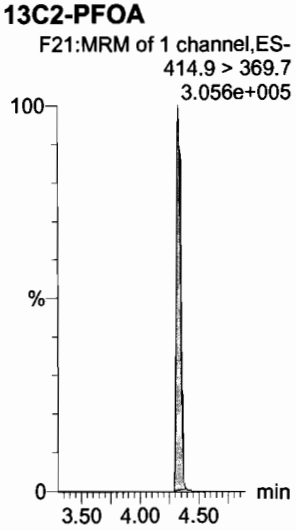

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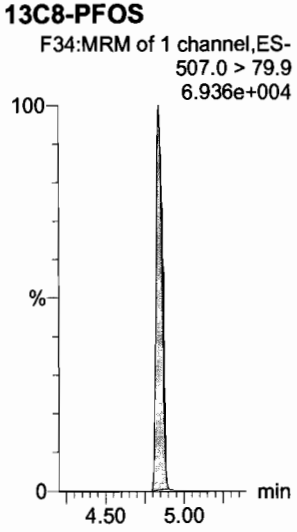

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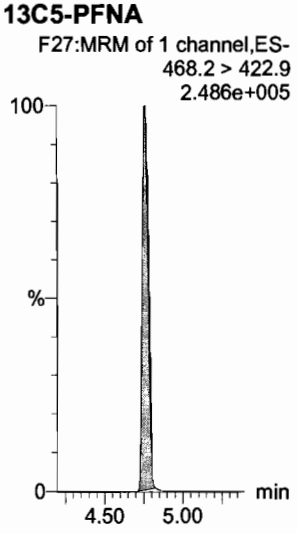

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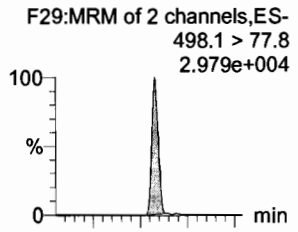
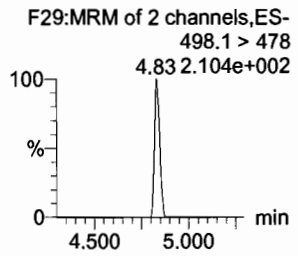
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_6, Date: 05-Feb-2018, Time: 12:50:27, ID: ST180205M1-5 PFC CS2 18A3011, Description: PFC CS2 18A3011

PFOSA





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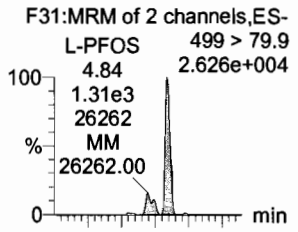

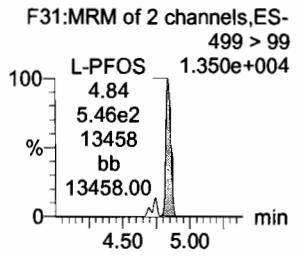

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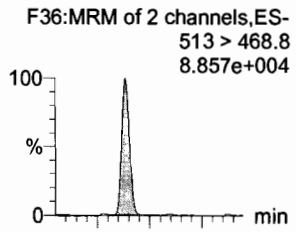

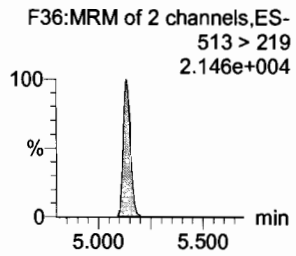

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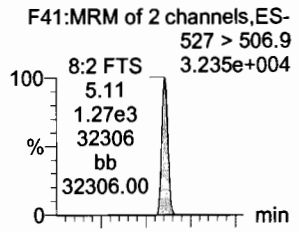

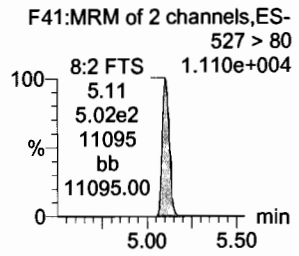

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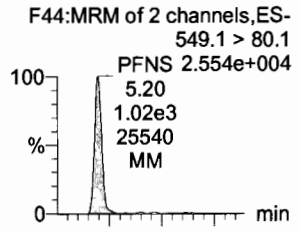

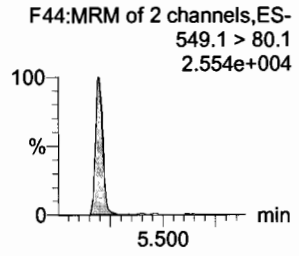

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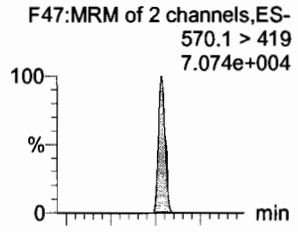

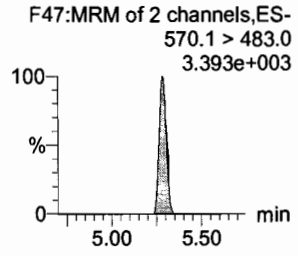

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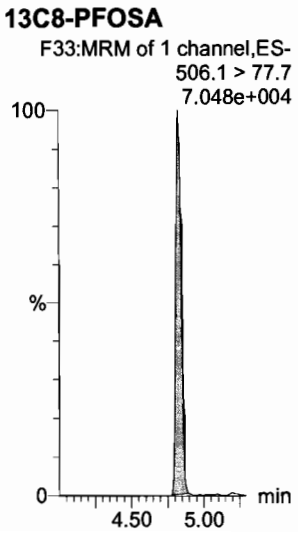

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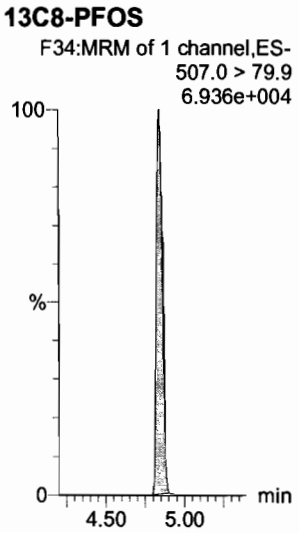

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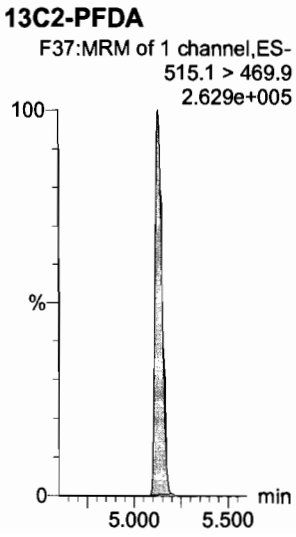

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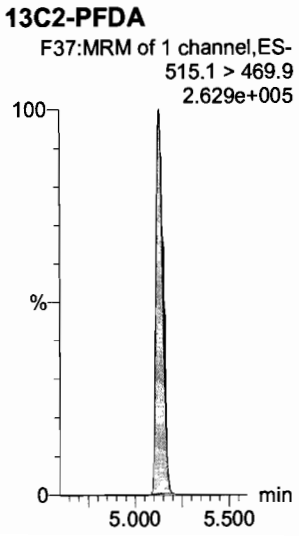

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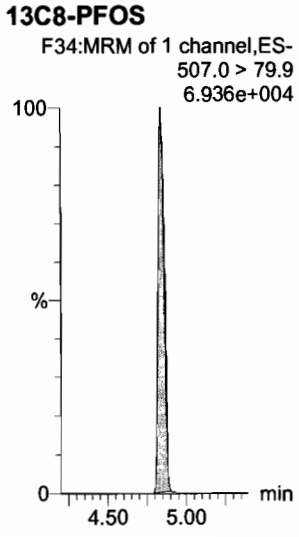
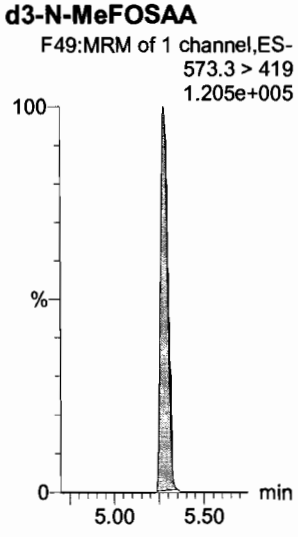


d3-N-MeFOSAA



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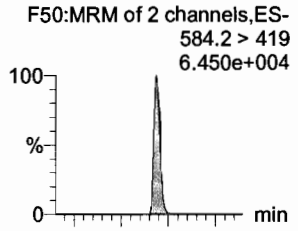

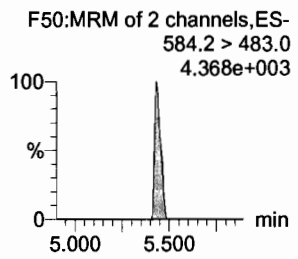

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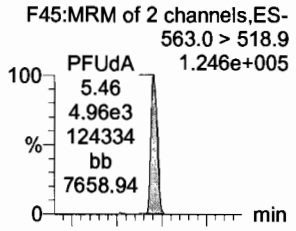

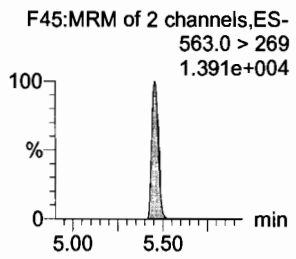

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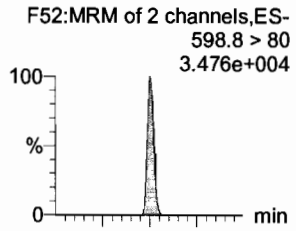

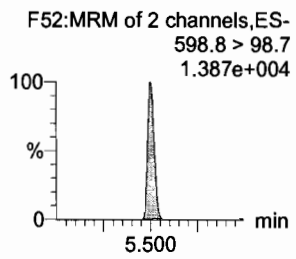

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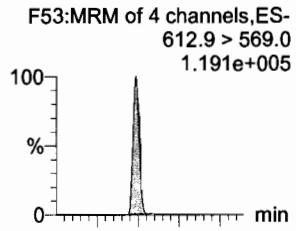

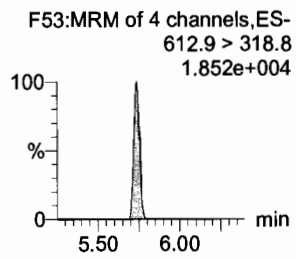

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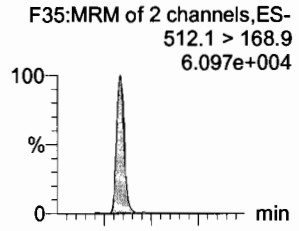

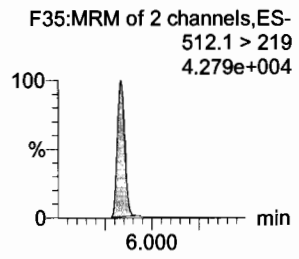

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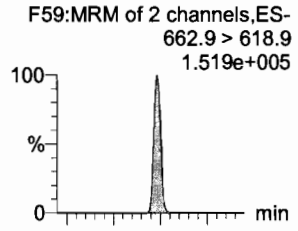
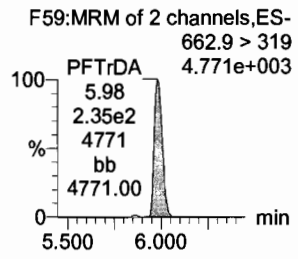
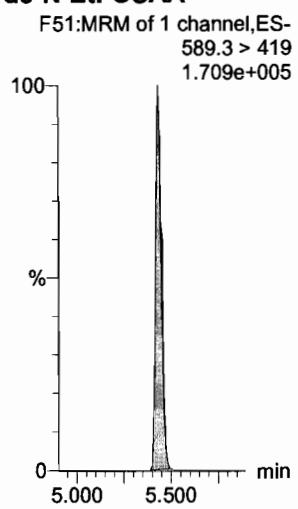




d5-N-EtFOSAA



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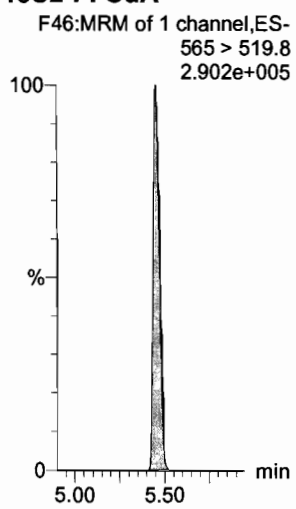

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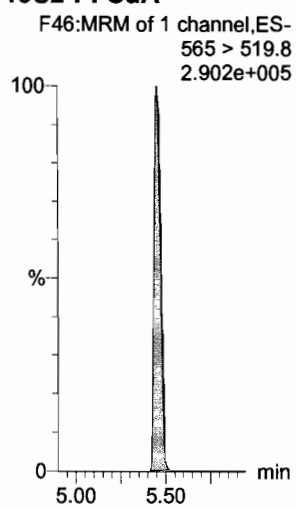

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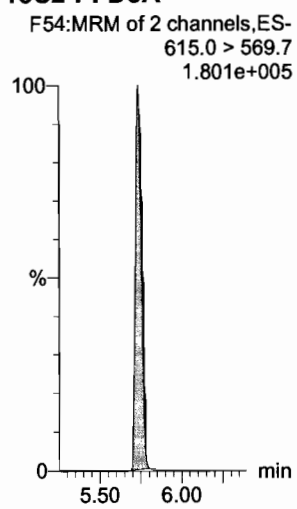

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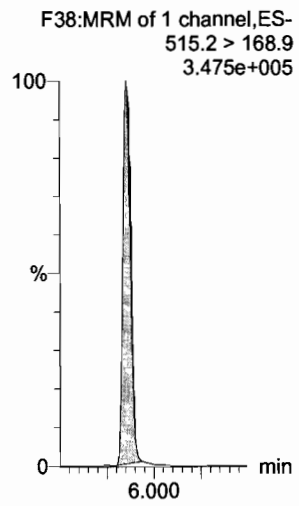

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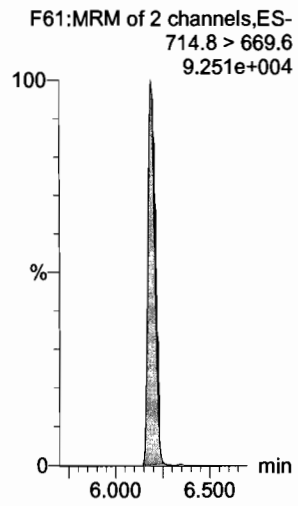

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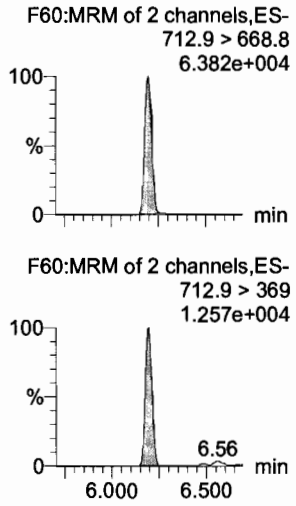

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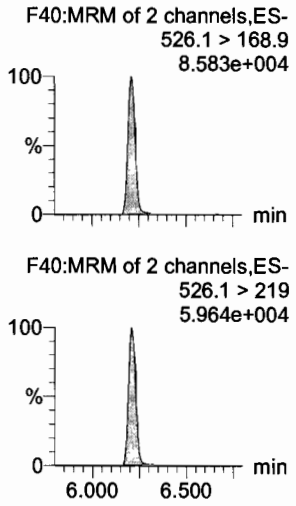

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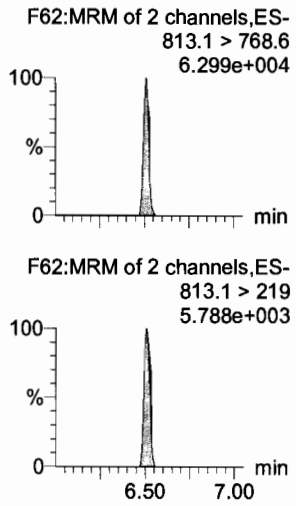

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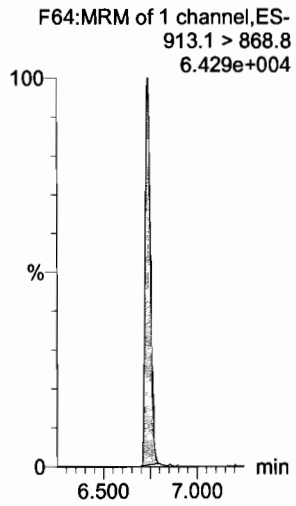
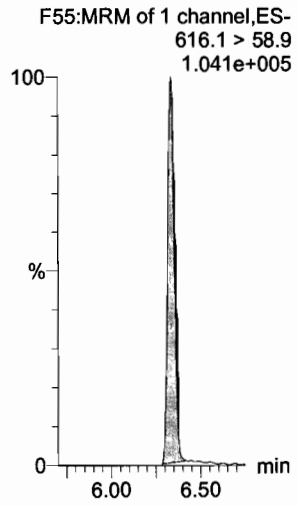


N-MeFOSE



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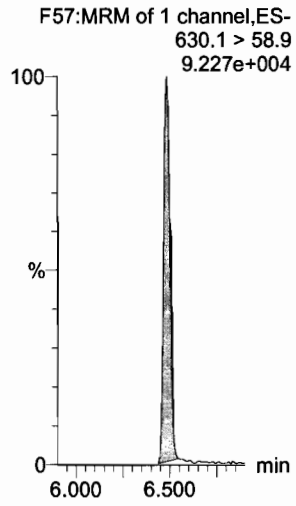

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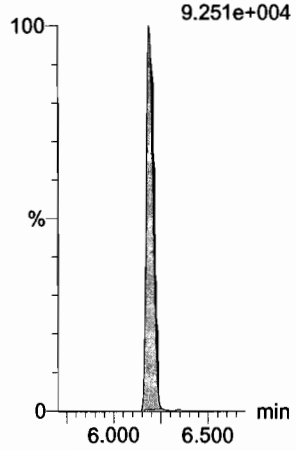
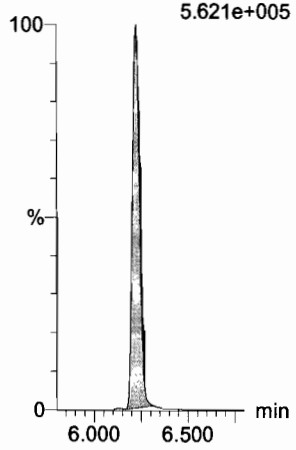


d5-N-ETFOSA



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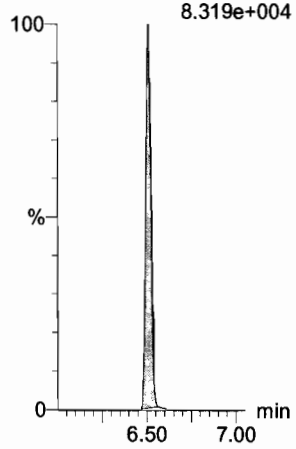

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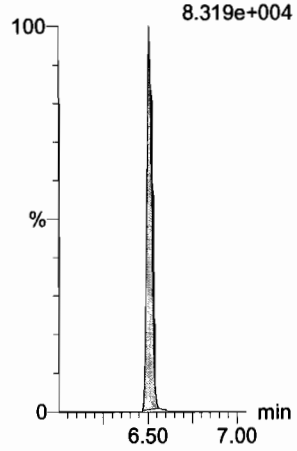
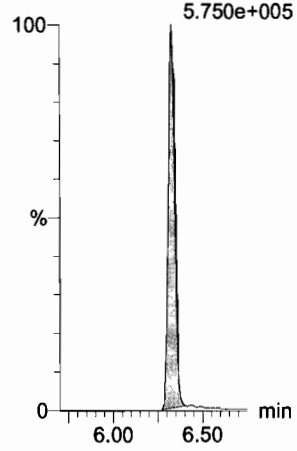
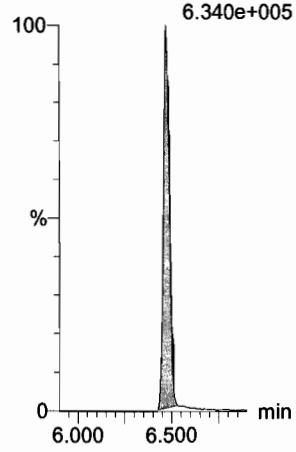


d7-N-MeFOSE



d9-N-EtFOSE

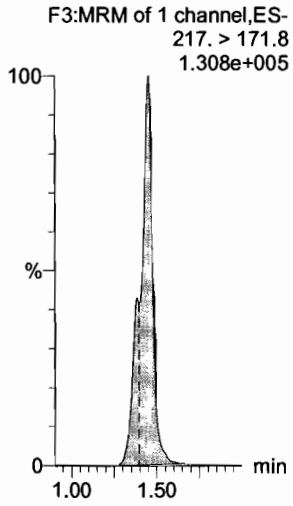


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

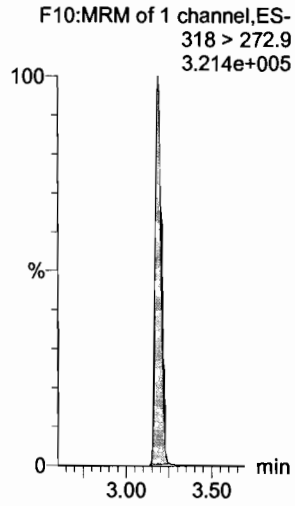
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_6, Date: 05-Feb-2018, Time: 12:50:27, ID: ST180205M1-5 PFC CS2 18A3011, Description: PFC CS2 18A3011

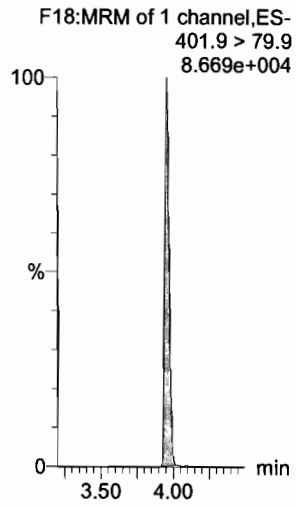
13C4-PFBA



13C5-PFHxA



13C3-PFHxS



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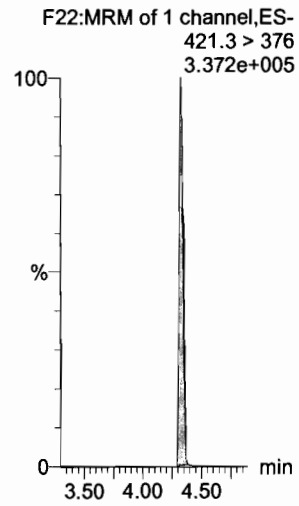

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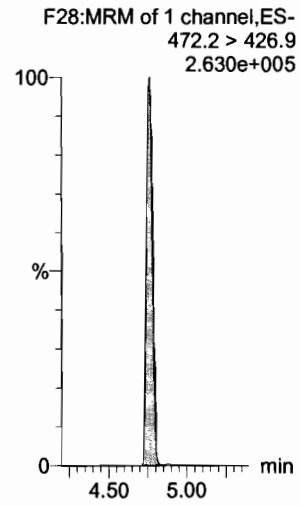

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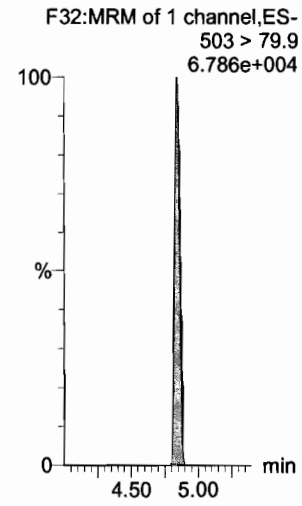

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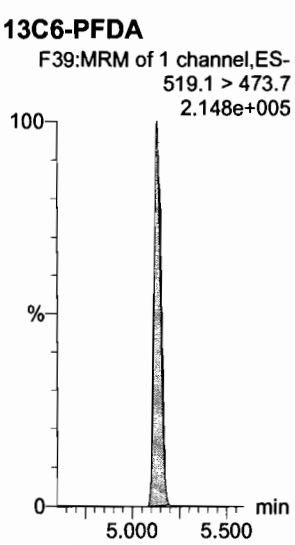
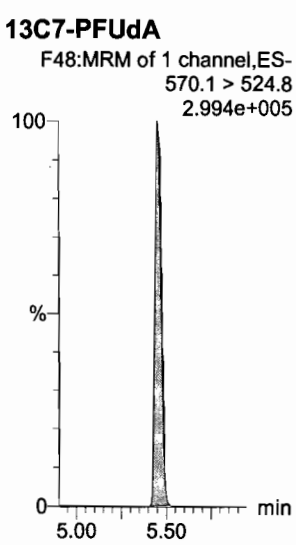
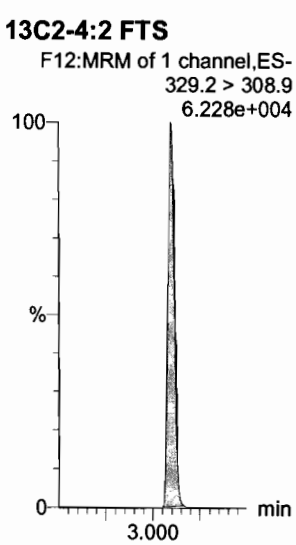


13C7-PFUdA



13C2-4:2 FTS

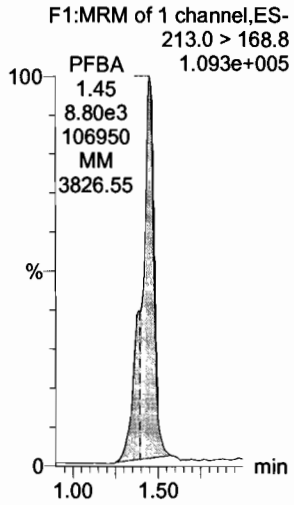


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFBA



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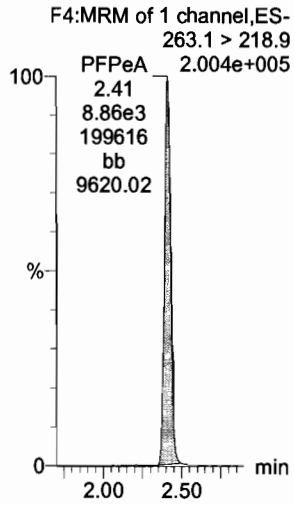

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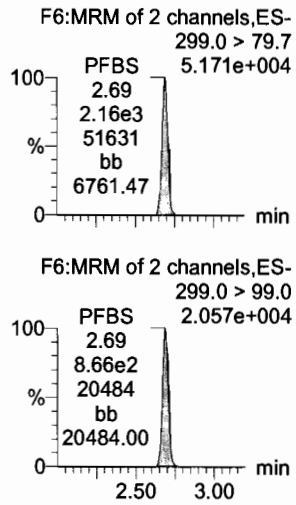
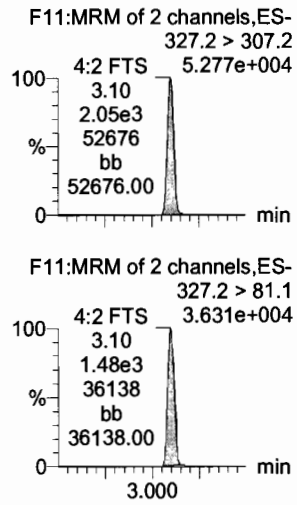
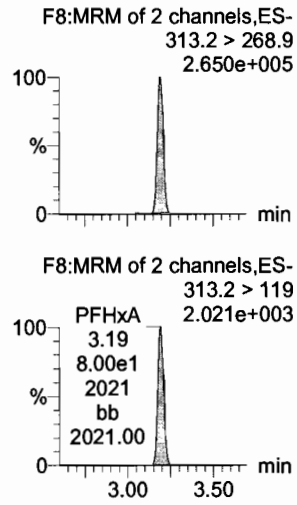


4:2 FTS



PFHxA



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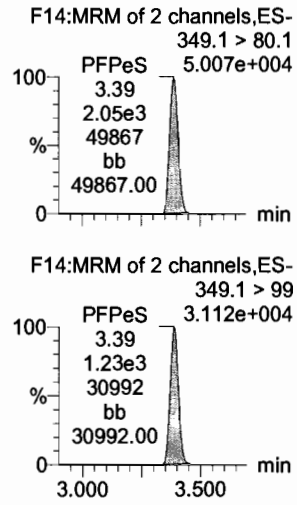

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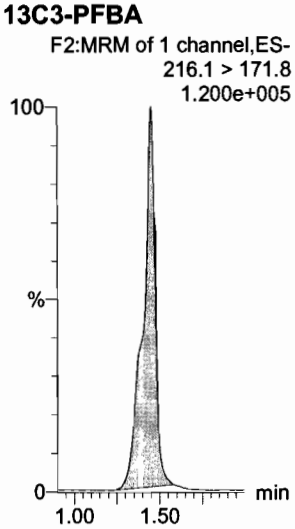

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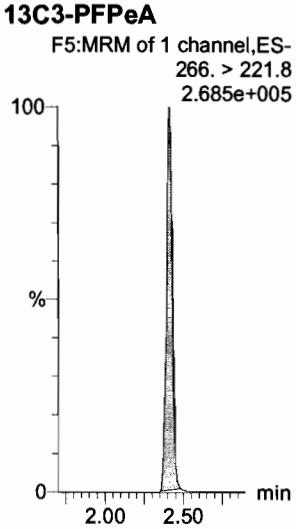

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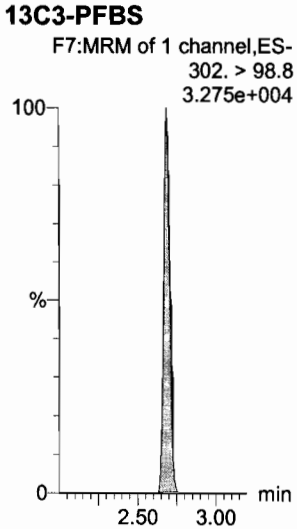

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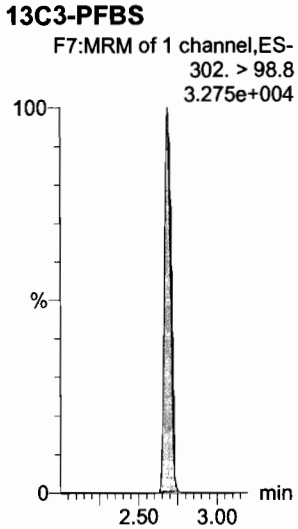

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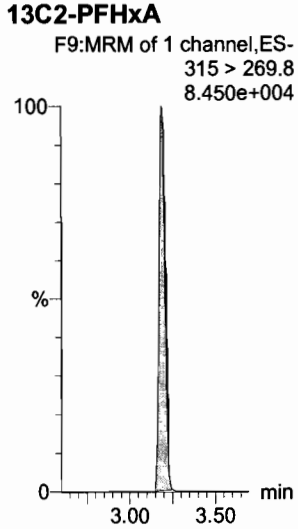

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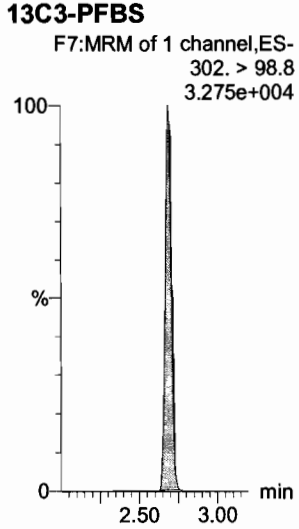

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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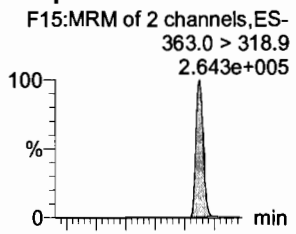
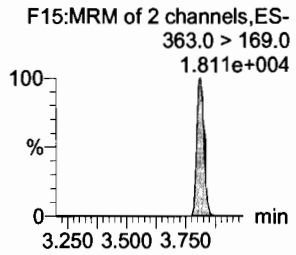
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

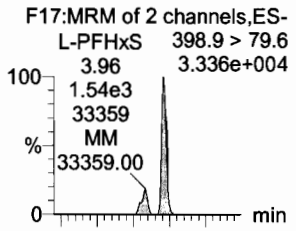
Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

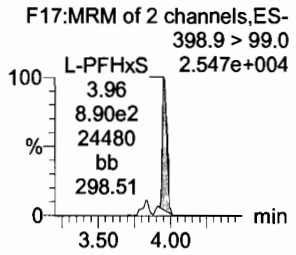
PFHpA





L-PFHxS





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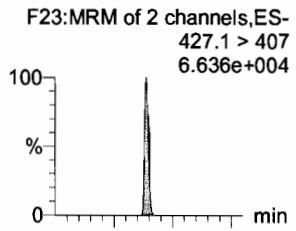
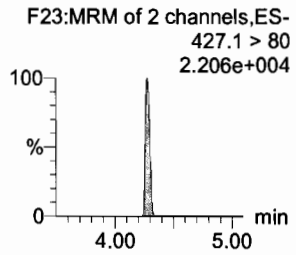
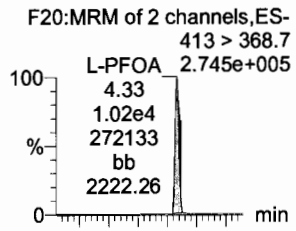
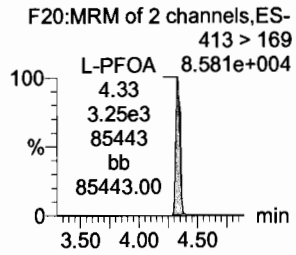


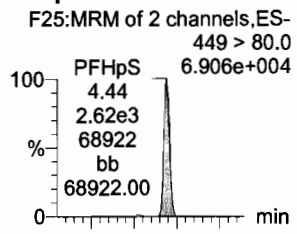


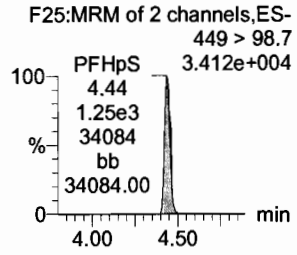
L-PFOA





PFHpS





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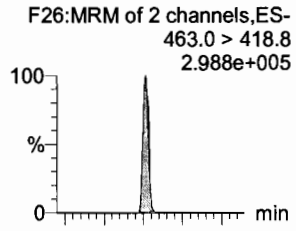

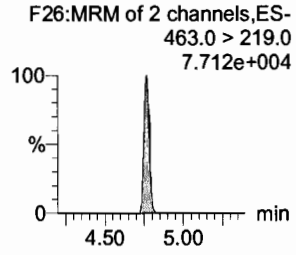

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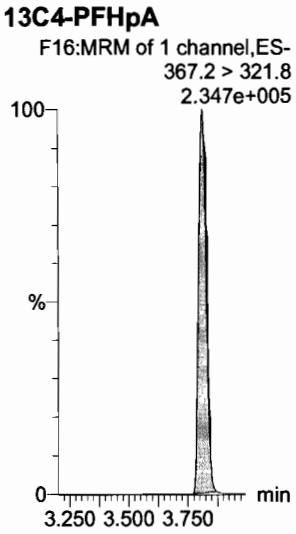
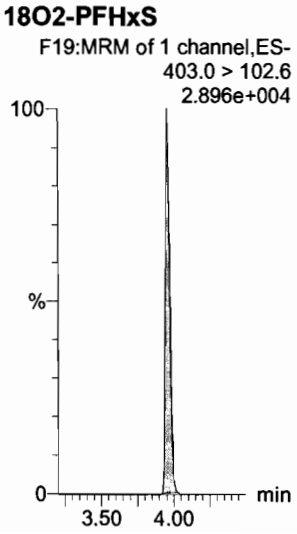


18O2-PFHxS



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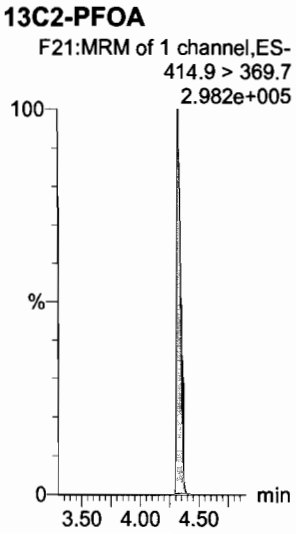

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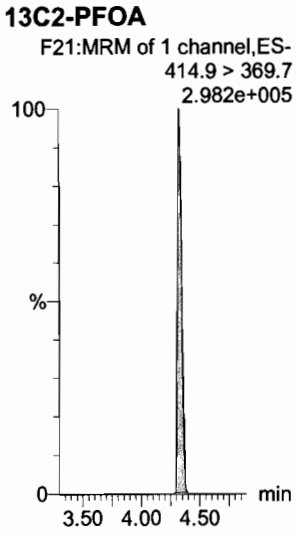
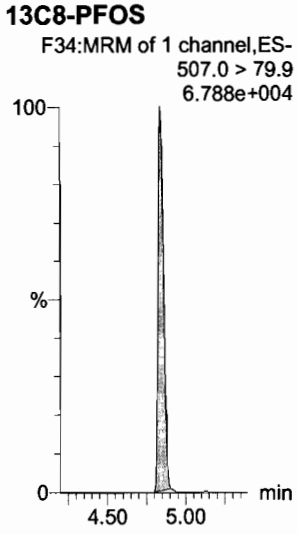
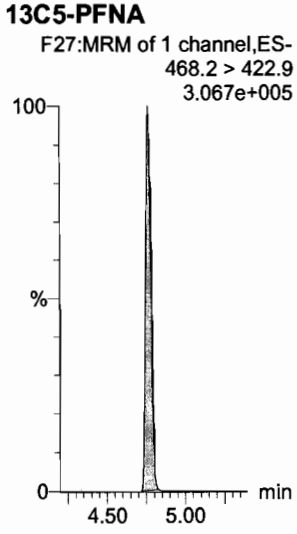


13C8-PFOS



13C5-PFNA

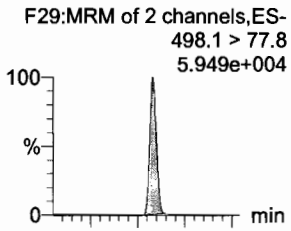


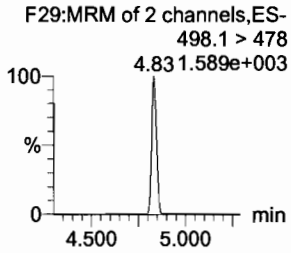
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

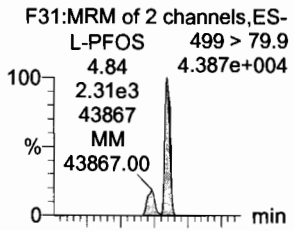
Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

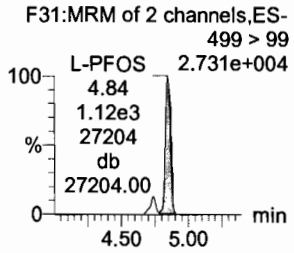
PFOSA





L-PFOS





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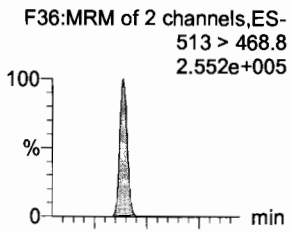
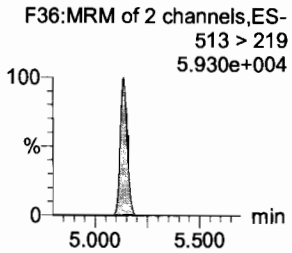
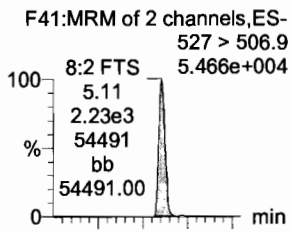
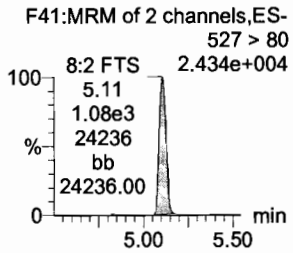




8:2 FTS





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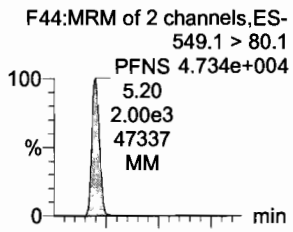

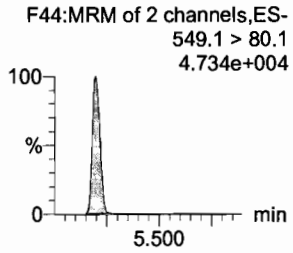

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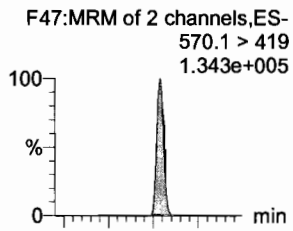
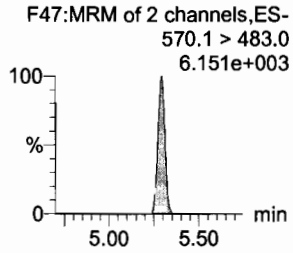
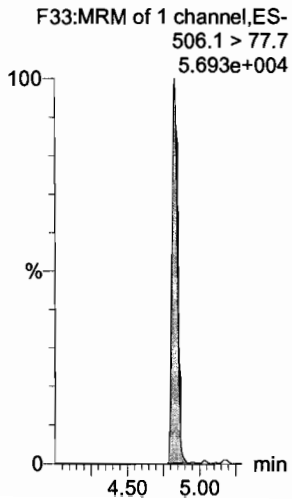




13C8-PFOSA



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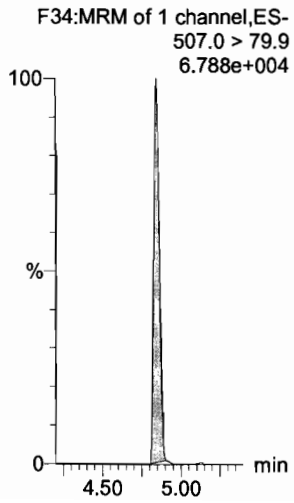
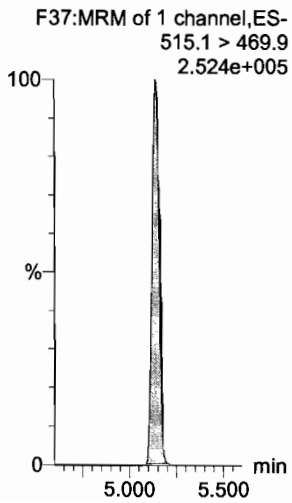


13C2-PFDA



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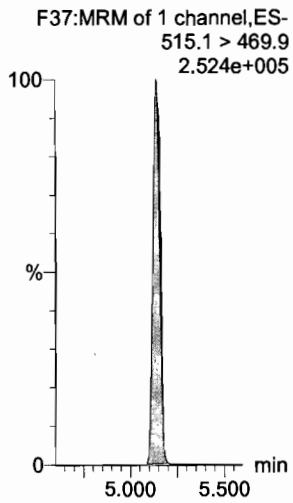

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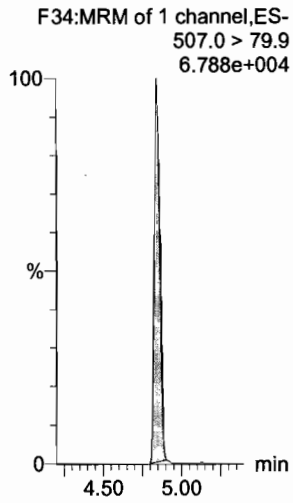
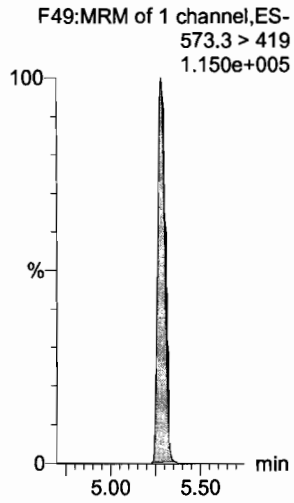


d3-N-MeFOSAA



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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

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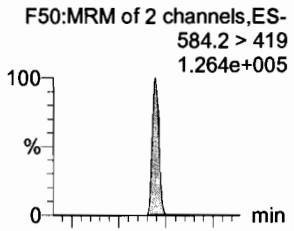

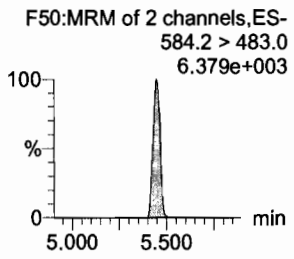

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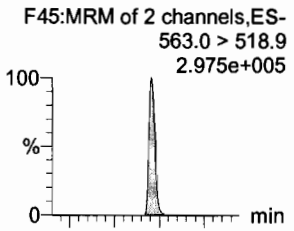

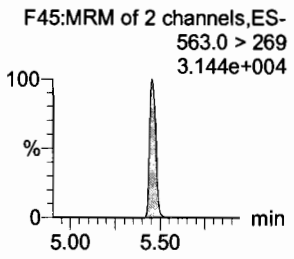

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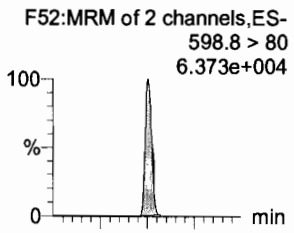

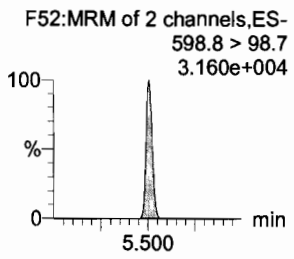

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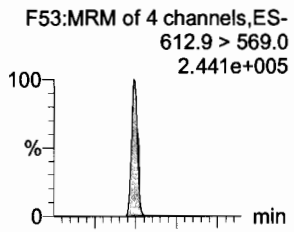

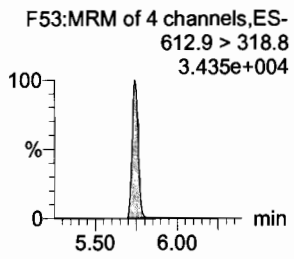

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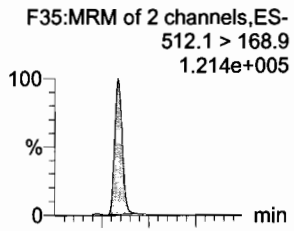

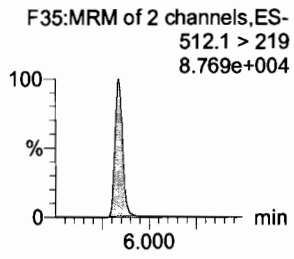

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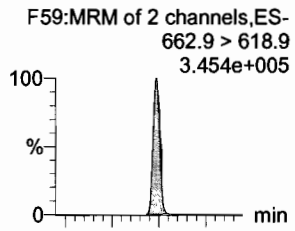
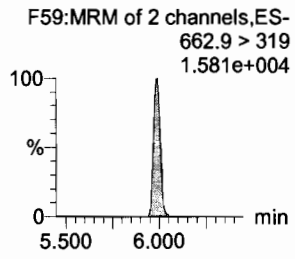
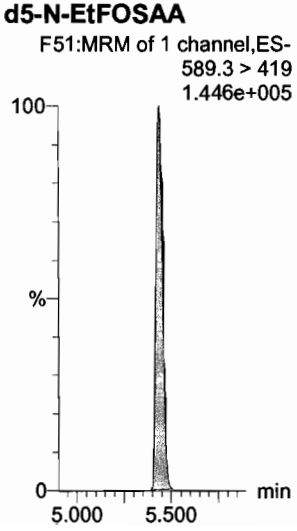
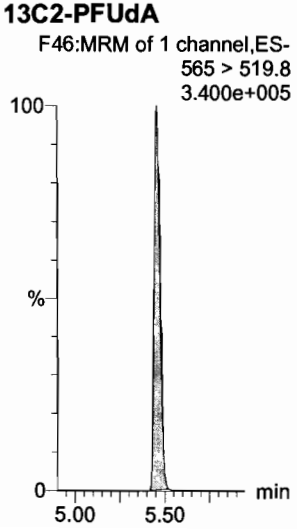




d5-N-EtFOSAA



13C2-PFUdA



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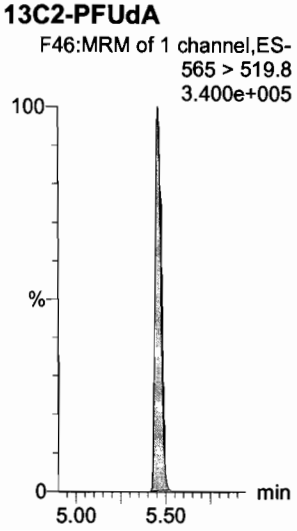
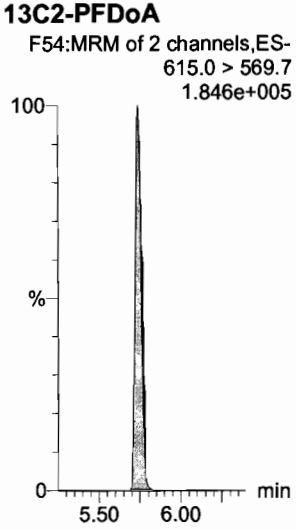


13C2-PFDoA



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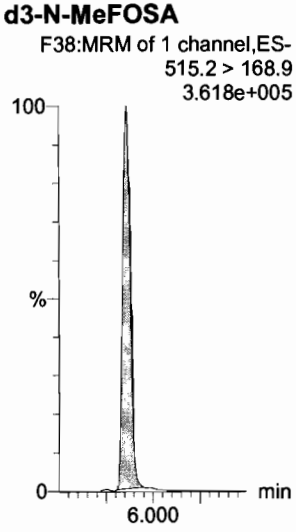

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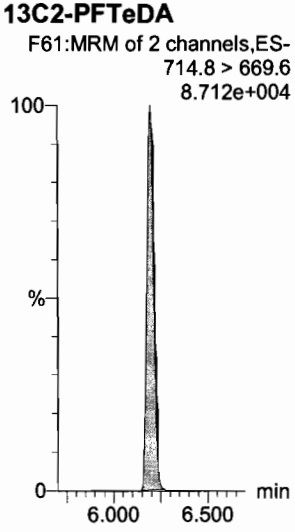

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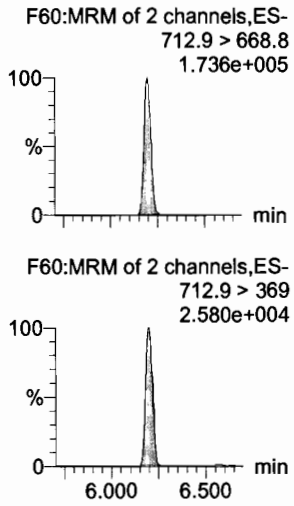
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

PFTeDA



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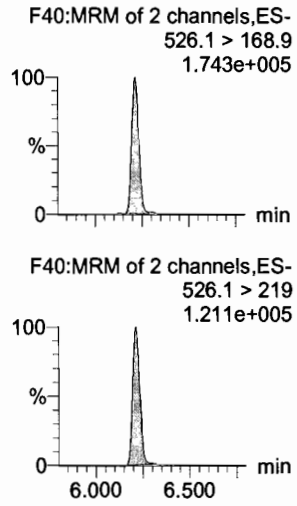
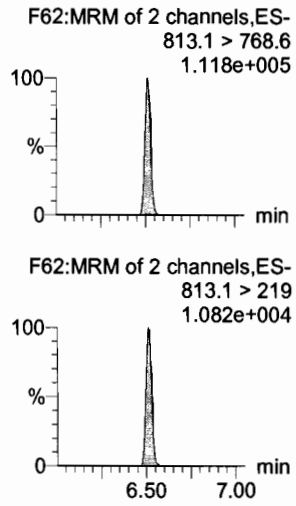
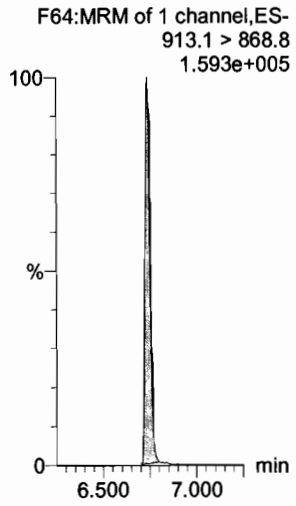


PFHxDA



PFODA



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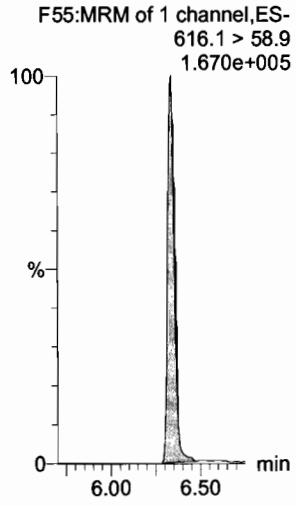

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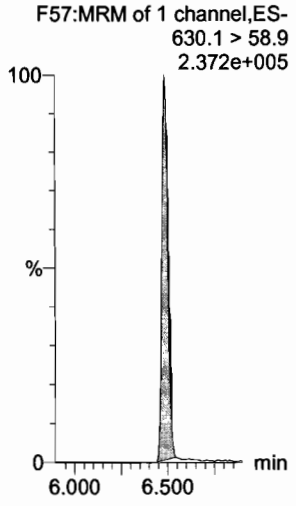

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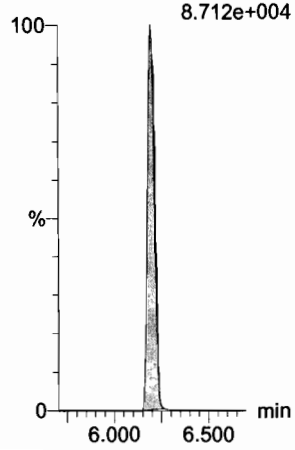
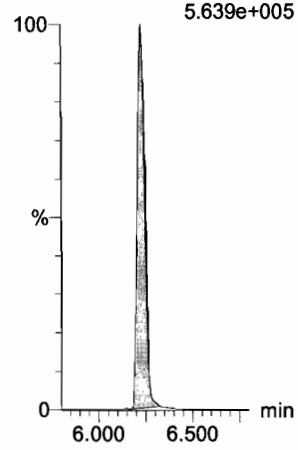


d5-N-ETFOSA



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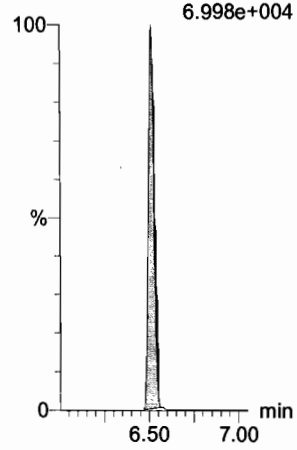
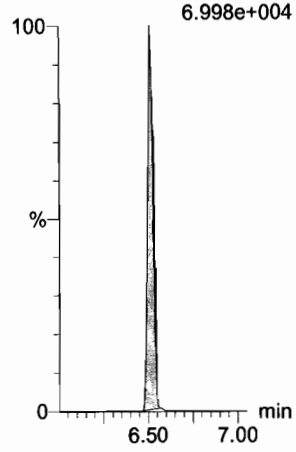
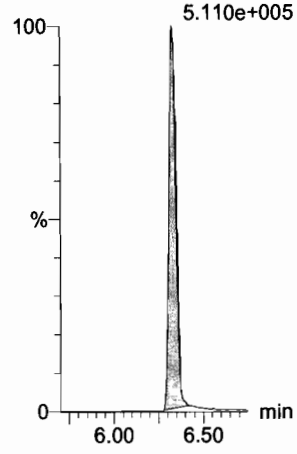


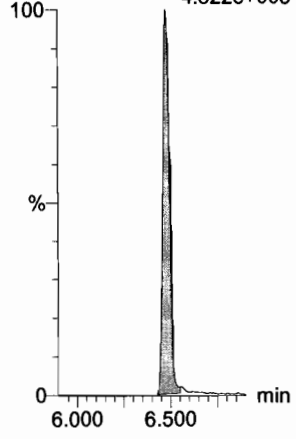
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_7, Date: 05-Feb-2018, Time: 13:01:56, ID: ST180205M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

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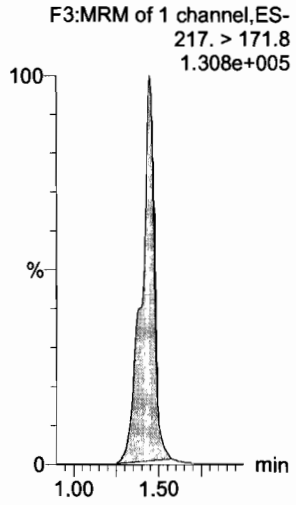

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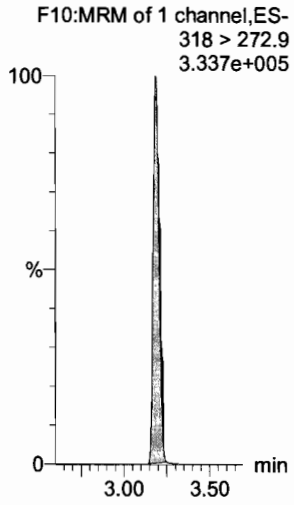
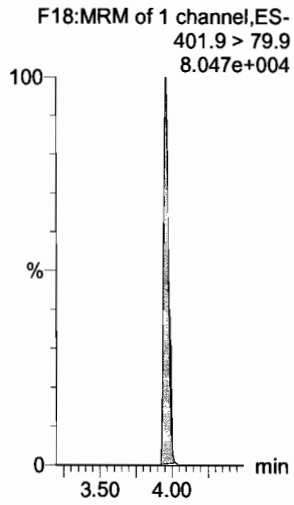


13C3-PFHxS



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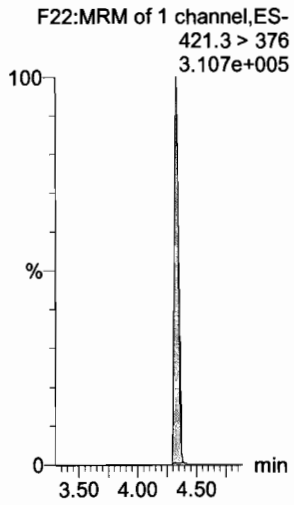

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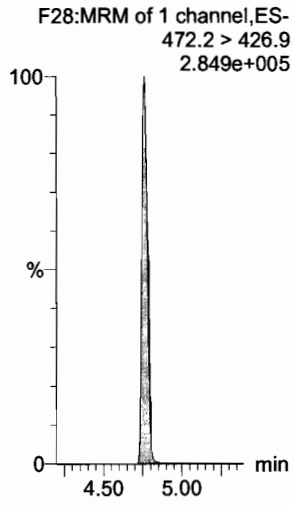
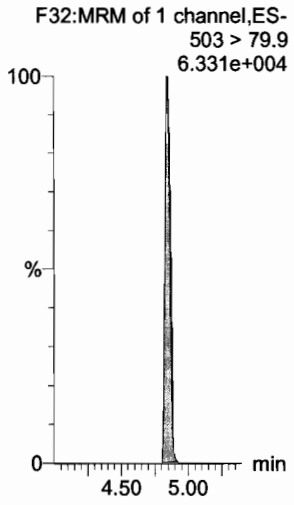


13C4-PFOS



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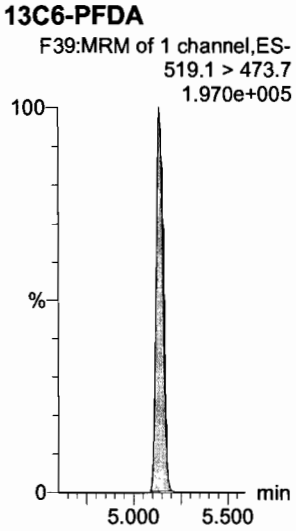
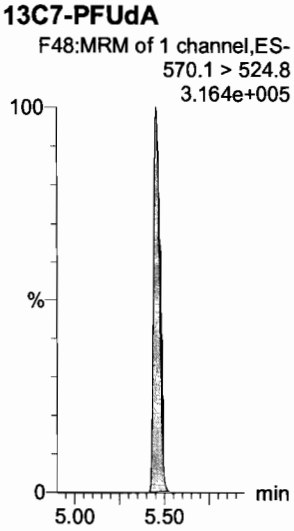
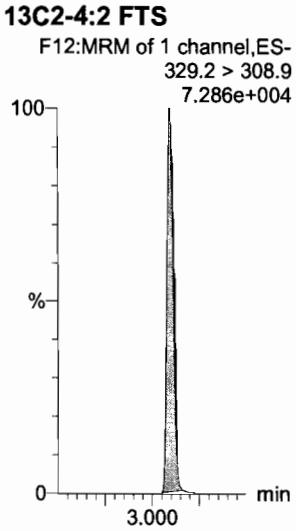


13C7-PFUdA



13C2-4:2 FTS



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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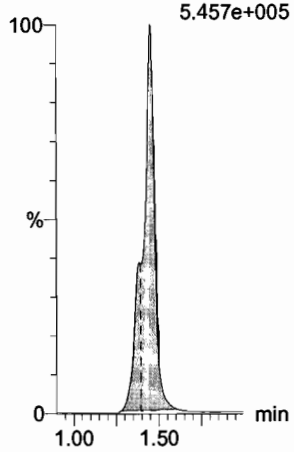
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

PFBA



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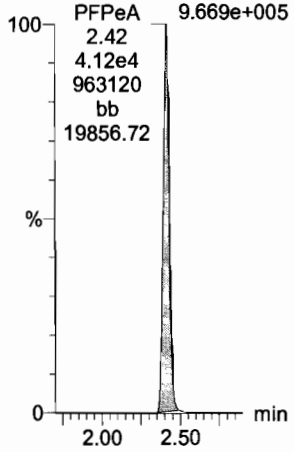

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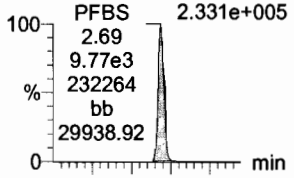
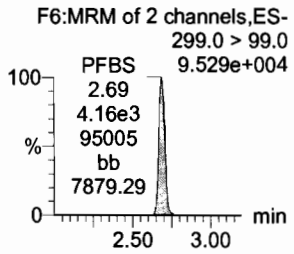
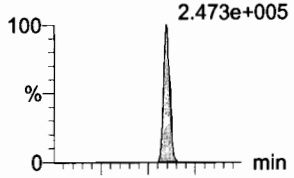
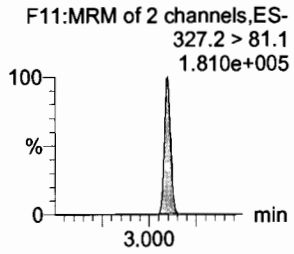




4:2 FTS





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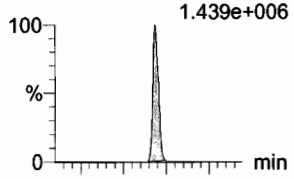

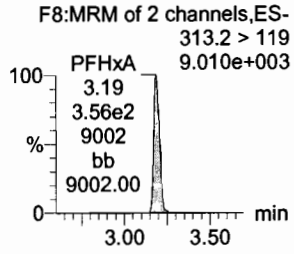

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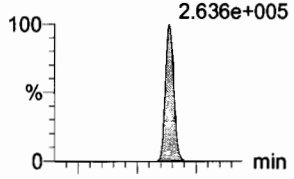

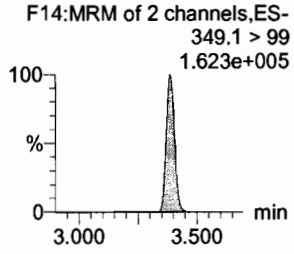

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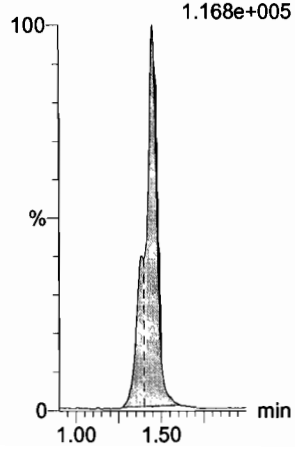

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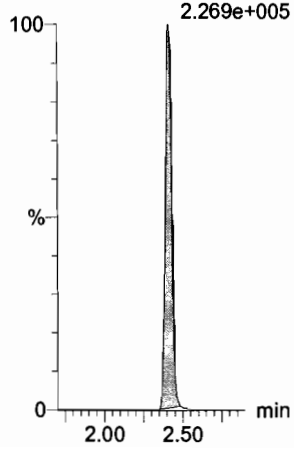

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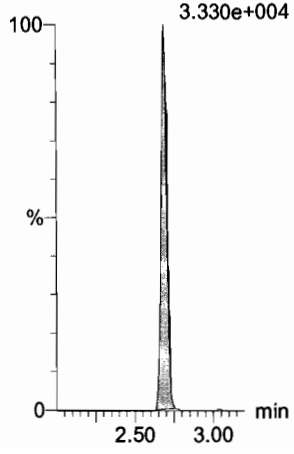

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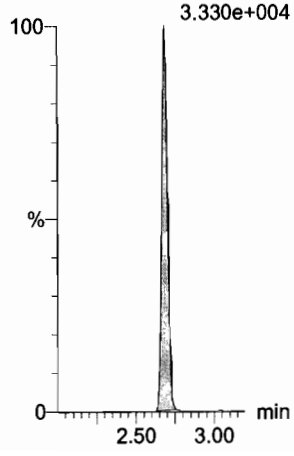

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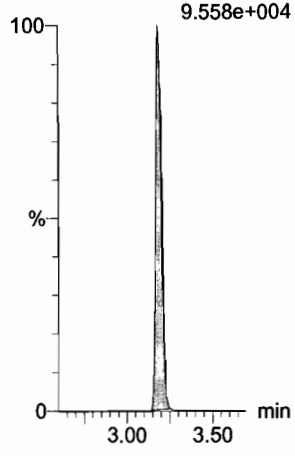

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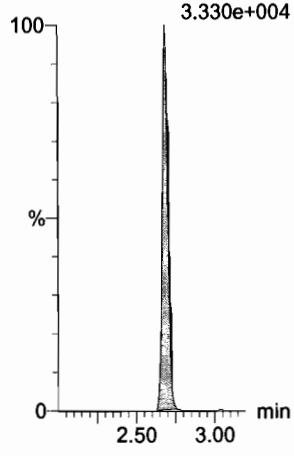

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Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

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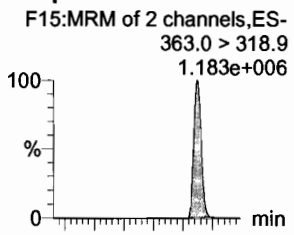

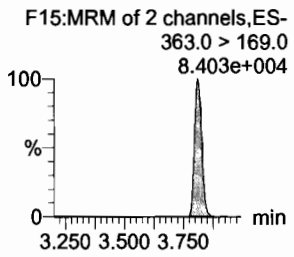

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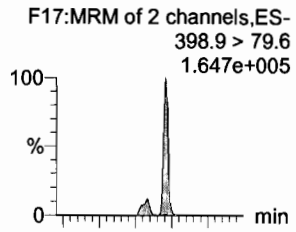
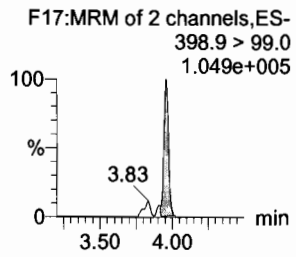
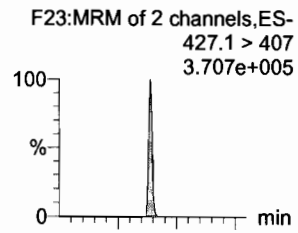
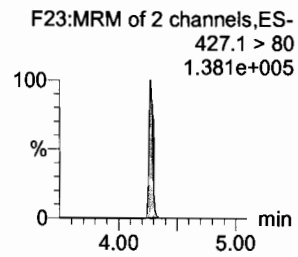




6:2 FTS





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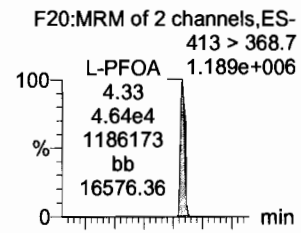

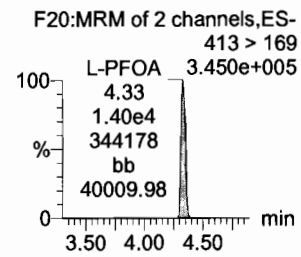

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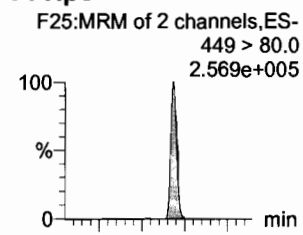

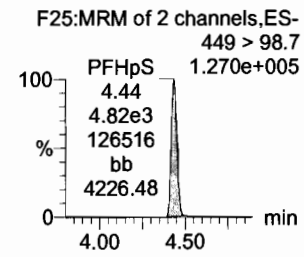

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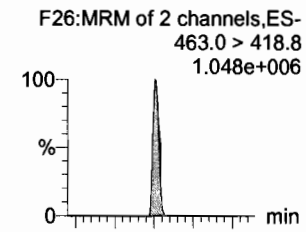

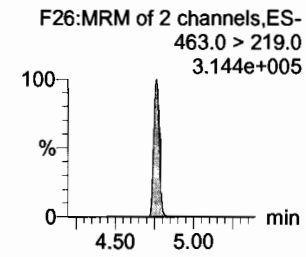

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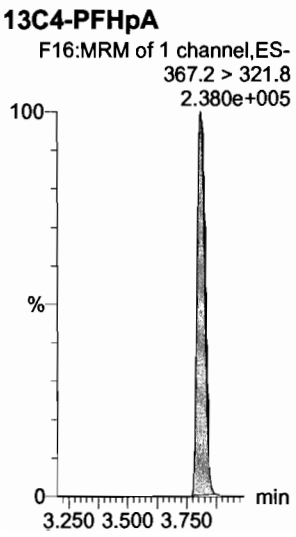

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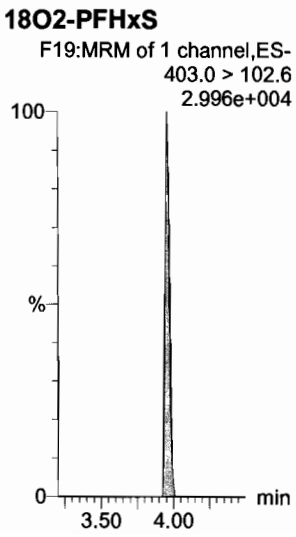

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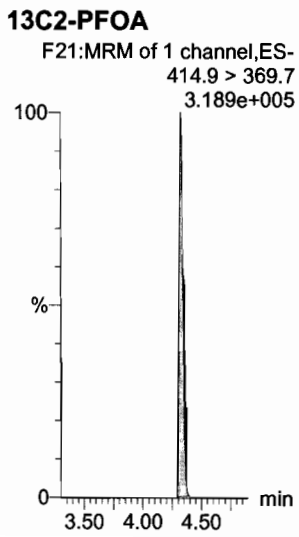

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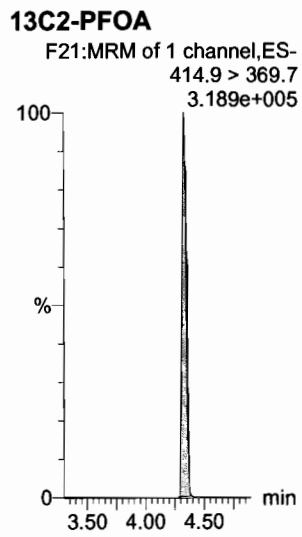

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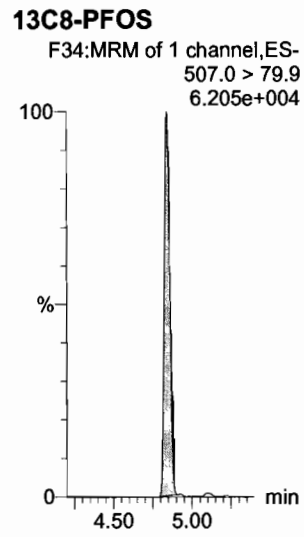

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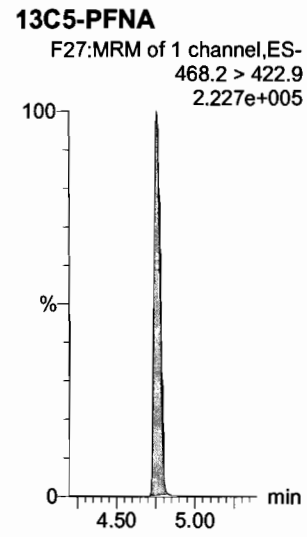

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Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

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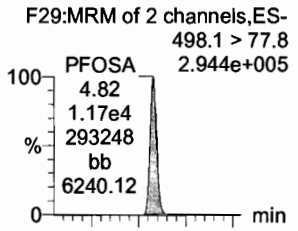

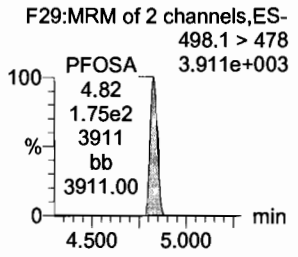

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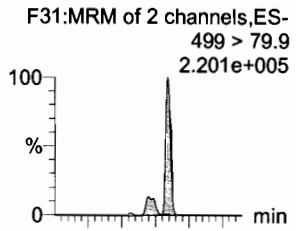

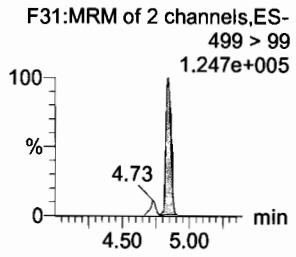

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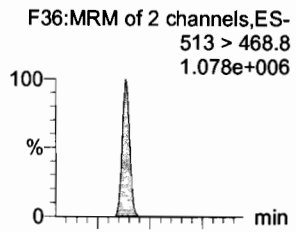
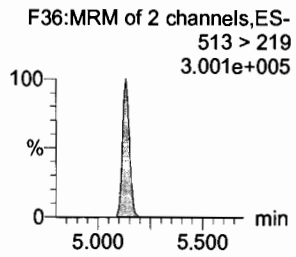
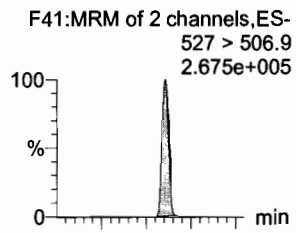
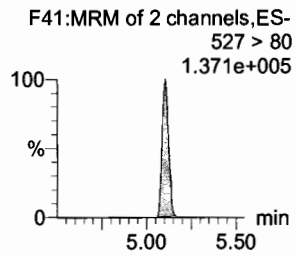




8:2 FTS





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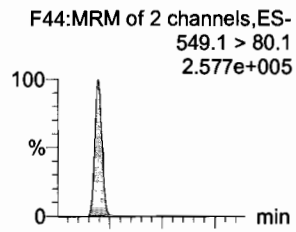

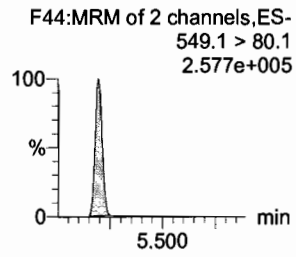

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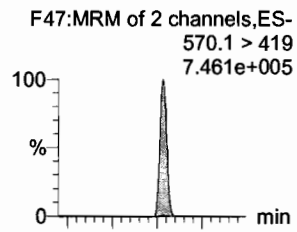
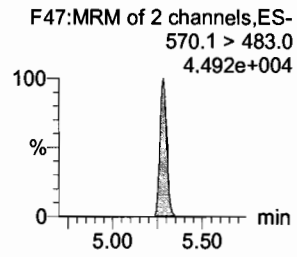
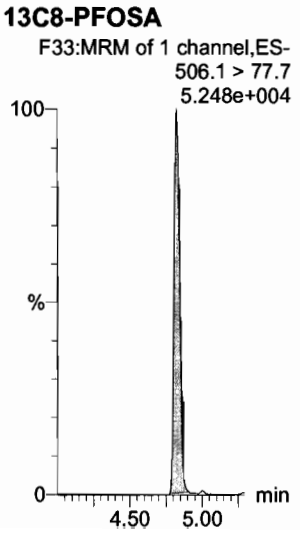




13C8-PFOSA



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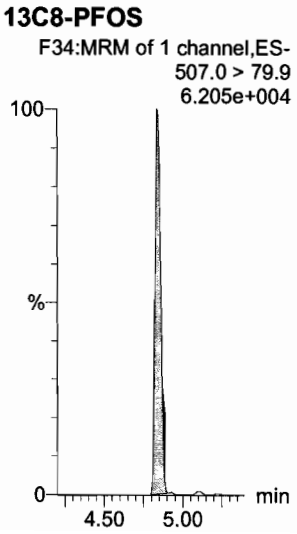

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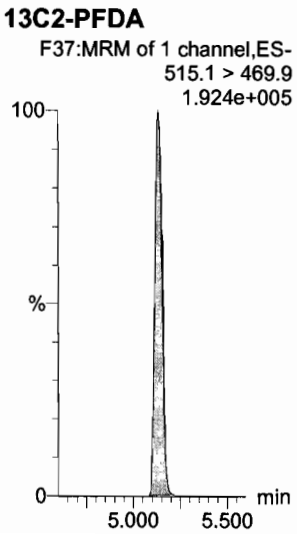

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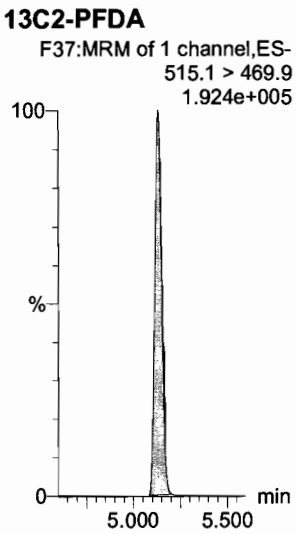

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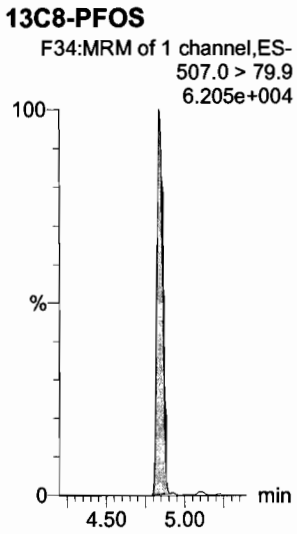
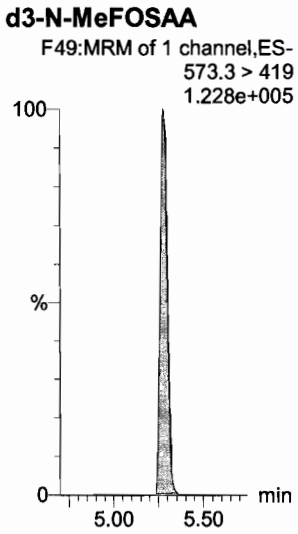


d3-N-MeFOSAA



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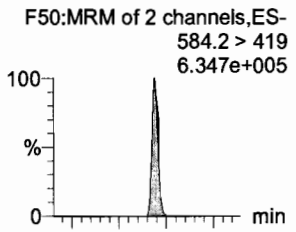
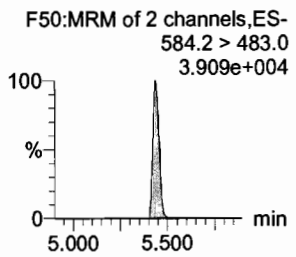
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

N-EtFOSAA





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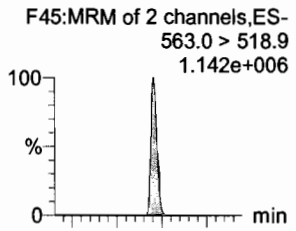

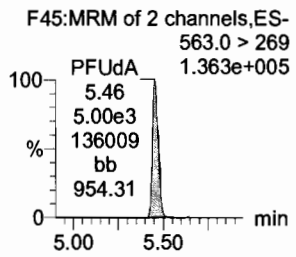

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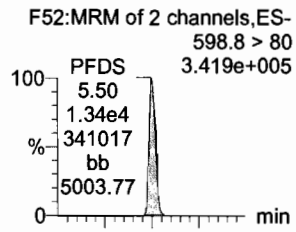

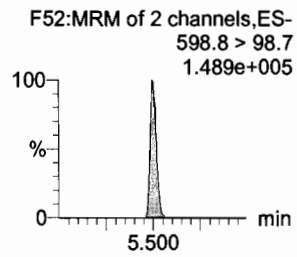

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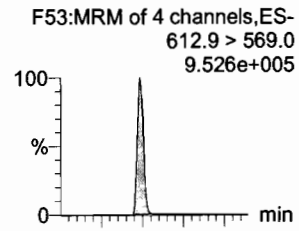
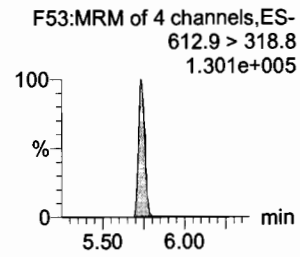
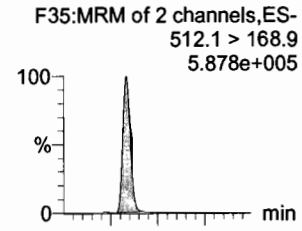
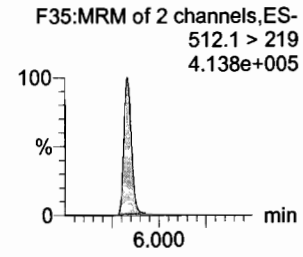


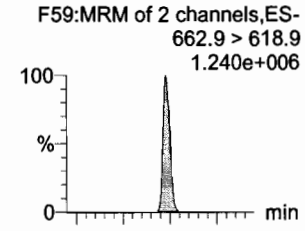


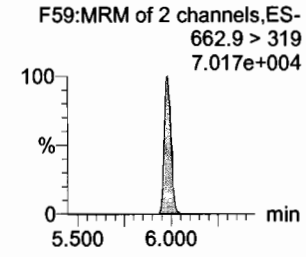
N-MeFOSA



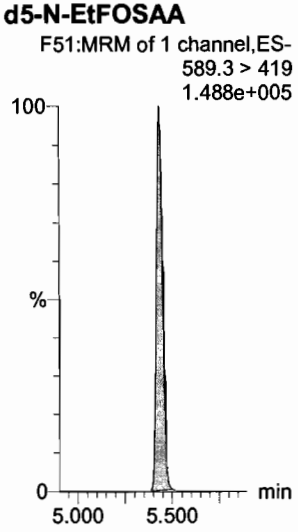


PFTrDA

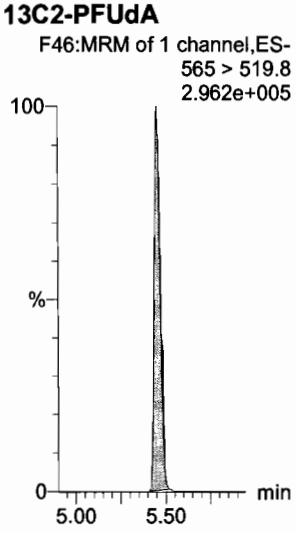




d5-N-EtFOSAA



13C2-PFUdA



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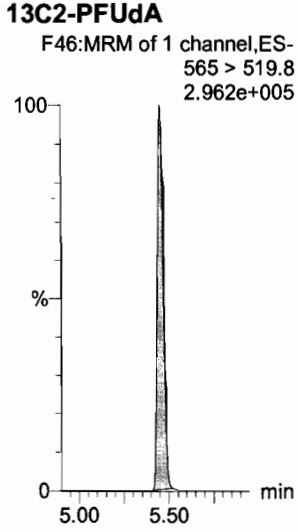
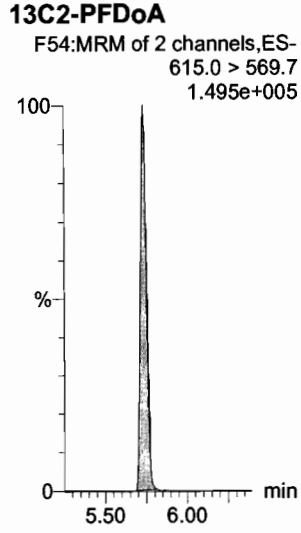
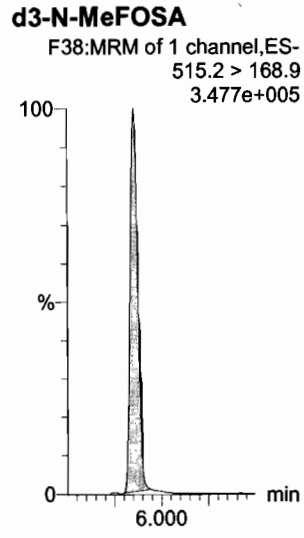


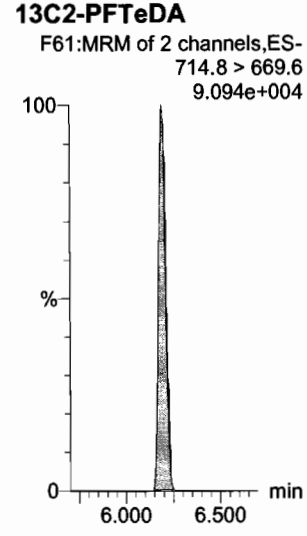
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

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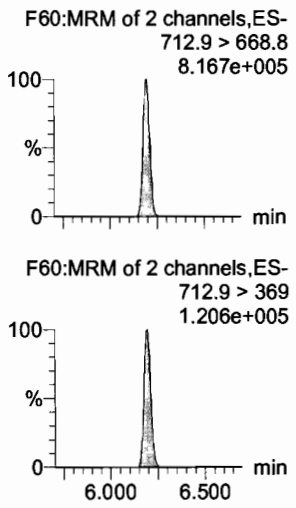

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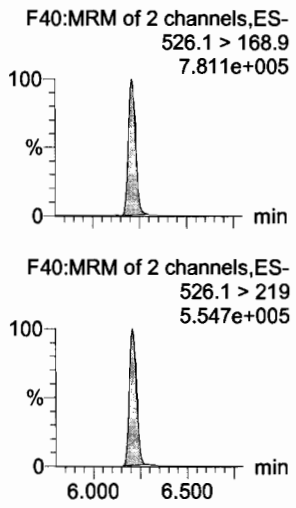

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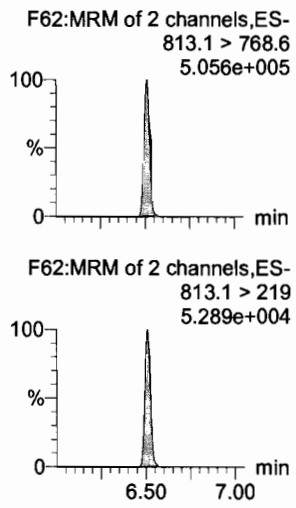

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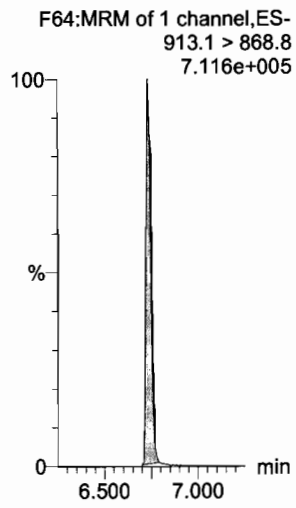
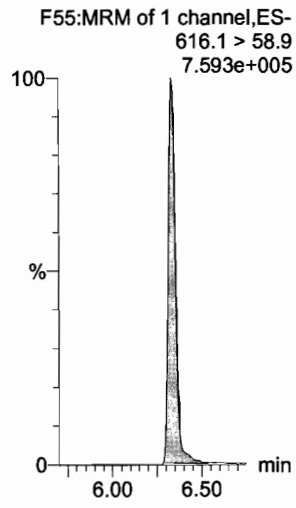


N-MeFOSE



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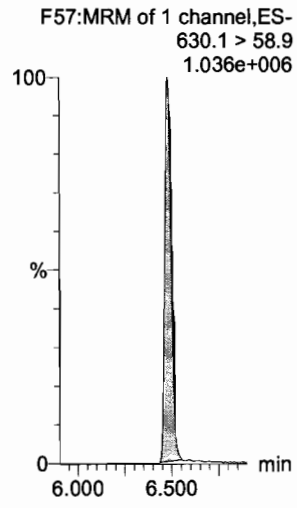

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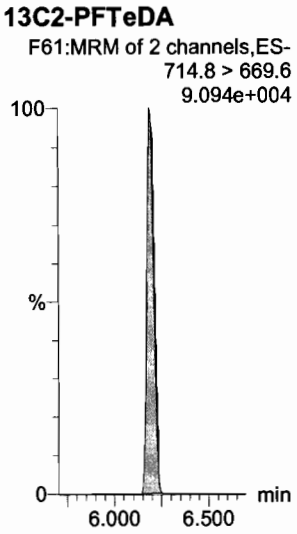
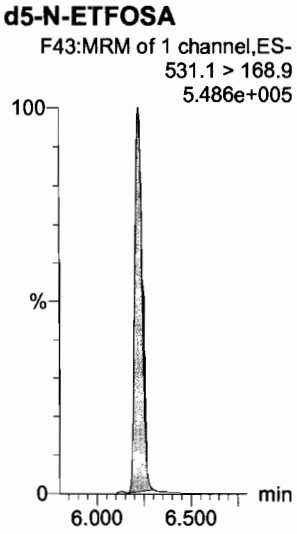


d5-N-ETFOSA



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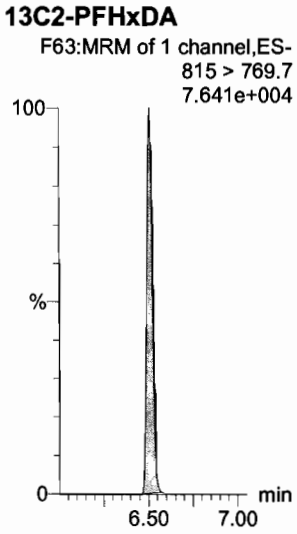

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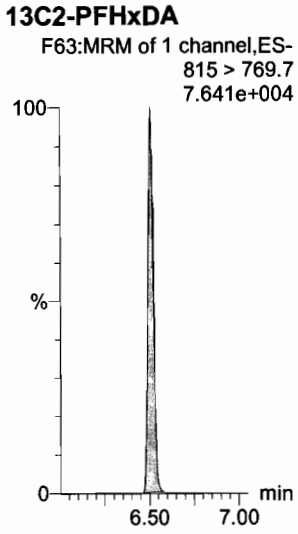
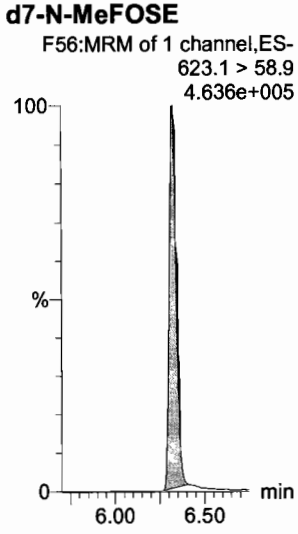
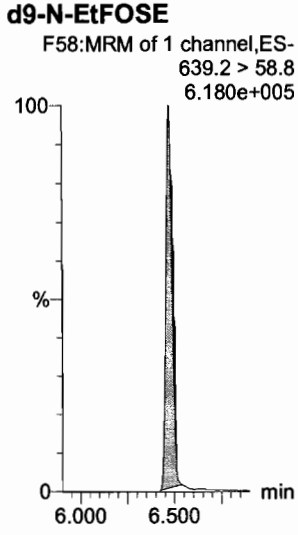


d7-N-MeFOSE



d9-N-EtFOSE

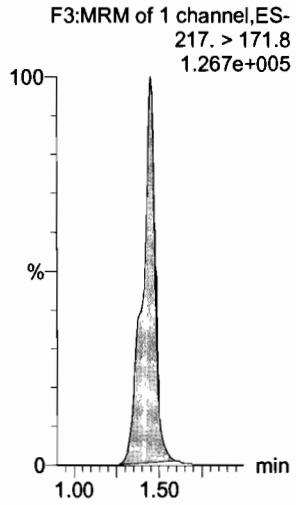


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_8, Date: 05-Feb-2018, Time: 13:13:25, ID: ST180205M1-7 PFC CS4 18A3013, Description: PFC CS4 18A3013

13C4-PFBA



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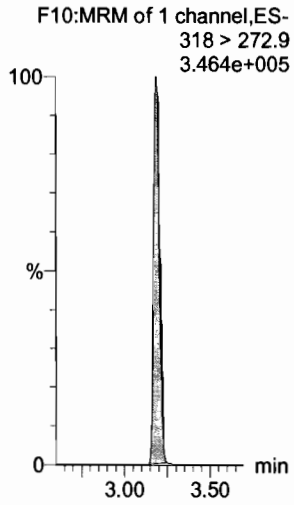
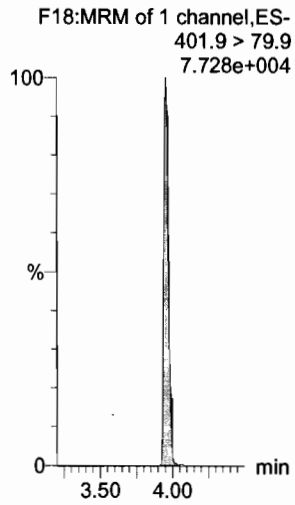
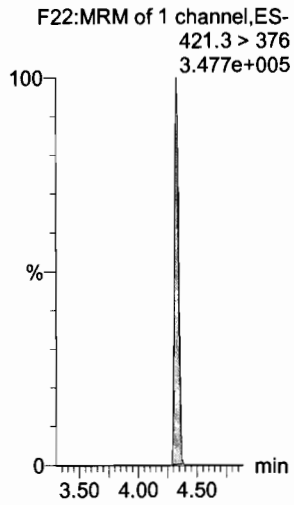


13C3-PFHxS



13C8-PFOA



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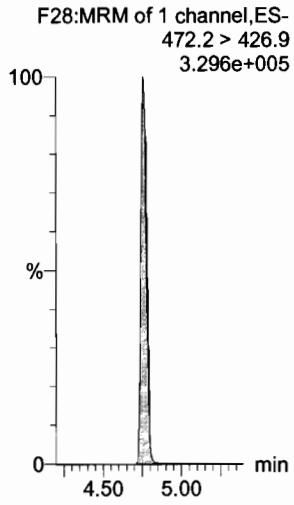
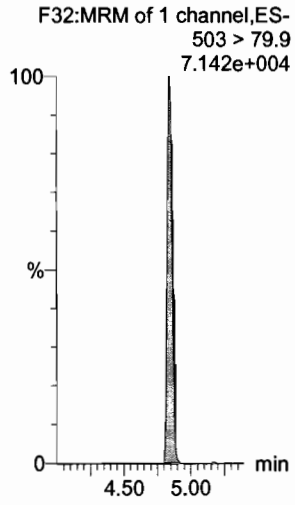


13C4-PFOS



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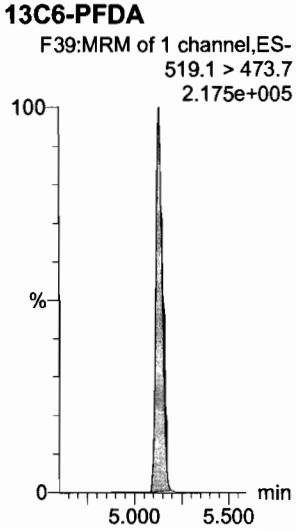
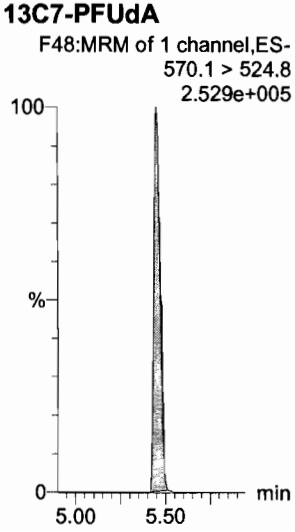
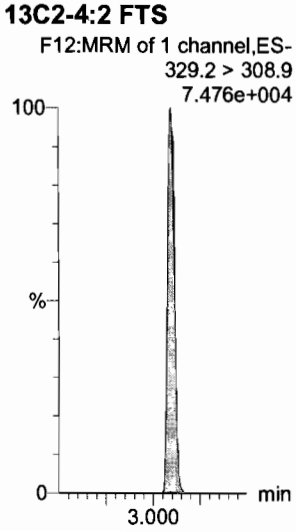


13C7-PFUdA



13C2-4:2 FTS

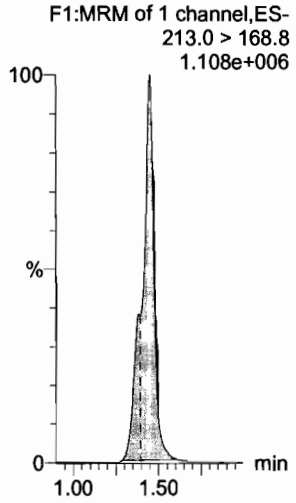


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_9, Date: 05-Feb-2018, Time: 13:24:55, ID: ST180205M1-8 PFC CS5 18A3014, Description: PFC CS5 18A3014

PFBA



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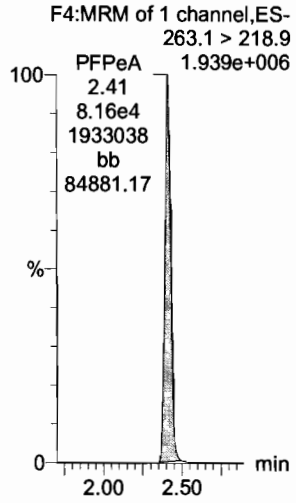

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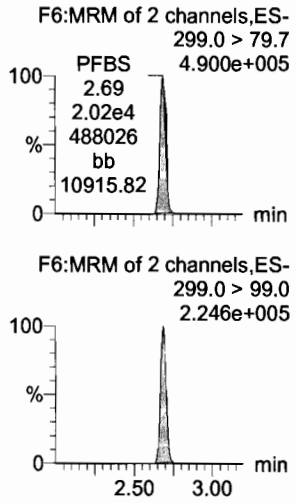
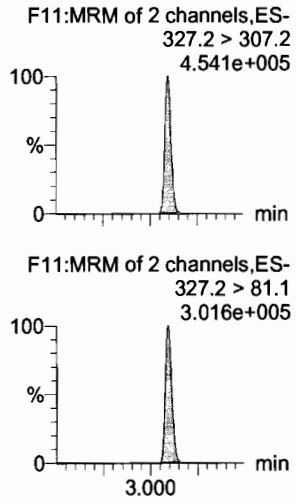
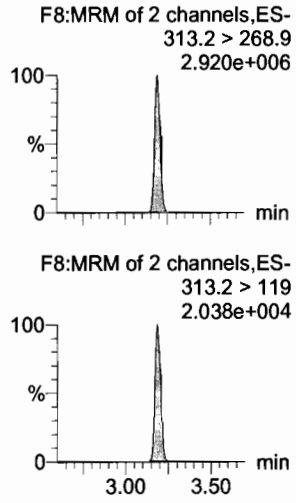


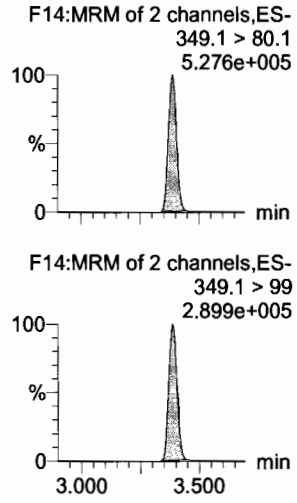
4:2 FTS



PFHxA



PFPeS



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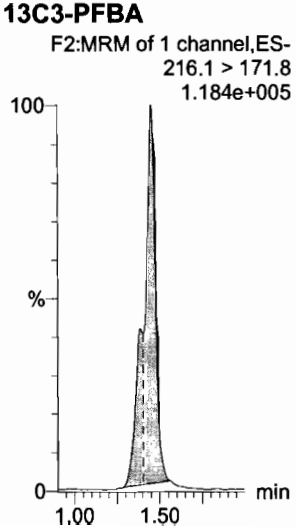
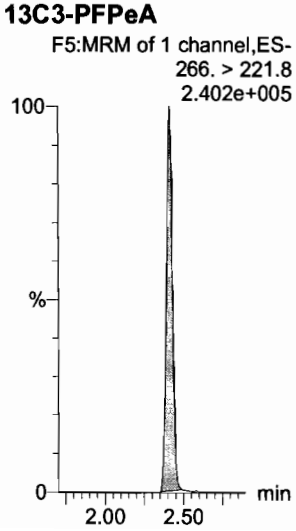
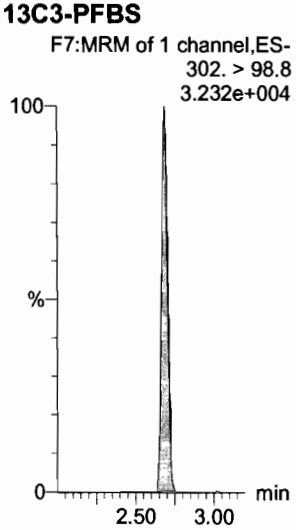


13C3-PFPeA



13C3-PFBS



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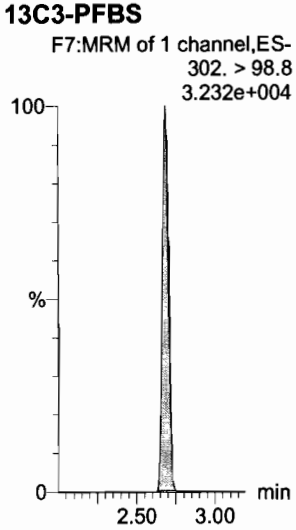

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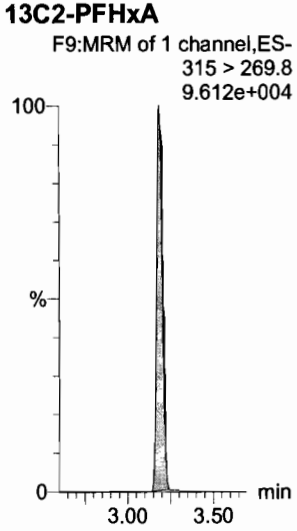

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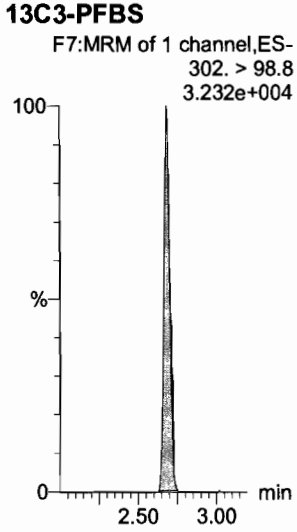
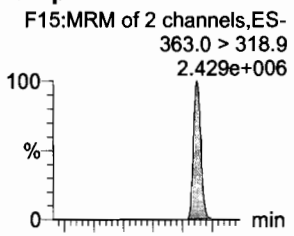


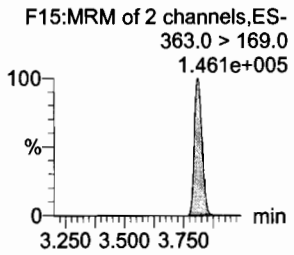
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

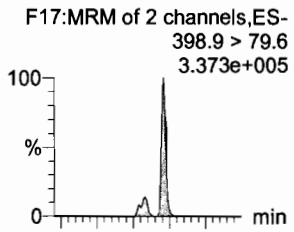
Name: 180205M1_9, Date: 05-Feb-2018, Time: 13:24:55, ID: ST180205M1-8 PFC CS5 18A3014, Description: PFC CS5 18A3014

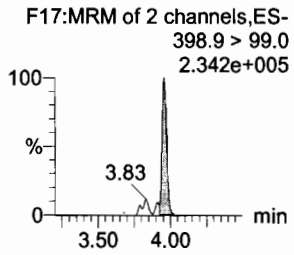
PFHpA



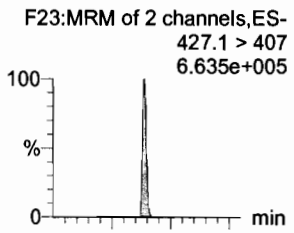


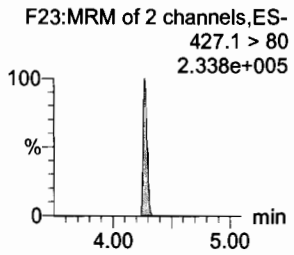
L-PFHxS



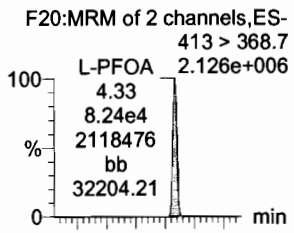


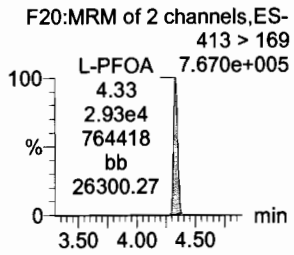
6:2 FTS



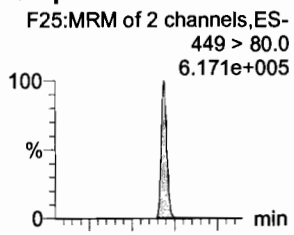


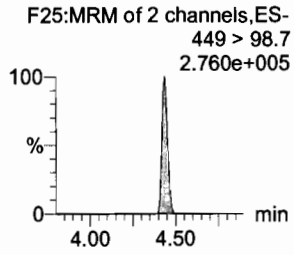
L-PFOA





PFHpS





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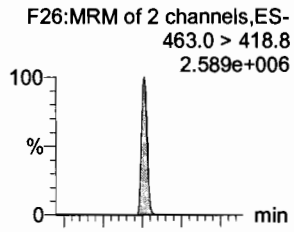
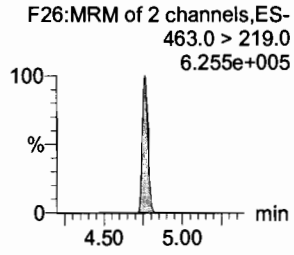
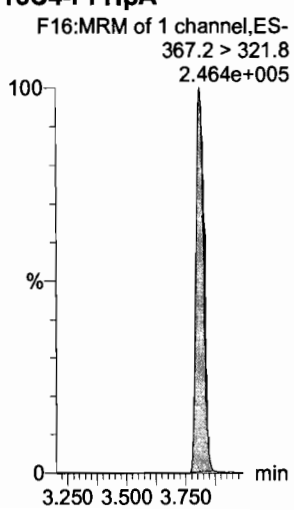




13C4-PFHpA



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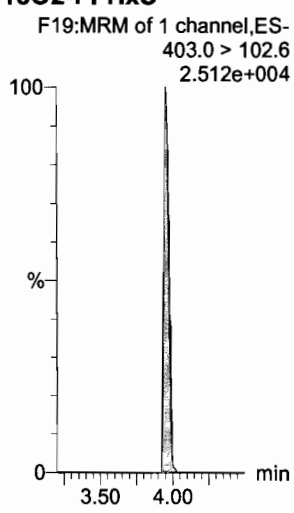

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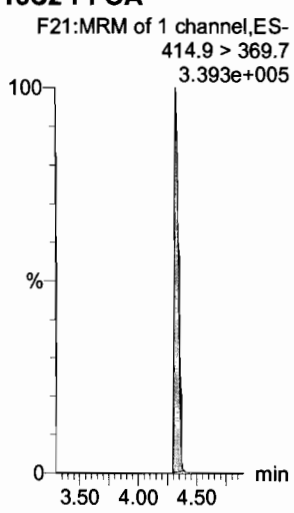

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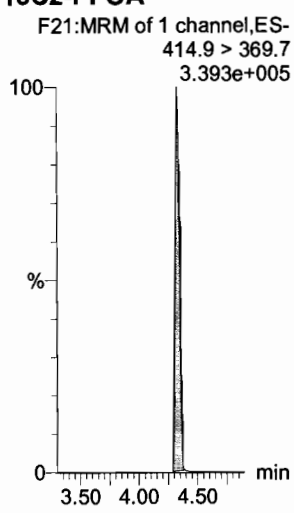

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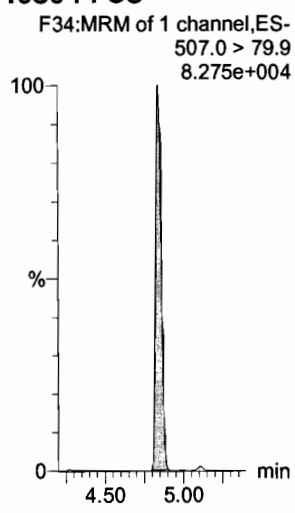

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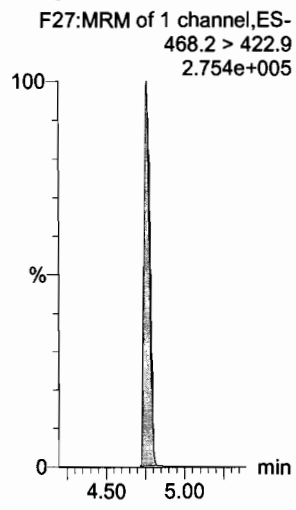

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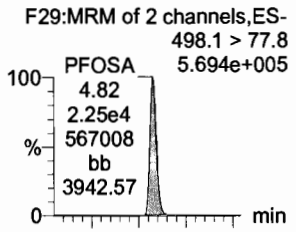
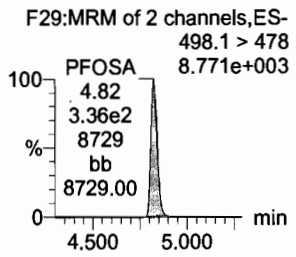
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_9, Date: 05-Feb-2018, Time: 13:24:55, ID: ST180205M1-8 PFC CS5 18A3014, Description: PFC CS5 18A3014

PFOSA





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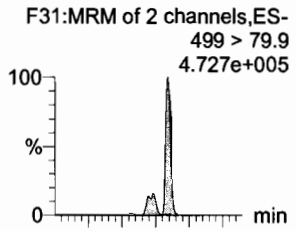

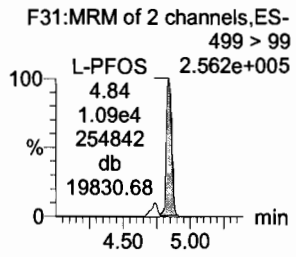

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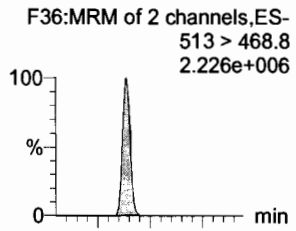

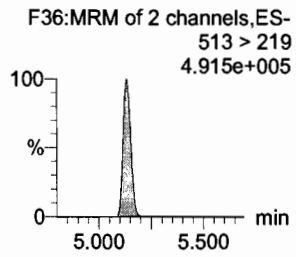

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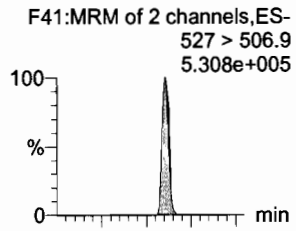

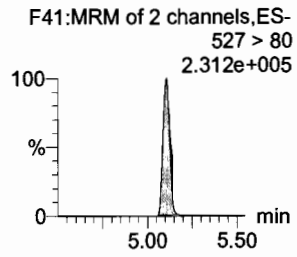

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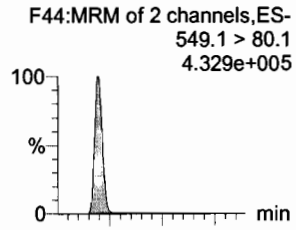

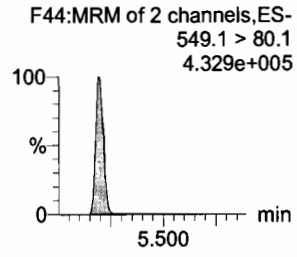

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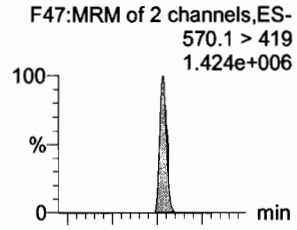

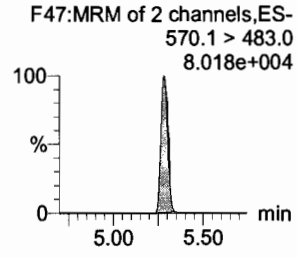

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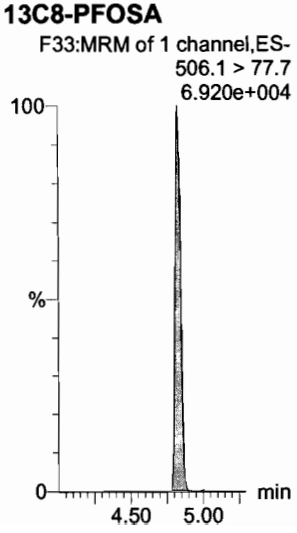

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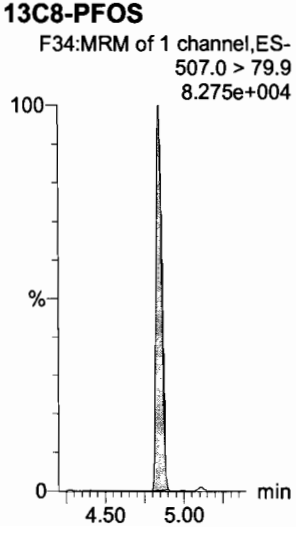

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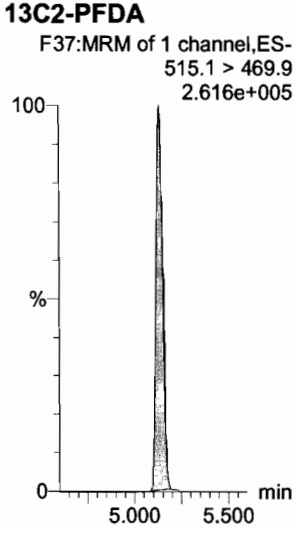

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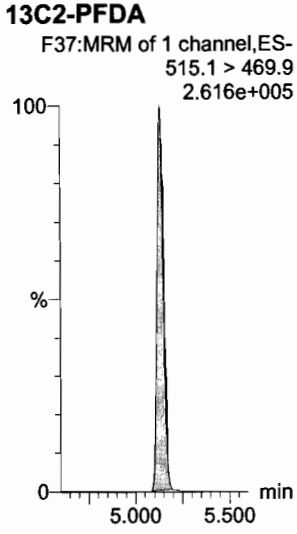

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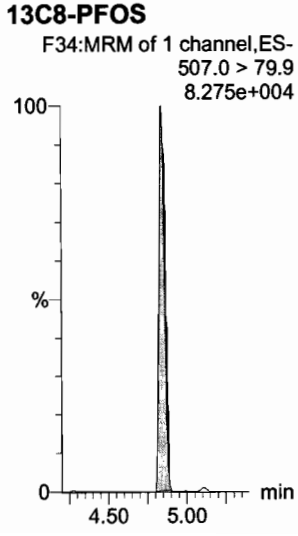

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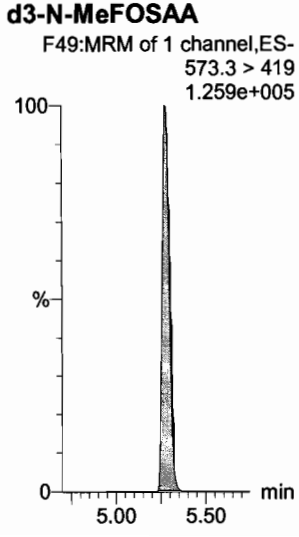

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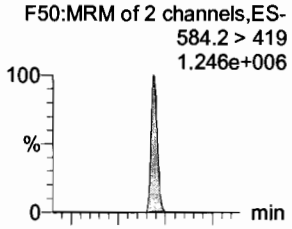

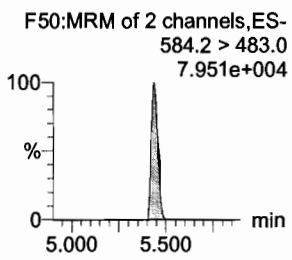

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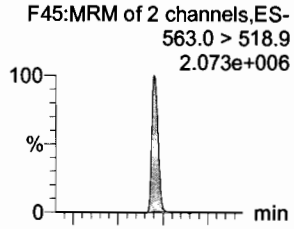

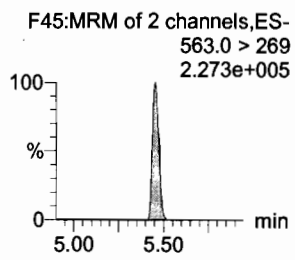

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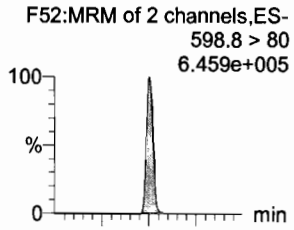

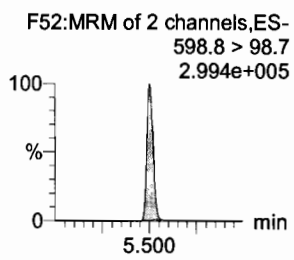

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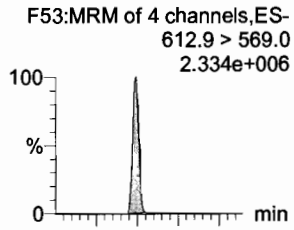

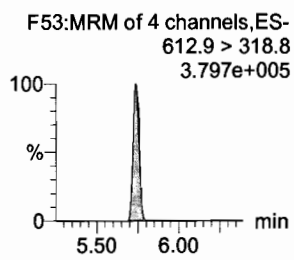

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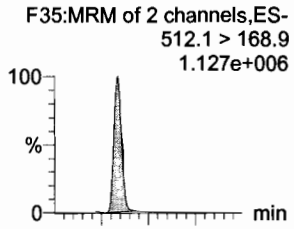

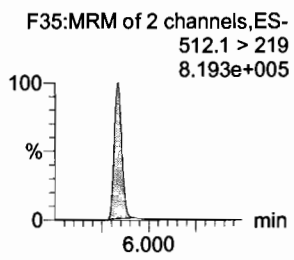

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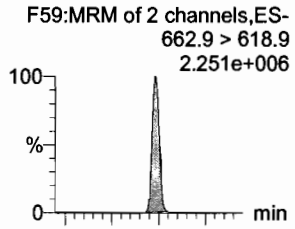
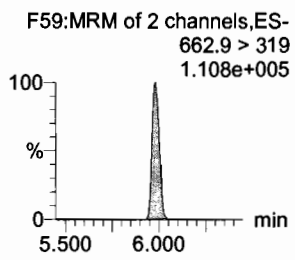
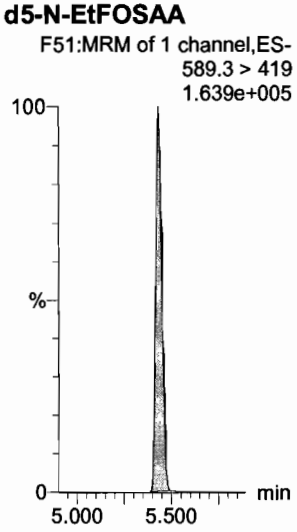
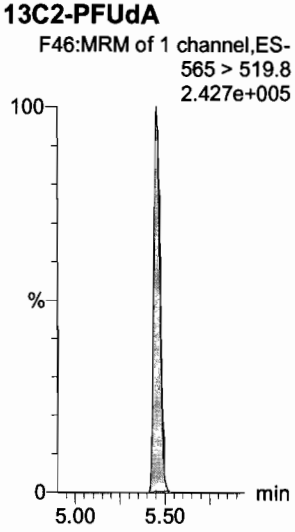




d5-N-EtFOSAA



13C2-PFUdA



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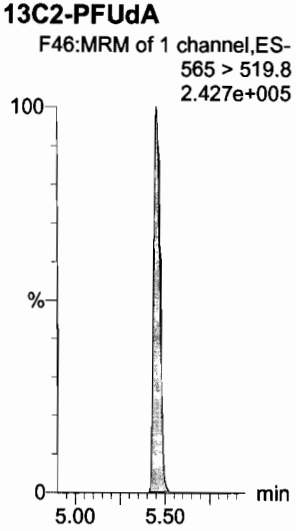

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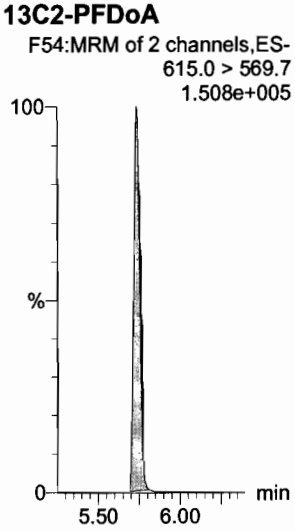

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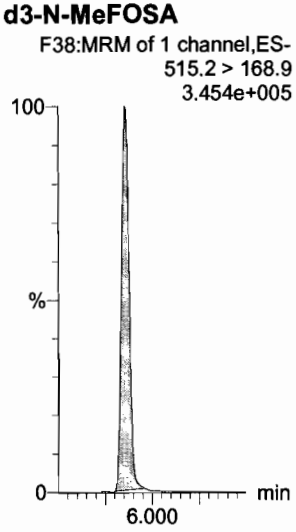

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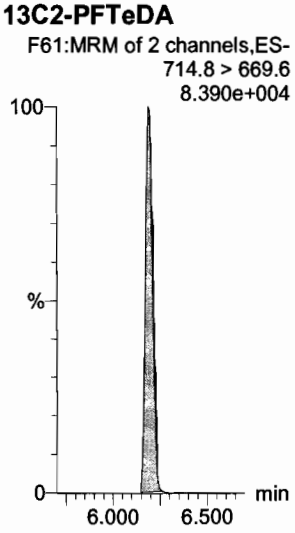

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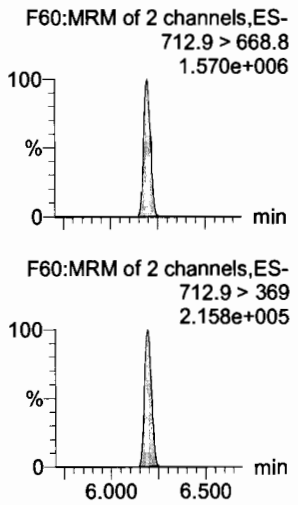

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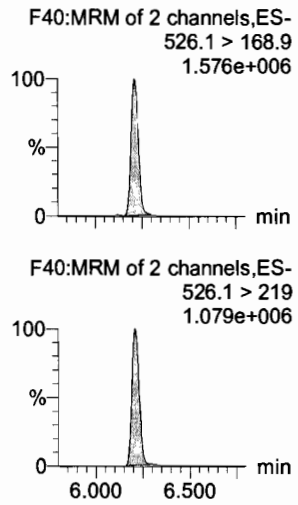

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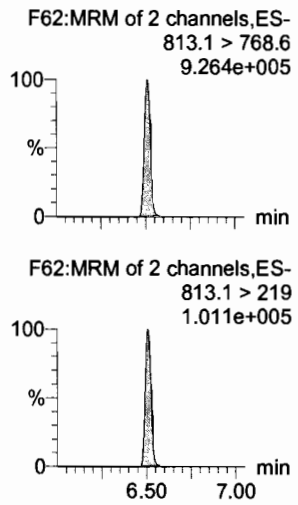

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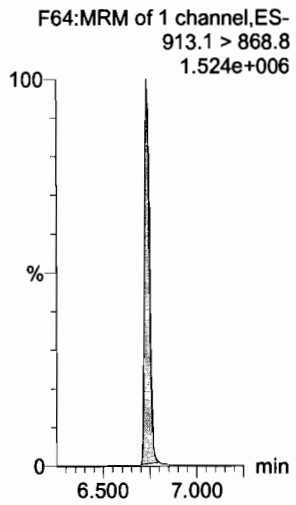

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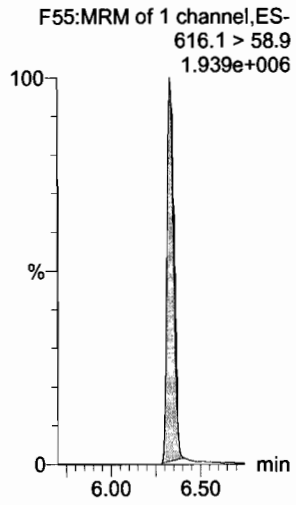

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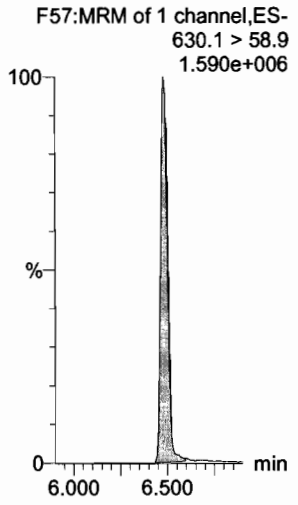

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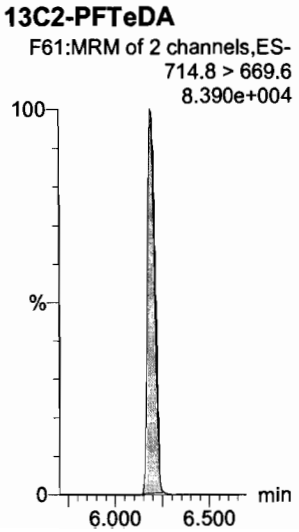
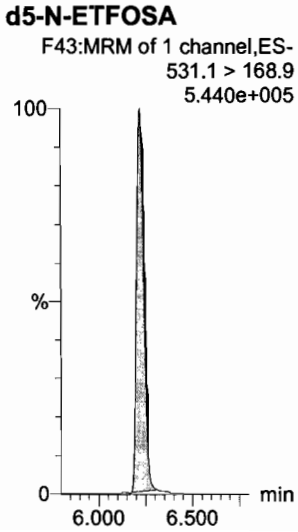
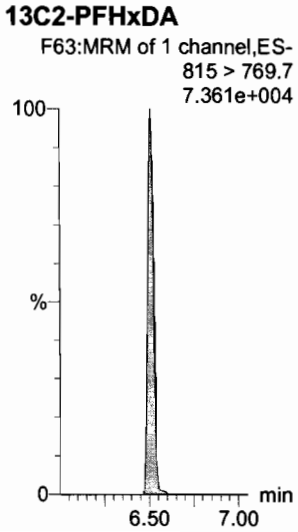


d5-N-ETFOSA



13C2-PFHxDA



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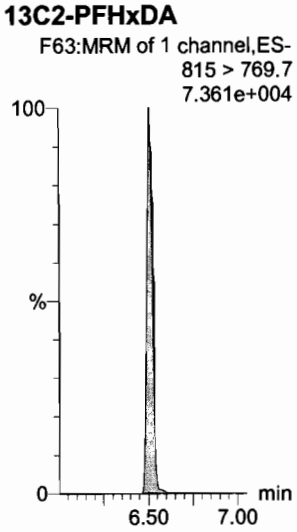
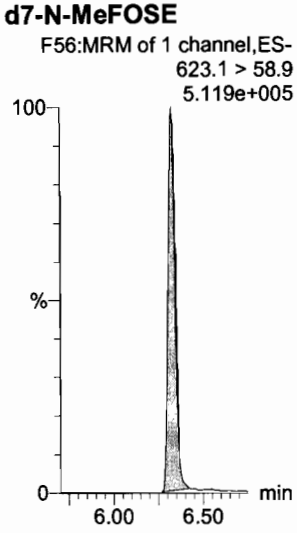


d7-N-MeFOSE



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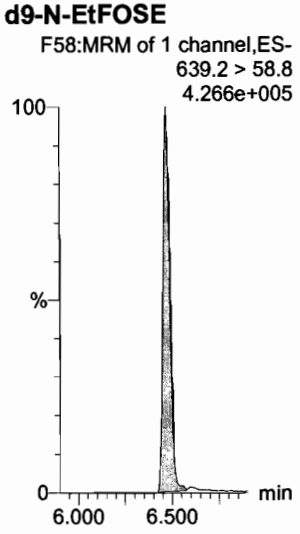
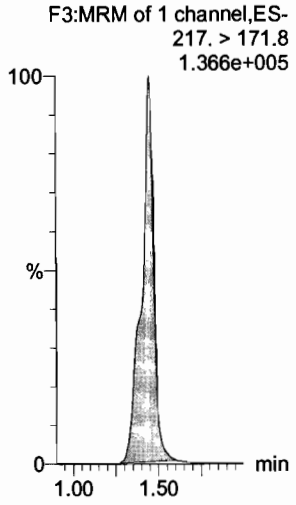


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_9, Date: 05-Feb-2018, Time: 13:24:55, ID: ST180205M1-8 PFC CS5 18A3014, Description: PFC CS5 18A3014

13C4-PFBA



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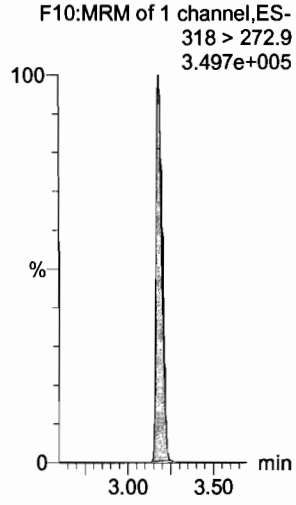
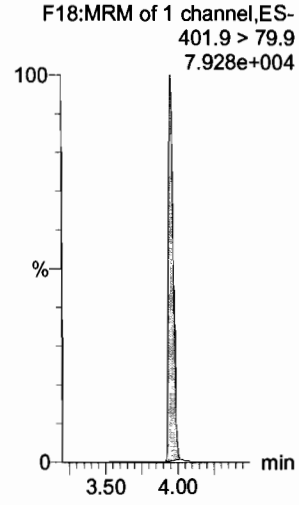
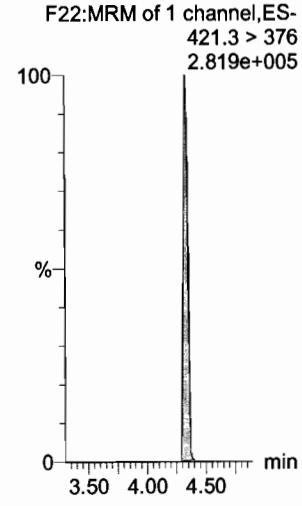


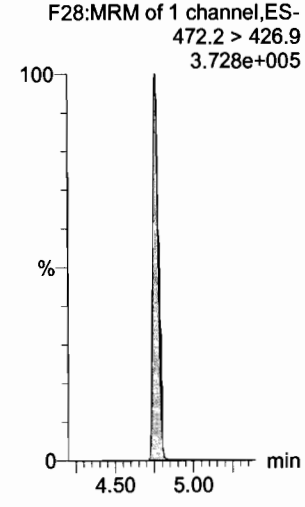
13C3-PFHxS



13C8-PFOA



13C9-PFNA



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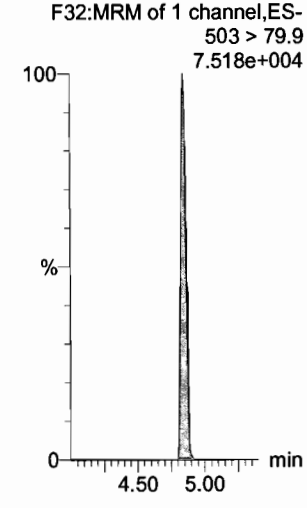

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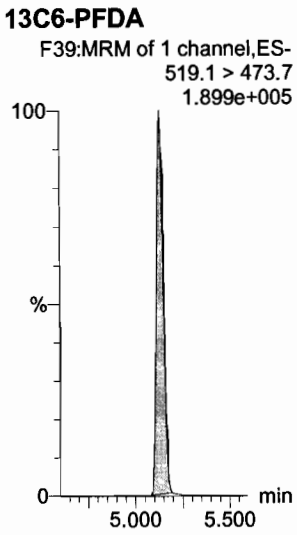
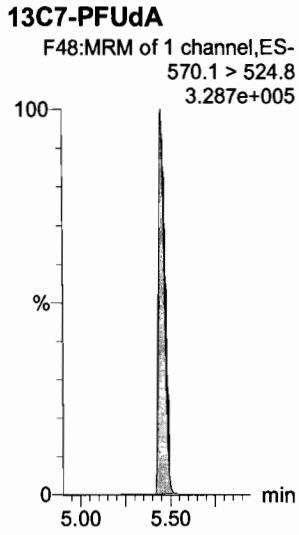
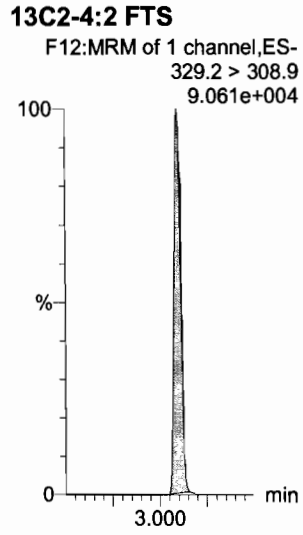


13C7-PFUdA



13C2-4:2 FTS

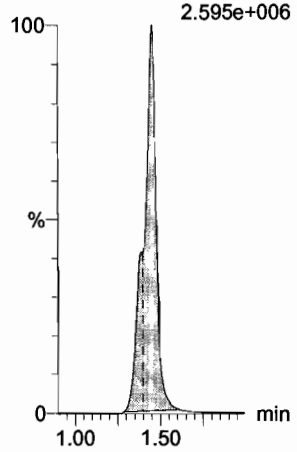


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

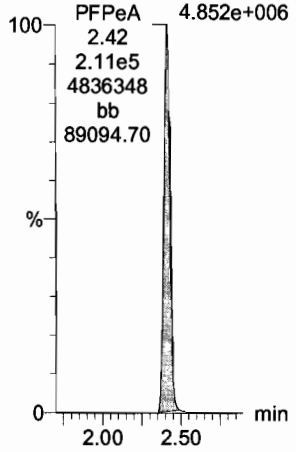
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

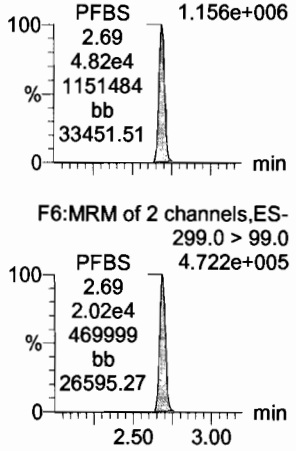
PFBA



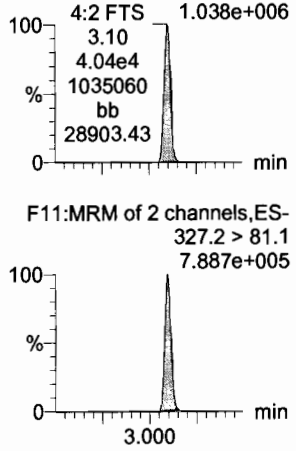
PFPeA



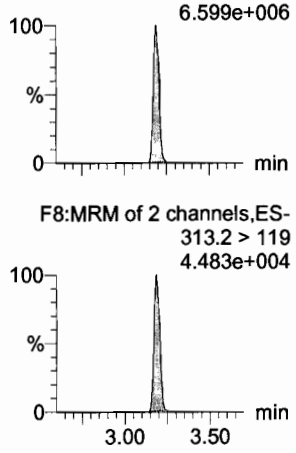
PFBS



4:2 FTS



PFHxA



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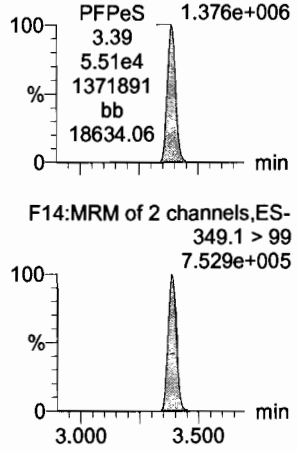
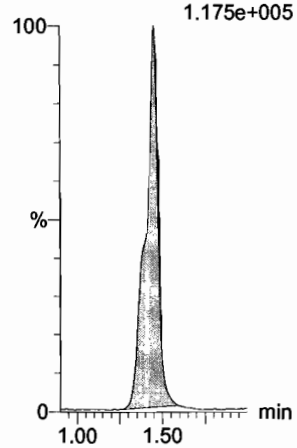


13C3-PFBA



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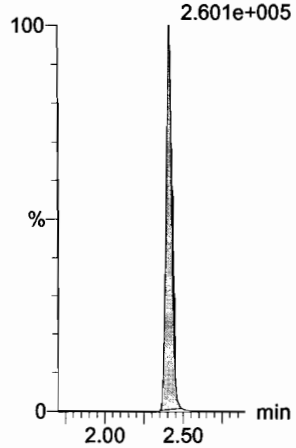

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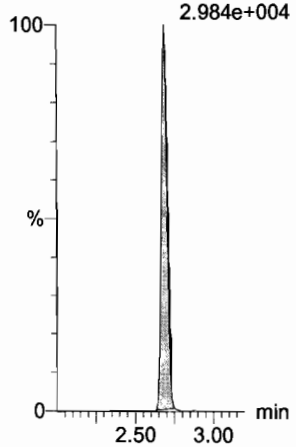

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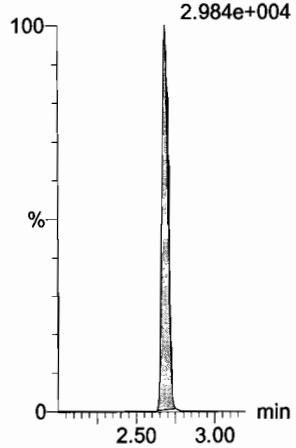
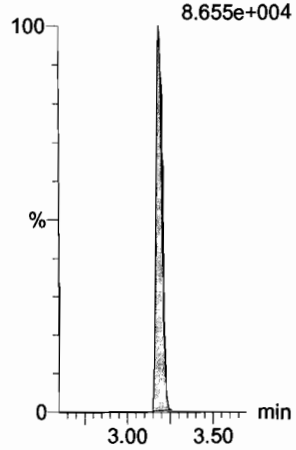
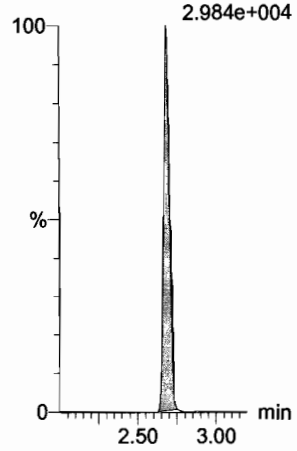


13C2-PFHxA



13C3-PFBS

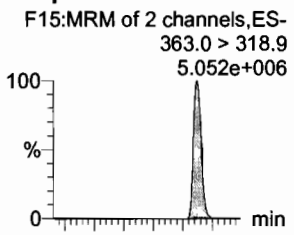


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

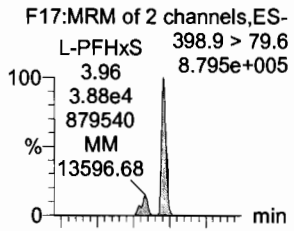
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

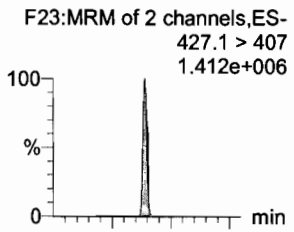
PFHpA



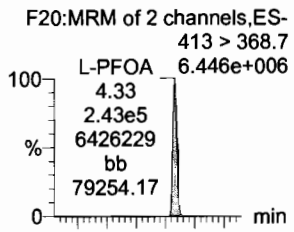
L-PFHxS



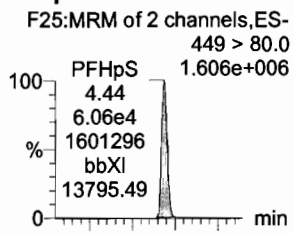
6:2 FTS



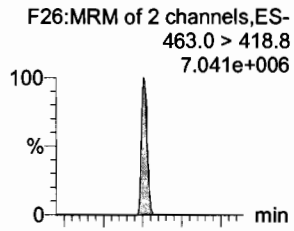
L-PFOA

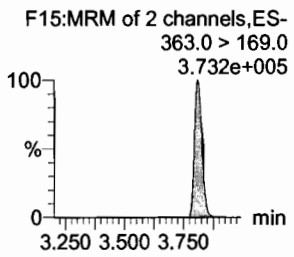


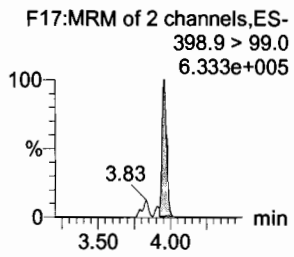
PFHpS

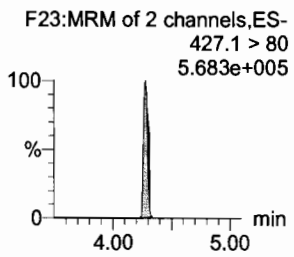


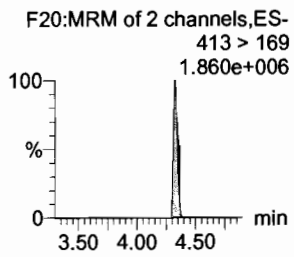
PFNA

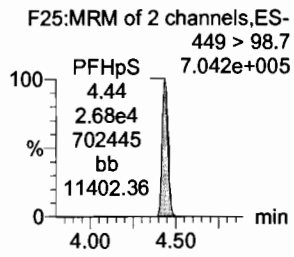


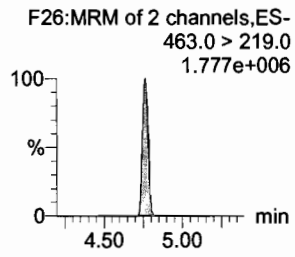




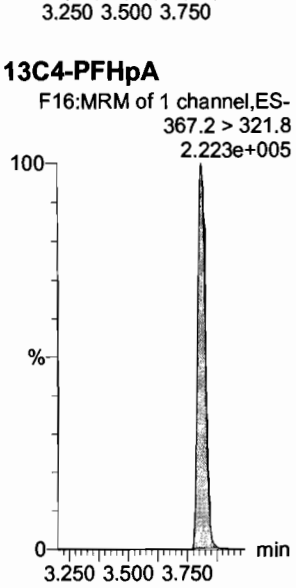




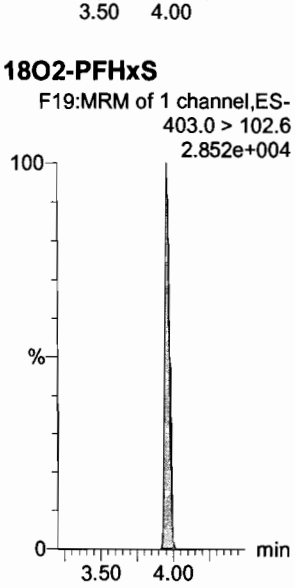




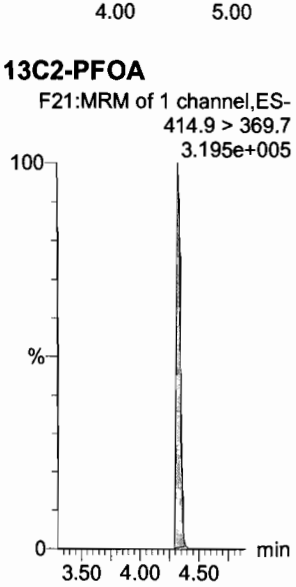
13C4-PFHpA



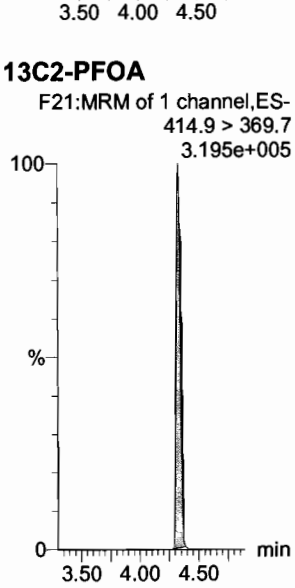
18O2-PFHxS



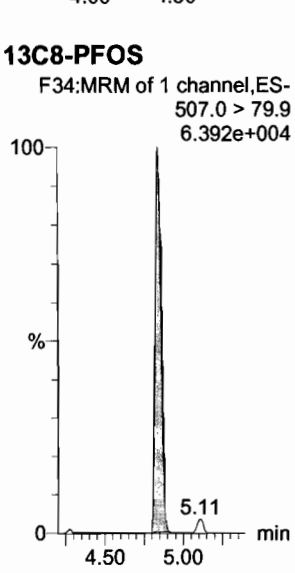
13C2-PFOA



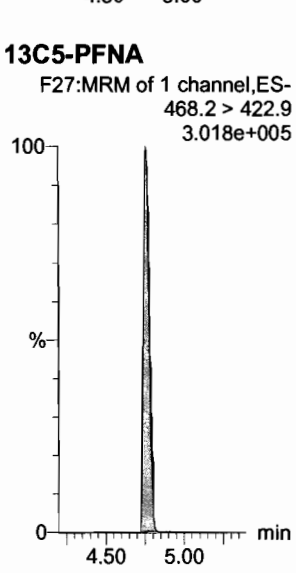
13C2-PFOA



13C8-PFOS



13C5-PFNA

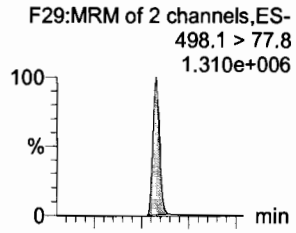


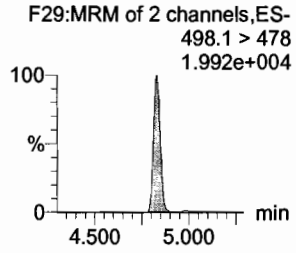
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

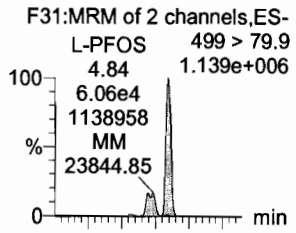
Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

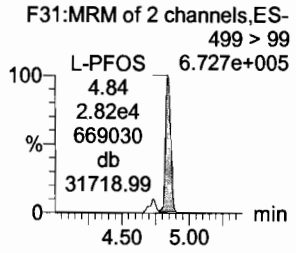
PFOSA



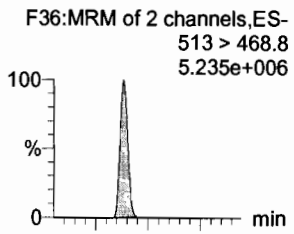


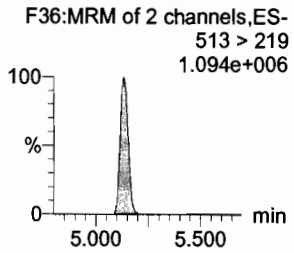
L-PFOS



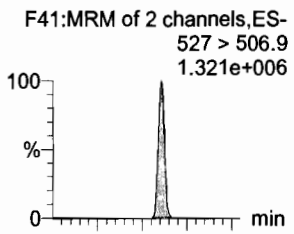


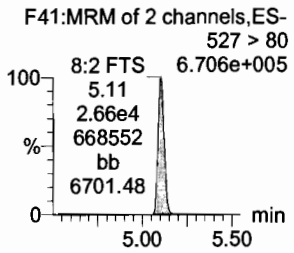
PFDA



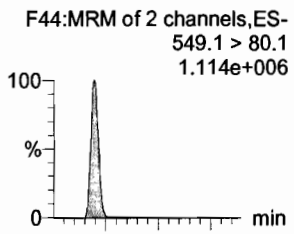


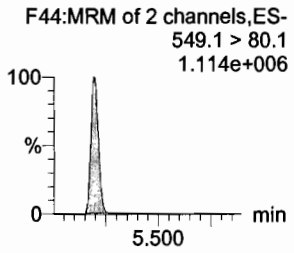
8:2 FTS



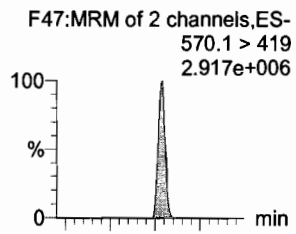


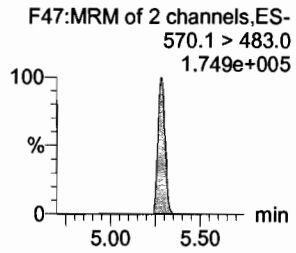
PFNS



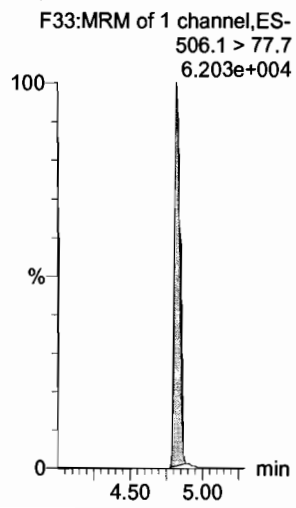


N-MeFOSAA





13C8-PFOSA



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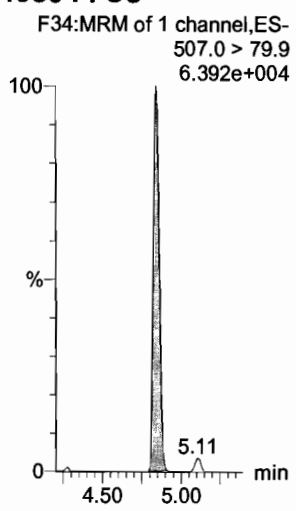
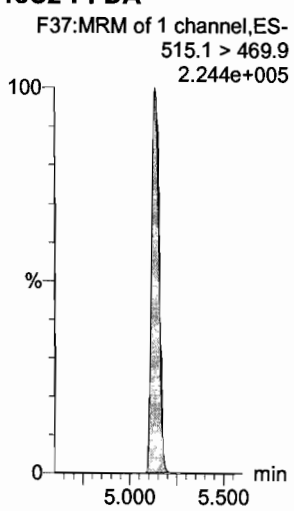


13C2-PFDA



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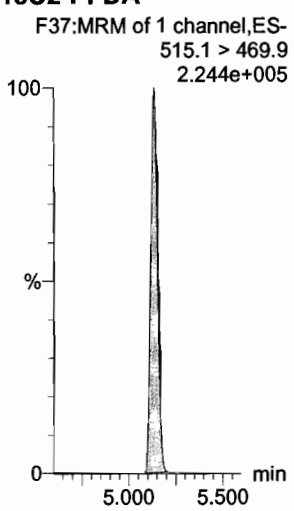
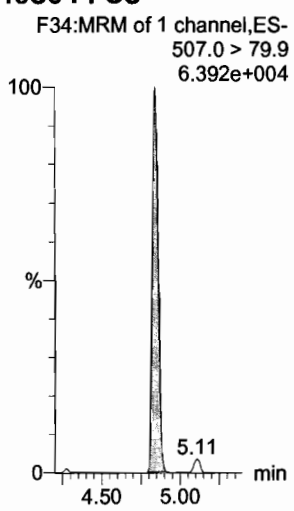
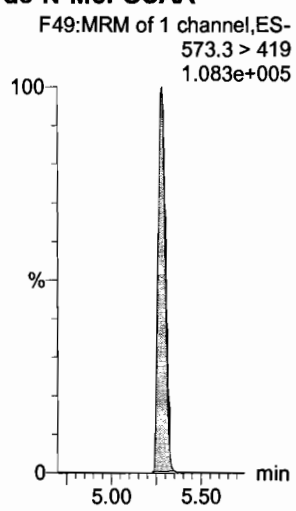


13C8-PFOS



d3-N-MeFOSAA



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Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

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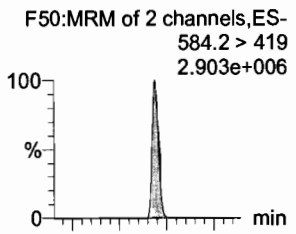

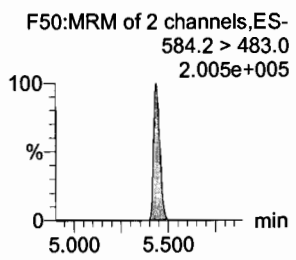

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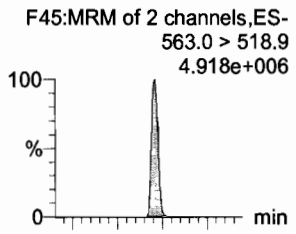

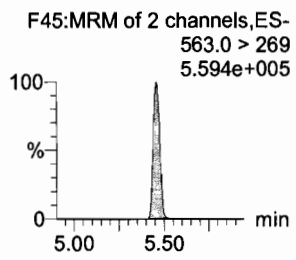

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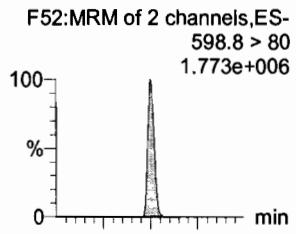

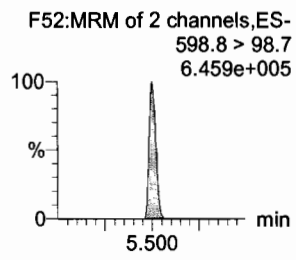

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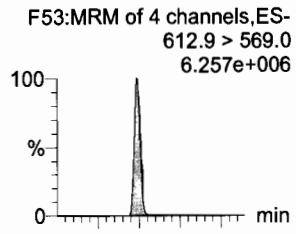

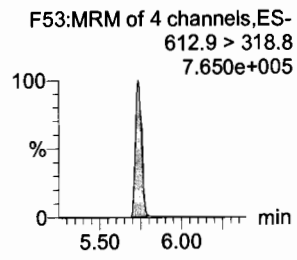

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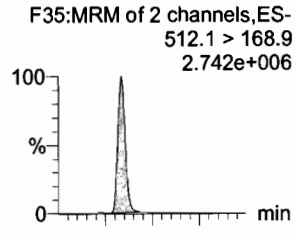

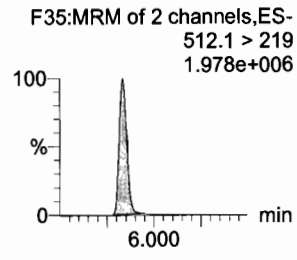

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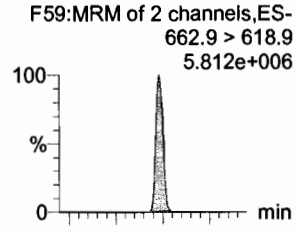
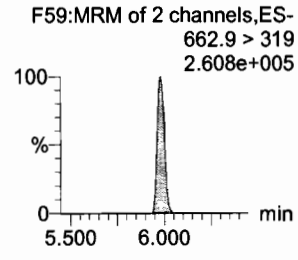
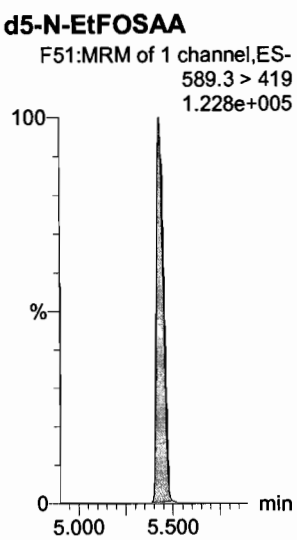
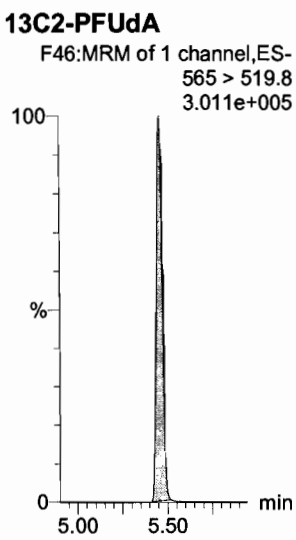




d5-N-EtFOSAA



13C2-PFUdA



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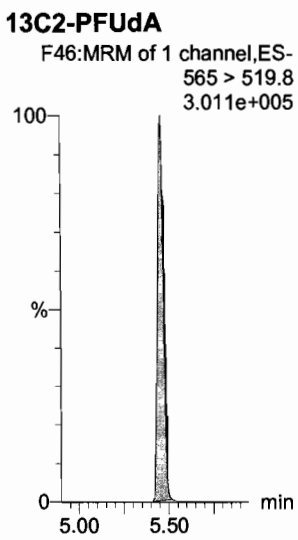
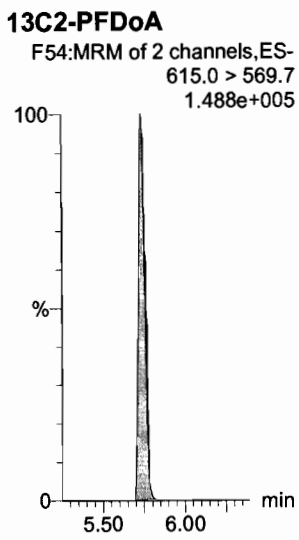


13C2-PFDoA



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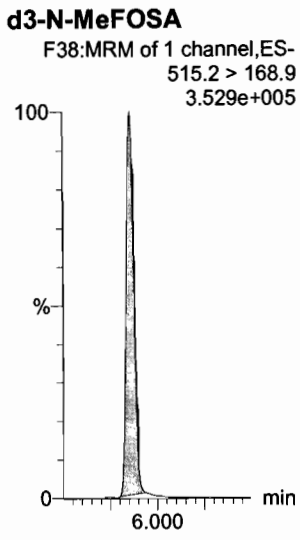

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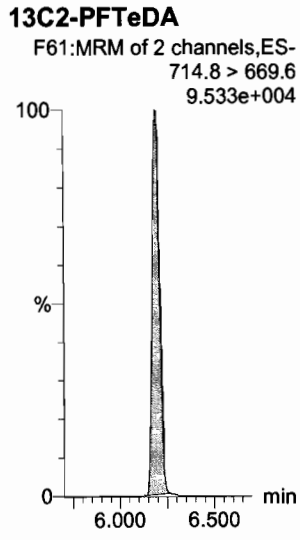

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

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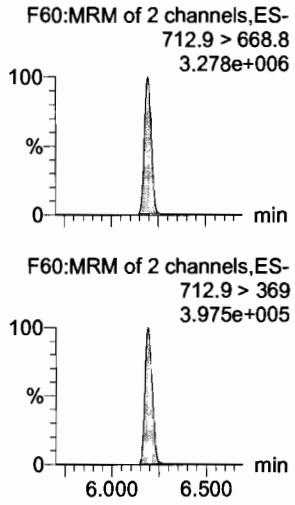
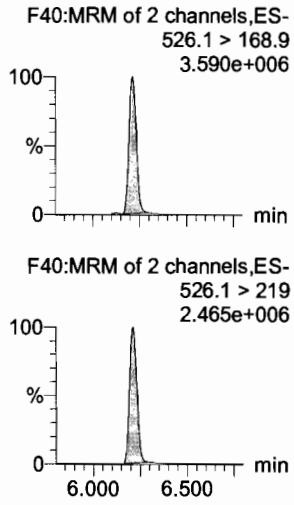
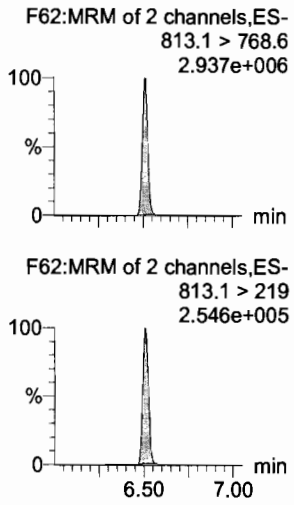


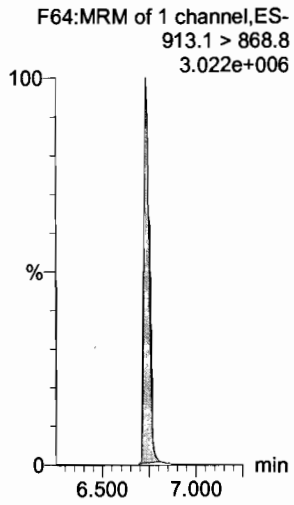
N-EtFOSA



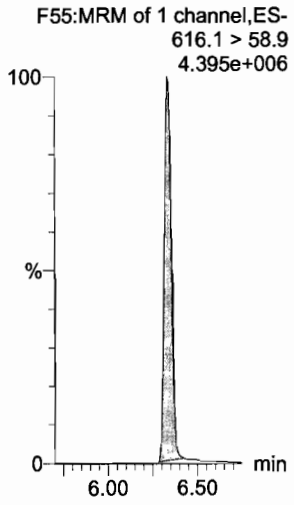
PFHxDA



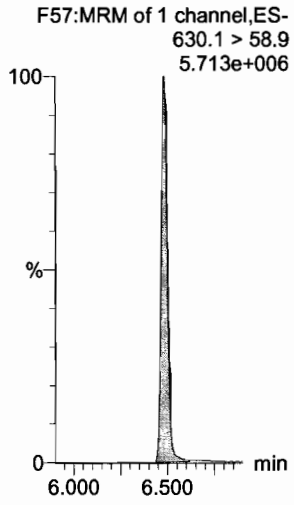
PFODA



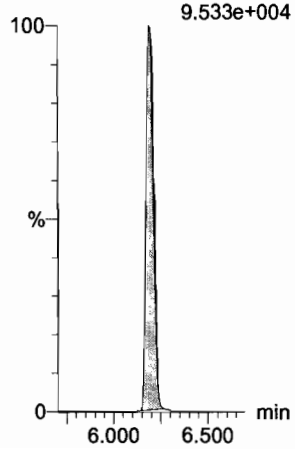
N-MeFOSE



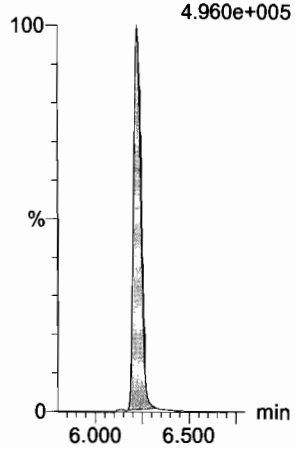
N-EtFOSE



13C2-PFTeDA



d5-N-ETFOSA



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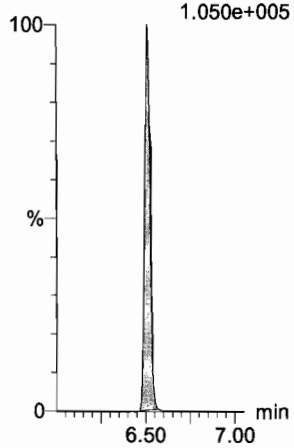

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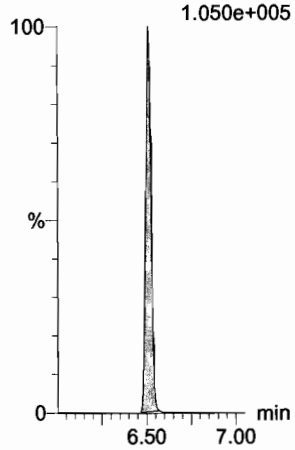
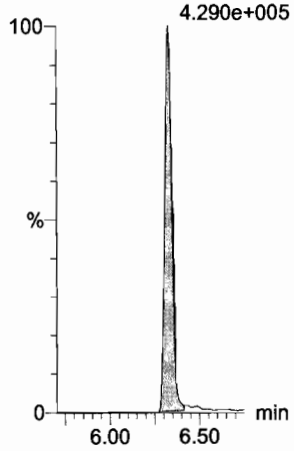
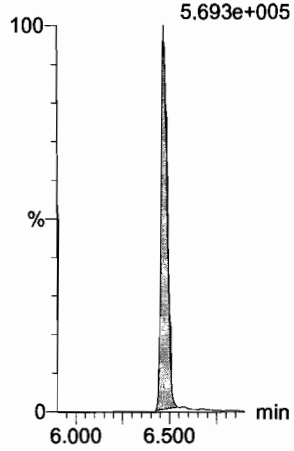


d7-N-MeFOSE



d9-N-EtFOSE

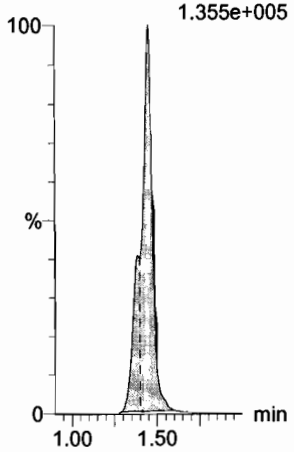


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

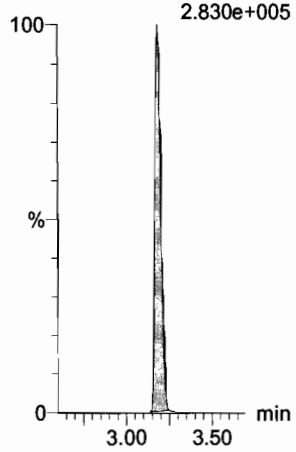
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_10, Date: 05-Feb-2018, Time: 13:36:22, ID: ST180205M1-9 PFC CS6 18A3015, Description: PFC CS6 18A3015

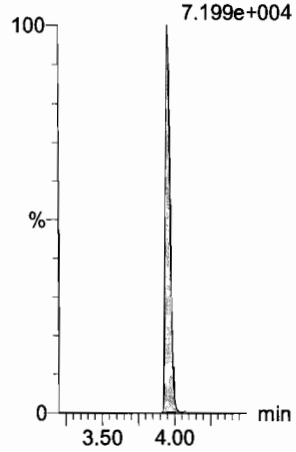
13C4-PFBA



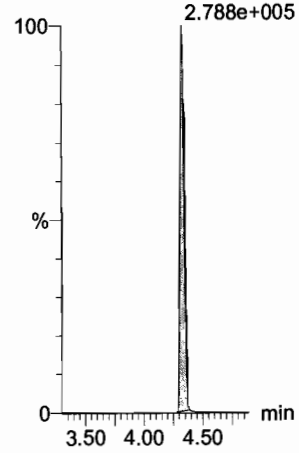
13C5-PFHxA



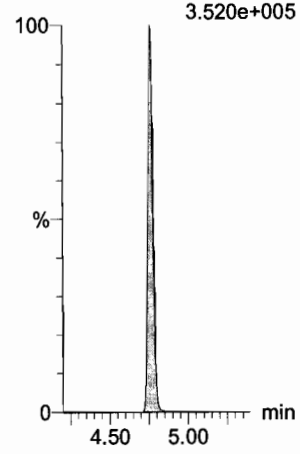
13C3-PFHxS



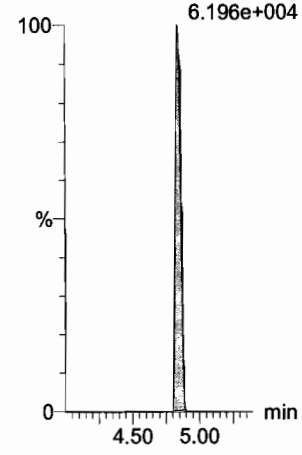
13C8-PFOA



13C9-PFNA



13C4-PFOS



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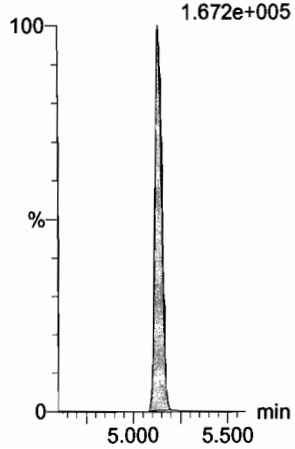

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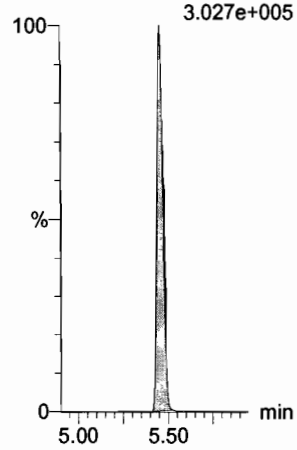
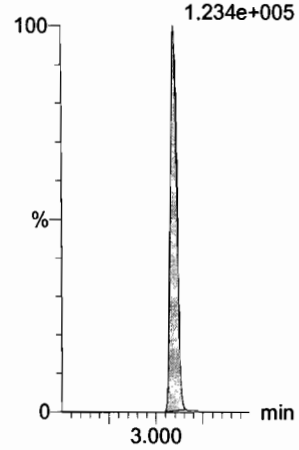


13C2-4:2 FTS



Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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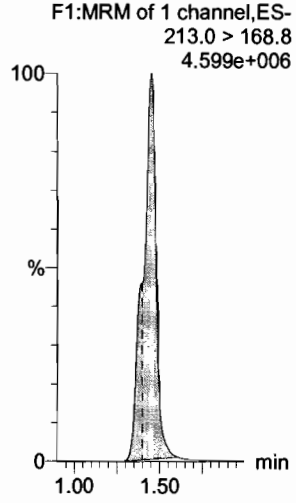
Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

PFBA



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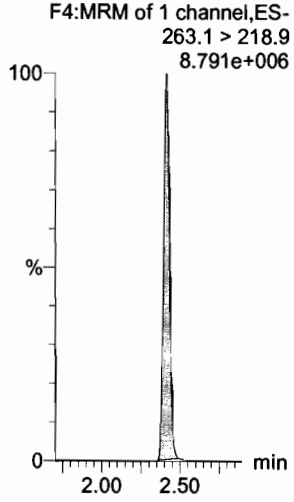

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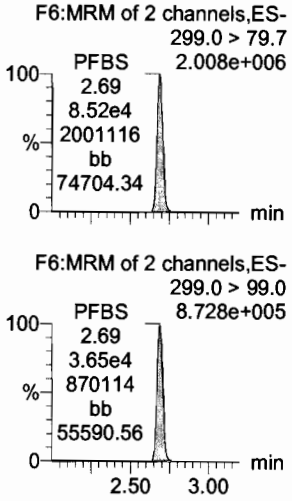
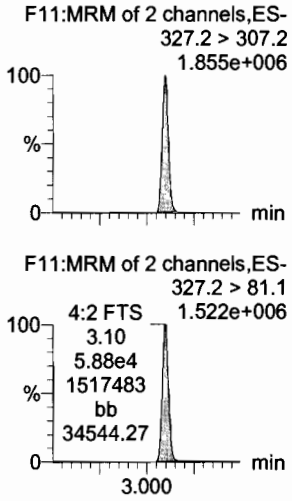


4:2 FTS



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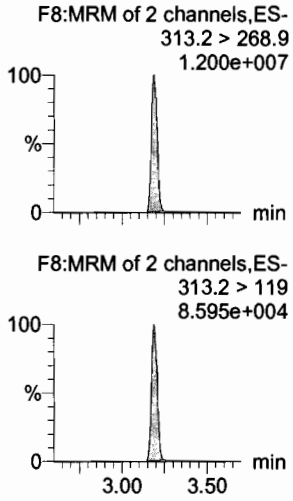

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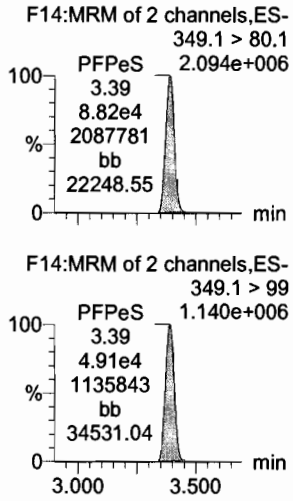
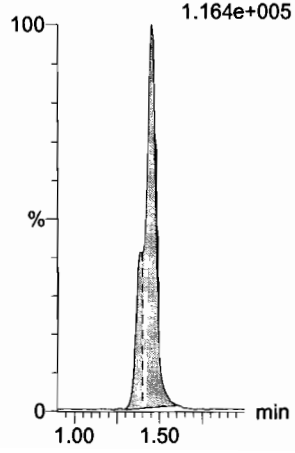


13C3-PFBA



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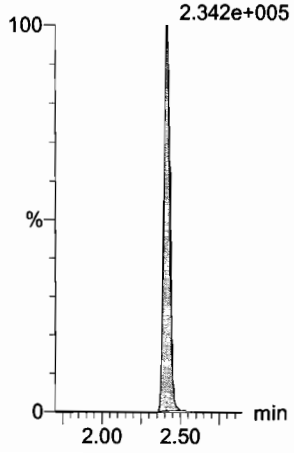

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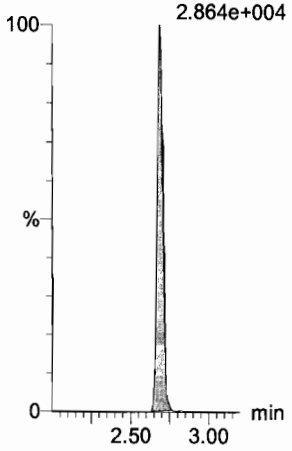

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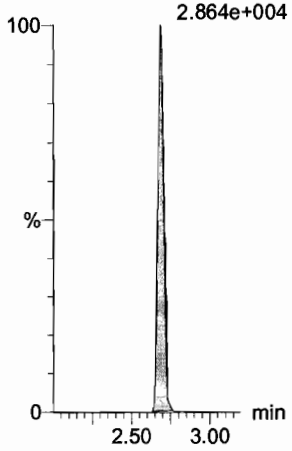

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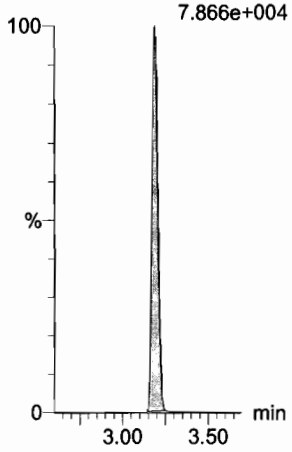

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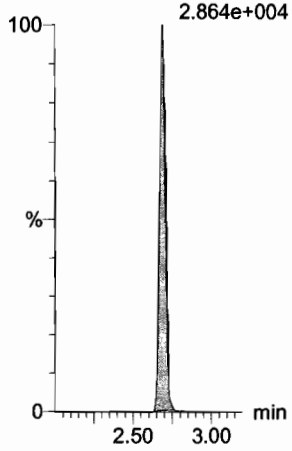

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Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

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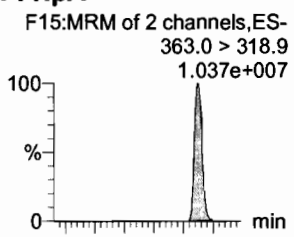

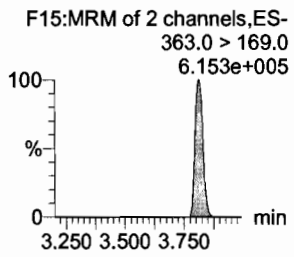

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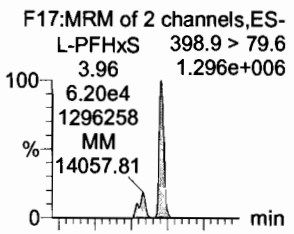
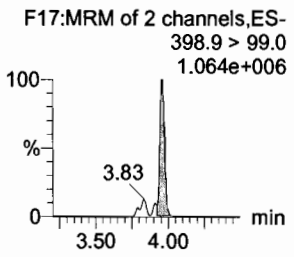
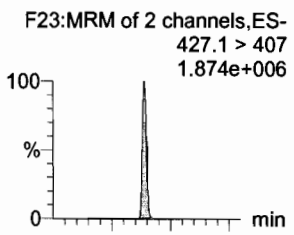
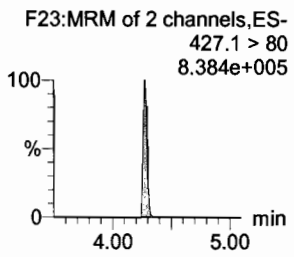




6:2 FTS





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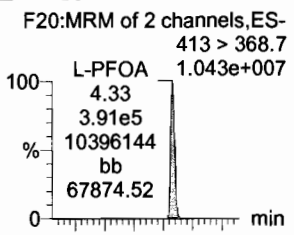

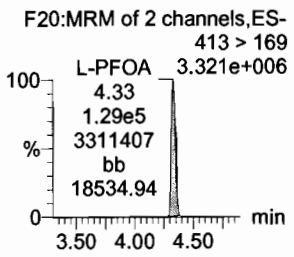

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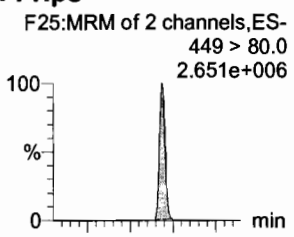

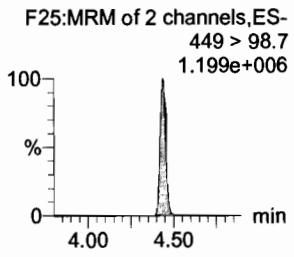

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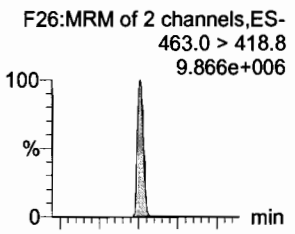

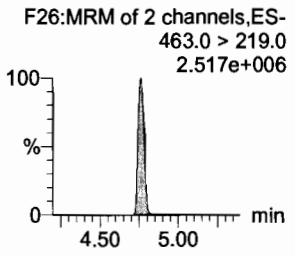

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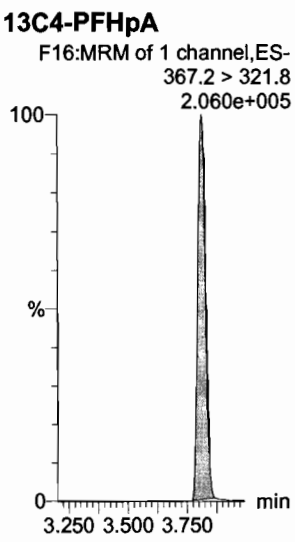
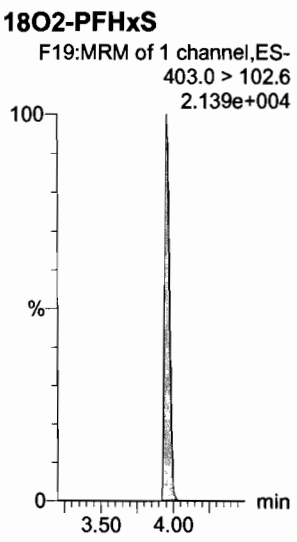


18O2-PFHxS



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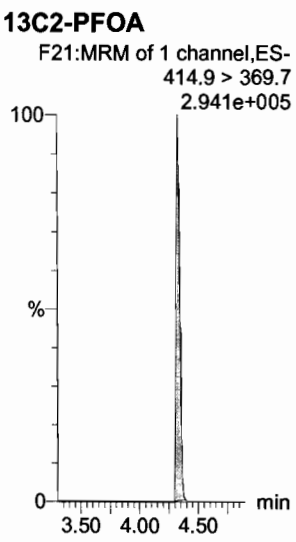

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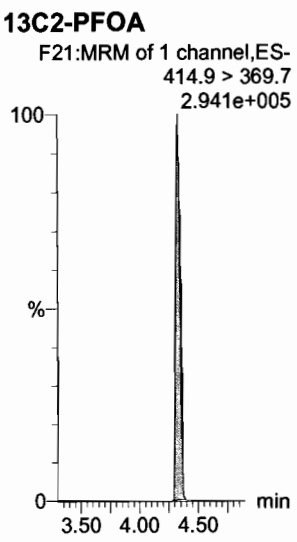
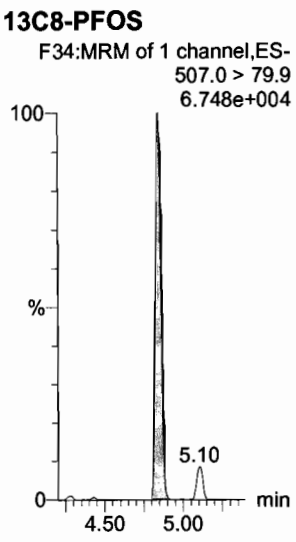


13C8-PFOS



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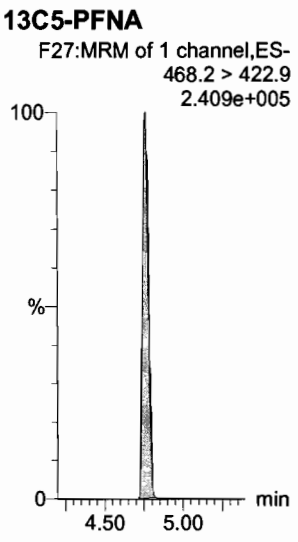

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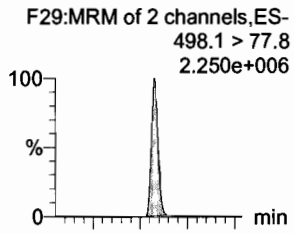
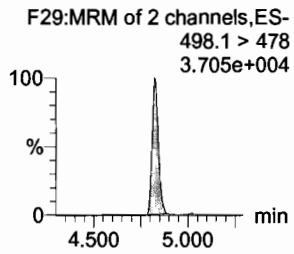
Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

PFOSA





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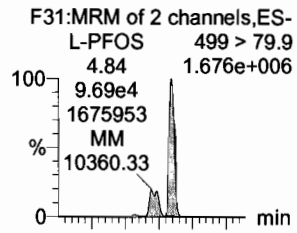

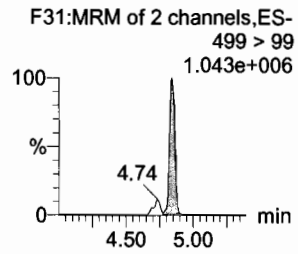

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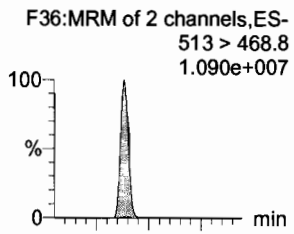
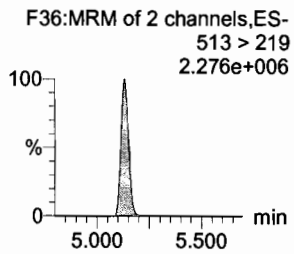
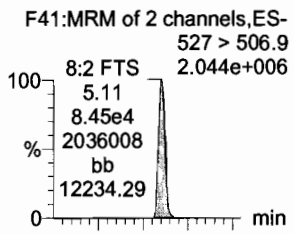
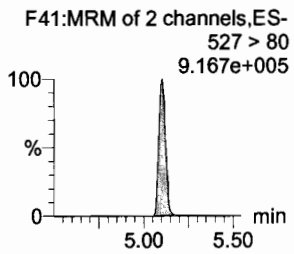




8:2 FTS





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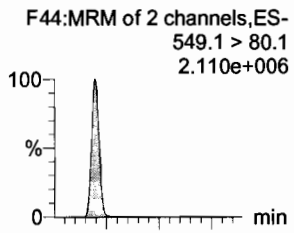

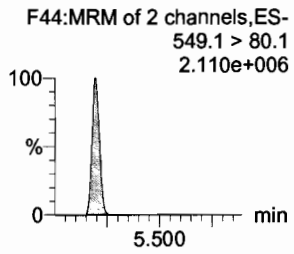

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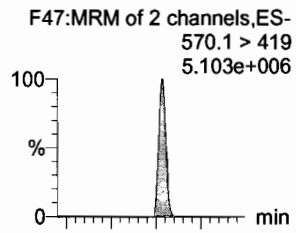

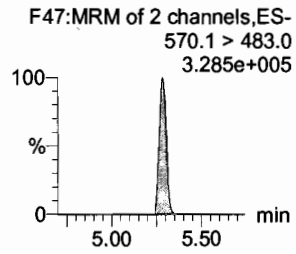

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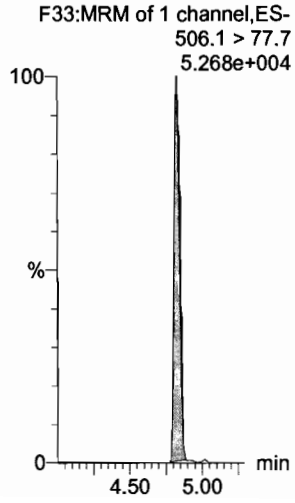

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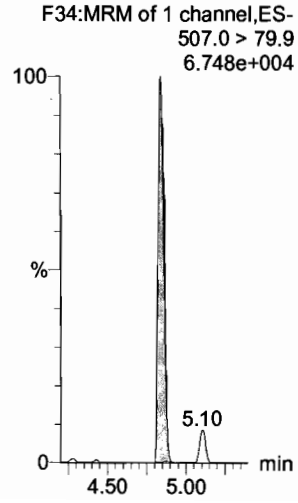

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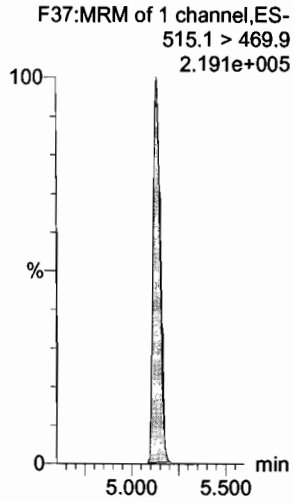

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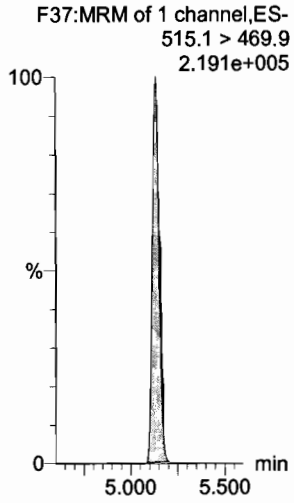

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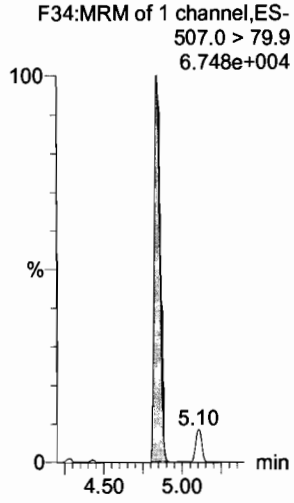

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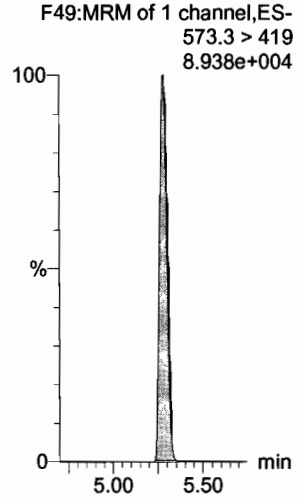

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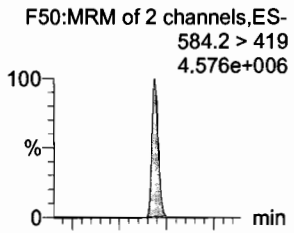
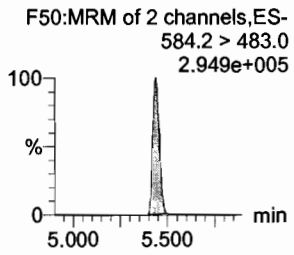
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

N-EtFOSAA





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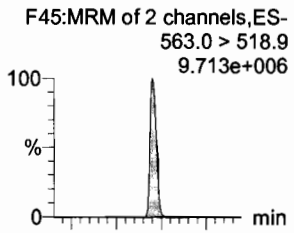

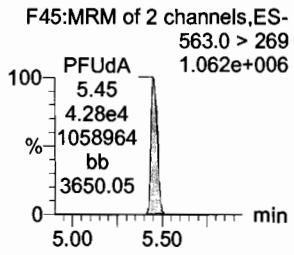

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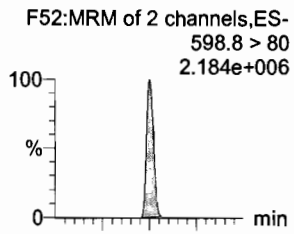

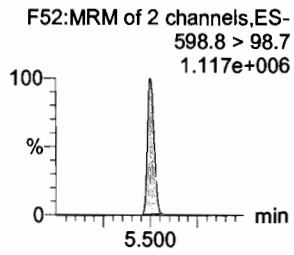

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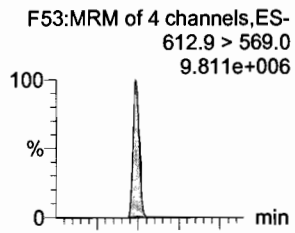
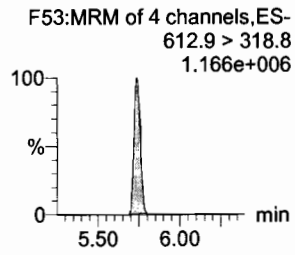
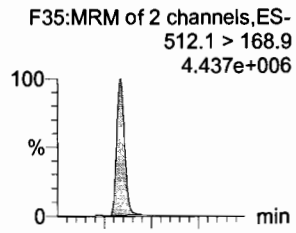
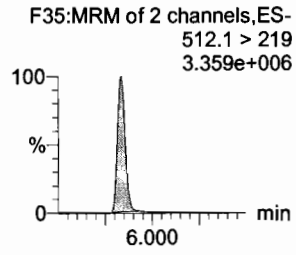


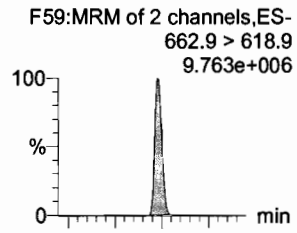


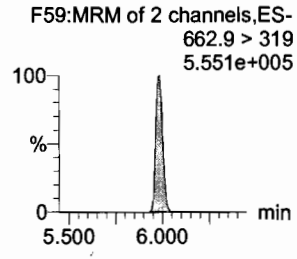
N-MeFOSA



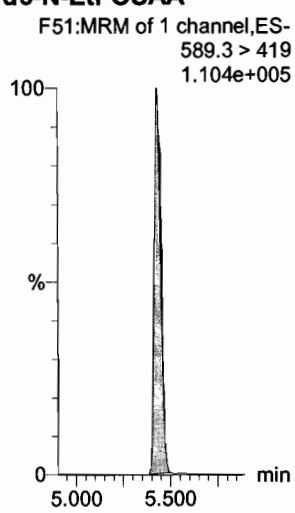


PFTrDA

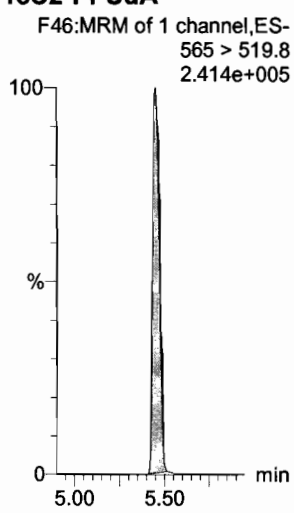




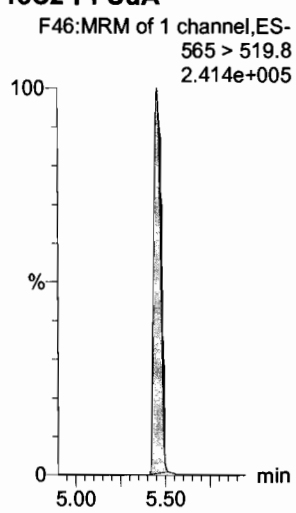
d5-N-EtFOSAA



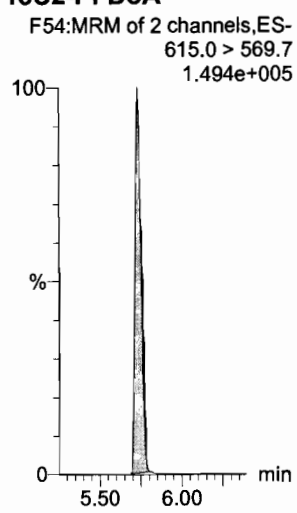
13C2-PFUdA



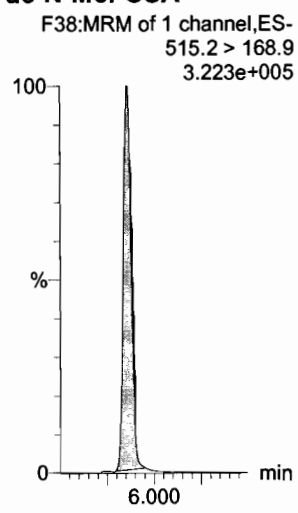
13C2-PFUdA



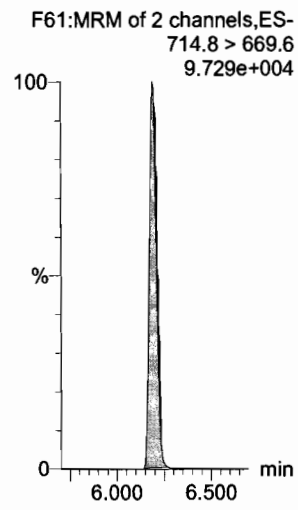
13C2-PFDoA



d3-N-MeFOSA



13C2-PFTeDA

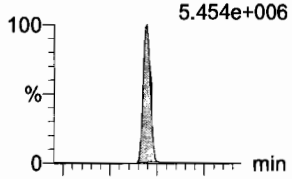


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

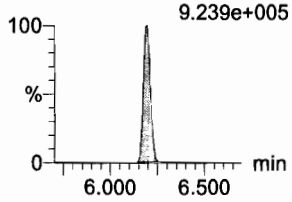
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

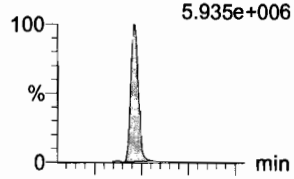
PFTeDA
F60:MRM of 2 channels,ES-
712.9 > 668.8
5.454e+006



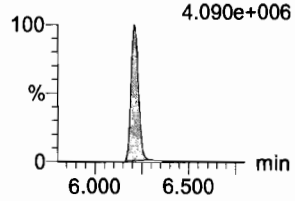
F60:MRM of 2 channels,ES-
712.9 > 369
9.239e+005



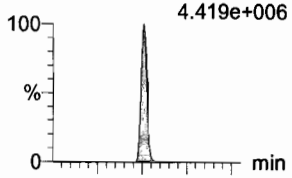
N-EtFOSA
F40:MRM of 2 channels,ES-
526.1 > 168.9
5.935e+006



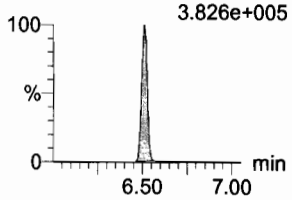
F40:MRM of 2 channels,ES-
526.1 > 219
4.090e+006



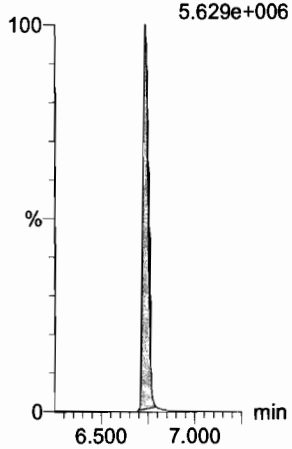
PFHxDA
F62:MRM of 2 channels,ES-
813.1 > 768.6
4.419e+006



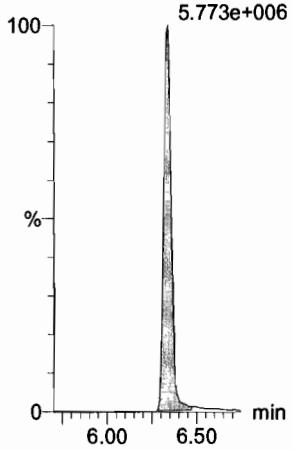
F62:MRM of 2 channels,ES-
813.1 > 219
3.826e+005



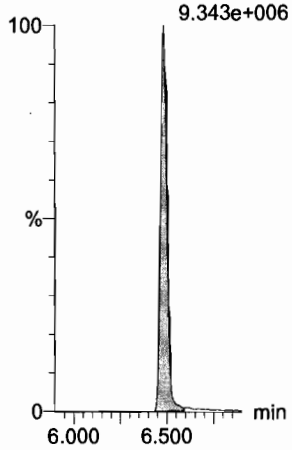
PFODA
F64:MRM of 1 channel,ES-
913.1 > 868.8
5.629e+006



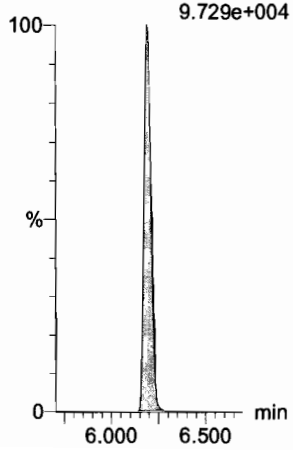
N-MeFOSE
F55:MRM of 1 channel,ES-
616.1 > 58.9
5.773e+006



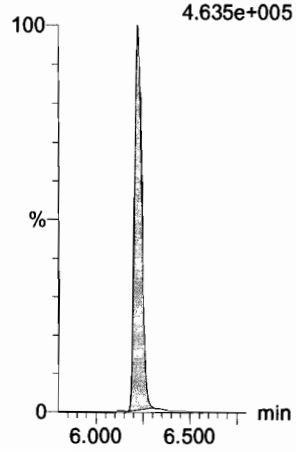
N-EtFOSE
F57:MRM of 1 channel,ES-
630.1 > 58.9
9.343e+006



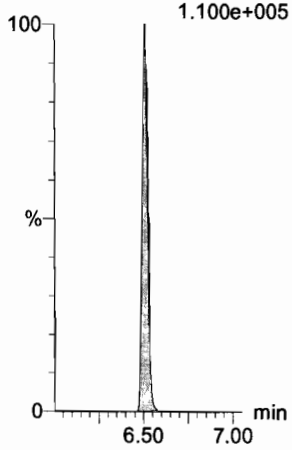
13C2-PFTeDA
F61:MRM of 2 channels,ES-
714.8 > 669.6
9.729e+004



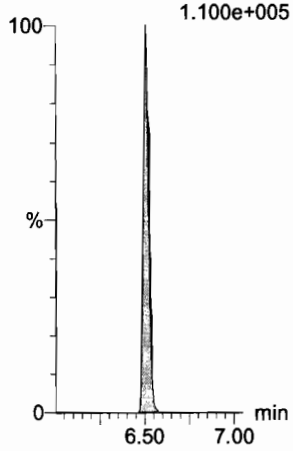
d5-N-ETFOSA
F43:MRM of 1 channel,ES-
531.1 > 168.9
4.635e+005



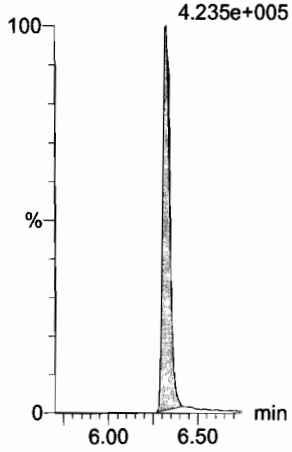
13C2-PFHxDA
F63:MRM of 1 channel,ES-
815 > 769.7
1.100e+005



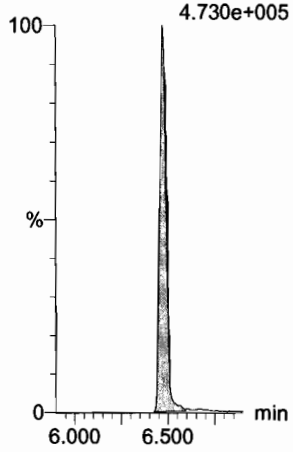
13C2-PFHxDA
F63:MRM of 1 channel,ES-
815 > 769.7
1.100e+005



d7-N-MeFOSE
F56:MRM of 1 channel,ES-
623.1 > 58.9
4.235e+005



d9-N-EtFOSE
F58:MRM of 1 channel,ES-
639.2 > 58.8
4.730e+005

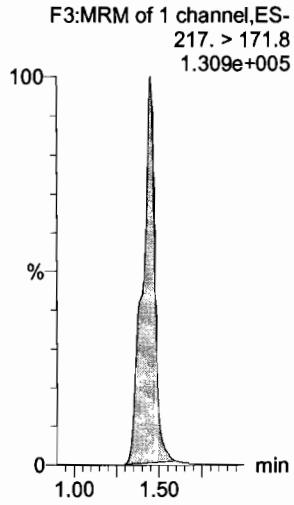


Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

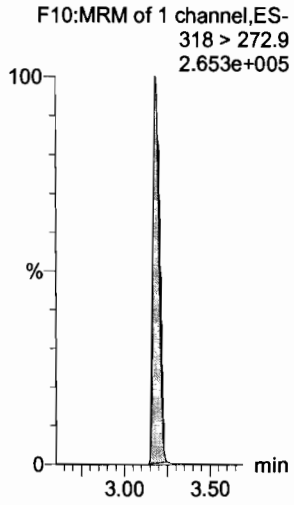
Last Altered: Tuesday, February 06, 2018 08:49:29 Pacific Standard Time
Printed: Tuesday, February 06, 2018 08:51:03 Pacific Standard Time

Name: 180205M1_11, Date: 05-Feb-2018, Time: 13:47:52, ID: ST180205M1-10 PFC CS7 18A3016, Description: PFC CS7 18A3016

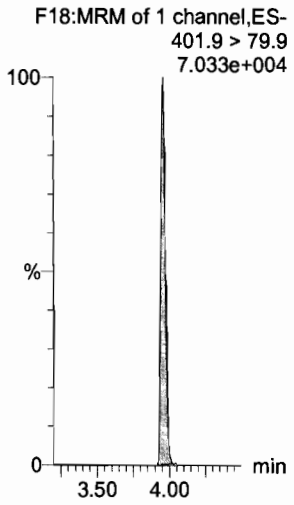
13C4-PFBA



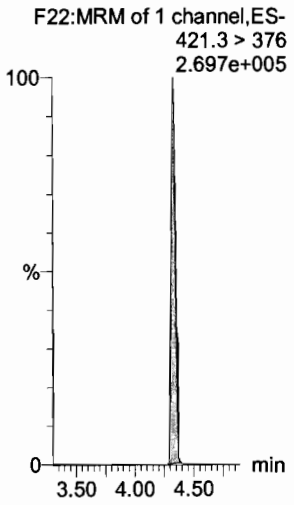
13C5-PFHxA



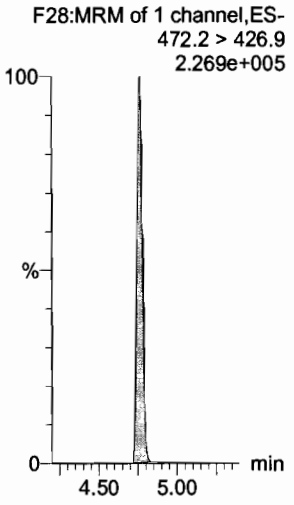
13C3-PFHxS



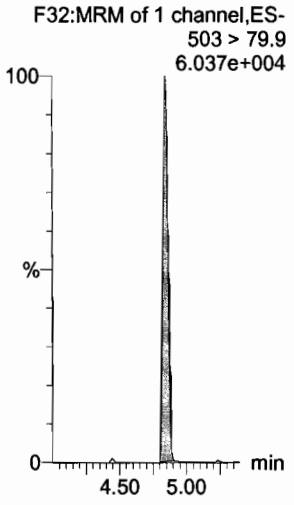
13C8-PFOA



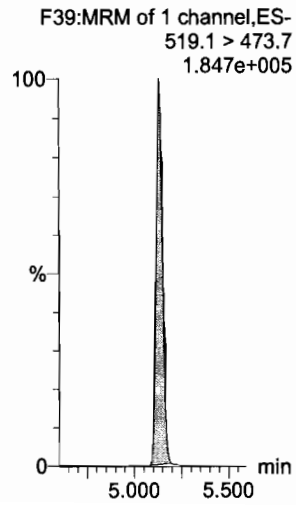
13C9-PFNA



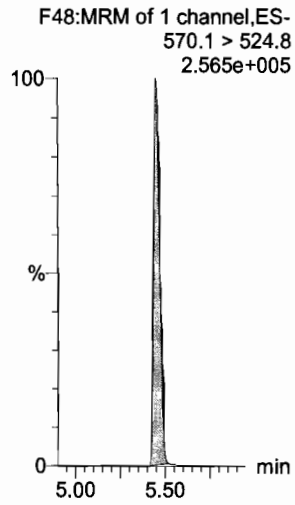
13C4-PFOS



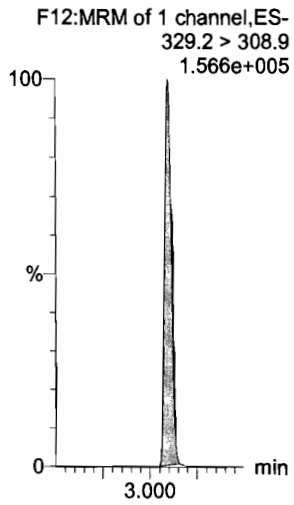
13C6-PFDA



13C7-PFUdA



13C2-4:2 FTS



Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-13.qld

Last Altered: Tuesday, February 06, 2018 09:20:47 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:21:07 Pacific Standard Time

(A) No SS available.

AC 2/6/18 JA. 02/06/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	9.22e3	9.21e3		1.0000	1.46	1.46	12.5	11.42	114.2
2	2	PFPeA	263.1 > 218.9	8.98e3	1.11e4		1.0000	2.42	2.42	10.2	10.43	104.3
3	3	PFBS	299.0 > 79.7	1.75e3	1.32e3		1.0000	2.69	2.69	16.6	8.779	87.8
4	4	4:2 FTS	327.2>307.2	1.77e3	1.32e3		1.0000	3.10	3.09	16.8	10.02	100.2
5	5	PFHxA	313.2 > 268.9	1.06e4	3.32e3		1.0000	3.19	3.19	16.0	10.57	105.7
6	6	PFPeS	349.1>80.1	2.23e3	1.32e3		1.0000	3.39	3.39	21.1	10.79	107.9
7	7	PFHpA	363.0 > 318.9	9.77e3	9.09e3		1.0000	3.81	3.81	13.4	10.83	108.3
8	8	L-PFHxS	398.9 > 79.6	1.22e3	1.12e3		1.0000	3.96	3.96	13.6	7.386	73.9
9	10	6:2 FTS	427.1 > 407	2.30e3	1.26e4		1.0000	4.28	4.27	2.29	8.870	88.7
10	11	L-PFOA	413 > 368.7	9.98e3	1.26e4		1.0000	4.33	4.33	9.94	10.41	104.1
11	13	PFHpS	449 > 80.0	2.00e3	3.09e3		1.0000	4.44	4.44	8.07	7.029	70.3
12	14	PFNA	463.0 > 418.8	1.08e4	1.19e4		1.0000	4.76	4.76	11.3	9.203	92.0
13	15	PFOSA	498.1 > 77.8	2.26e3	2.67e3		1.0000	4.83	4.82	10.6	9.956	99.6
14	16	L-PFOS	499 > 79.9	2.28e3	3.09e3		1.0000	4.84	4.84	9.21	8.246	82.5
15	18	PFDA	513 > 468.8	1.14e4	9.11e3		1.0000	5.14	5.13	15.7	12.68	126.8
16	19	8:2 FTS	527 > 506.9	2.53e3	1.26e4		1.0000	5.12	5.10	2.52	10.94	109.4
17	20	PFNS	549.1>80.1	2.00e3	3.09e3		1.0000	5.20	5.19	8.07	9.466	94.7
18	21	N-MeFOSAA	570.1 > 419	5.94e3	4.68e3		1.0000	5.29	5.28	15.9	11.76	117.6
19	22	N-EtFOSAA	584.2 > 419	5.70e3	6.12e3		1.0000	5.45	5.44	11.6	10.91	109.1
20	23	PFUdA	563.0 > 518.9	1.01e4	1.24e4		1.0000	5.46	5.46	10.2	9.811	98.1
21	24	PFDS	598.8 > 80	2.43e3	8.45e3		1.0000	5.51	5.51	3.59	7.690	76.9
22	25	PFDoA	612.9 > 569.0	1.06e4	8.45e3		1.0000	5.74	5.74	15.7	10.30	103.0
23	26	N-MeFOSA	512.1 > 168.9		1.63e4		1.0000	5.84				(A)
24	27	PFTrDA	662.9 > 618.9	9.97e3	4.37e3		1.0000	5.98	5.98	28.5	7.257	72.6
25	28	PFTeDA	712.9 > 668.8	6.59e3	4.37e3		1.0000	6.20	6.20	18.9	8.597	86.0
26	29	N-EtFOSA	526.1 > 168.9		2.43e4		1.0000	6.22				(A)
27	30	PFHxDA	813.1 > 768.6		2.92e3		1.0000	6.51				
28	31	PFODA	913.1 > 868.8		2.92e3		1.0000	6.74				
29	32	N-MeFOSE	616.1 > 58.9		1.86e4		1.0000	6.31				
30	33	N-EtFOSE	630.1 > 58.9		1.94e4		1.0000	6.45				
31	34	13C2-PFHxA	216.1 > 171.8	9.21e3	1.08e4	0.876	1.0000	1.46	1.45	10.6	12.13	97

70-130

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-13.qld

Last Altered: Tuesday, February 06, 2018 09:20:47 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:21:07 Pacific Standard Time

Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.11e4	1.25e4	0.868	1.0000	2.42	2.42	11.1	12.79	102.3
33	36	13C3-PFBS	302. > 98.8	1.32e3	1.25e4	0.109	1.0000	2.69	2.69	1.32	12.13	97.0
34	37	13C2-PFHxA	315 > 269.8	3.32e3	1.25e4	0.694	1.0000	3.19	3.19	3.34	4.805	96.1
35	38	13C4-PFHpA	367.2 > 321.8	9.09e3	1.25e4	0.694	1.0000	3.81	3.81	9.12	13.14	105.1
36	39	18O2-PFHxS	403.0 > 102.6	1.12e3	3.14e3	0.350	1.0000	3.96	3.96	4.45	12.71	101.7
37	40	13C2-6:2 FTS	429.1 > 408.9	2.77e3	1.32e4	0.242	1.0000	4.28	4.27	2.62	10.83	86.6
38	41	13C2-PFOA	414.9 > 369.7	1.26e4	1.32e4	1.069	1.0000	4.33	4.33	11.9	11.11	88.9
39	42	13C5-PFNA	468.2 > 422.9	1.19e4	1.25e4	0.929	1.0000	4.76	4.76	11.9	12.83	102.7
40	43	13C8-PFOSA	506.1 > 77.7	2.67e3	1.17e4	0.226	1.0000	4.83	4.83	2.85	12.59	100.7
41	44	13C8-PFOS	507.0 > 79.9	3.09e3	3.19e3	1.041	1.0000	4.84	4.85	12.1	11.63	93.1
42	45	13C2-PFDA	515.1 > 469.9	9.11e3	9.59e3	1.217	1.0000	5.14	5.13	11.9	9.747	78.0
43	46	13C2-8:2 FTS	529.1 > 508.7	1.79e3	1.25e4	0.131	1.0000	5.12	5.11	1.80	13.70	109.6
44	47	d3-N-MeFOSAA	573.3 > 419	4.68e3	1.17e4	0.432	1.0000	5.29	5.28	4.98	11.53	92.2
45	48	d5-N-EtFOSAA	589.3 > 419	6.12e3	1.17e4	0.476	1.0000	5.45	5.44	6.53	13.71	109.7
46	49	13C2-PFUdA	565 > 519.8	1.24e4	1.17e4	0.969	1.0000	5.46	5.45	13.2	13.65	109.2
47	50	13C2-PFDoA	615.0 > 569.7	8.45e3	1.17e4	0.605	1.0000	5.74	5.74	9.01	14.89	119.1
48	51	d3-N-MeFOSA	515.2 > 168.9	1.63e4	1.17e4	0.116	1.0000	5.84	5.86	17.4	150.5	100.3
49	52	13C2-PFTeDA	714.8 > 669.6	4.37e3	1.17e4	0.331	1.0000	6.20	6.20	4.66	14.07	112.5
50	53	d5-N-ETFOSA	531.1 > 168.9	2.43e4	1.17e4	0.171	1.0000	6.22	6.23	25.9	151.3	100.9
51	54	13C2-PFHxDA	815 > 769.7	2.92e3	1.17e4	0.577	1.0000	6.51	6.51	3.12	5.400	108.0
52	55	d7-N-MeFOSE	623.1 > 58.9	1.86e4	1.17e4	0.152	1.0000	6.31	6.33	19.9	130.9	87.3
53	56	d9-N-EtFOSE	639.2 > 58.8	1.94e4	1.17e4	0.142	1.0000	6.45	6.48	20.7	145.5	97.0
54	57	13C4-PFBA	217. > 171.8	1.08e4	1.08e4	1.000	1.0000	1.46	1.45	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.25e4	1.25e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.14e3	3.14e3	1.000	1.0000	3.96	3.96	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.32e4	1.32e4	1.000	1.0000	4.33	4.33	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.25e4	1.25e4	1.000	1.0000	5.76	4.76	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	3.19e3	3.19e3	1.000	1.0000	4.84	4.84	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	9.59e3	9.59e3	1.000	1.0000	5.14	5.13	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.17e4	1.17e4	1.000	1.0000	5.46	5.45	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	2.98e3	1.25e4	0.287	1.0000	3.10	3.10	2.99	10.44	83.5

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-13.qld

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Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

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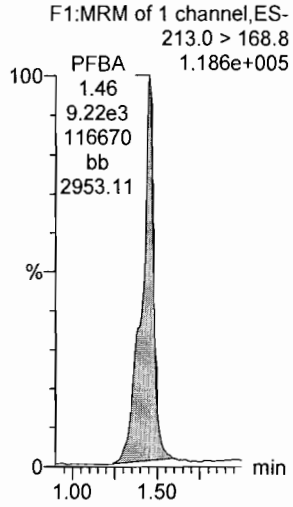

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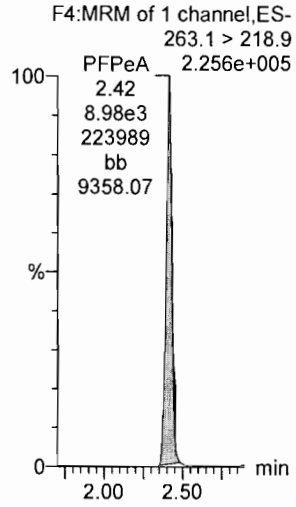

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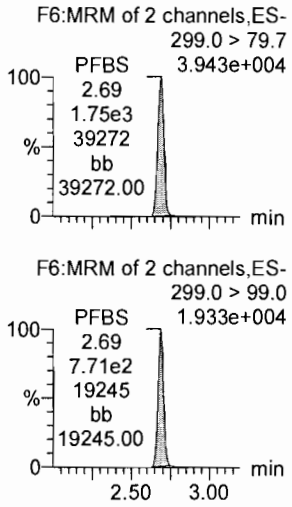

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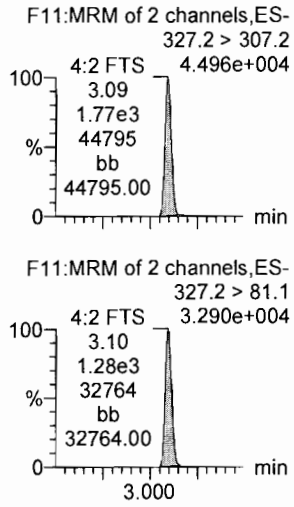

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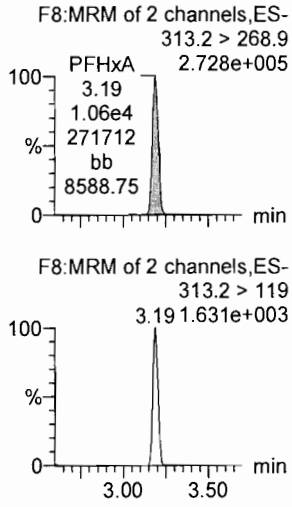

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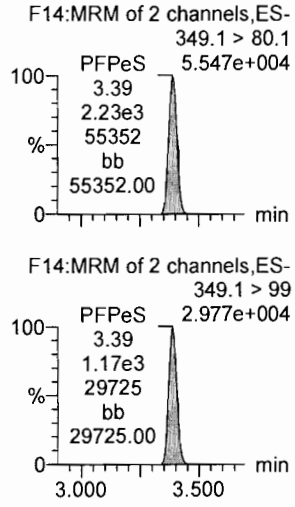

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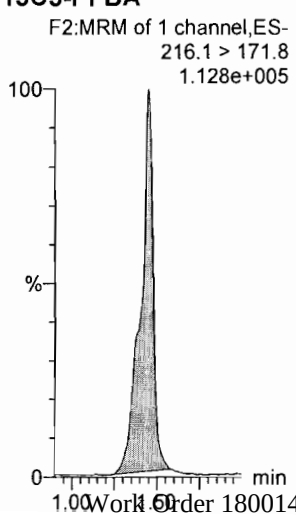

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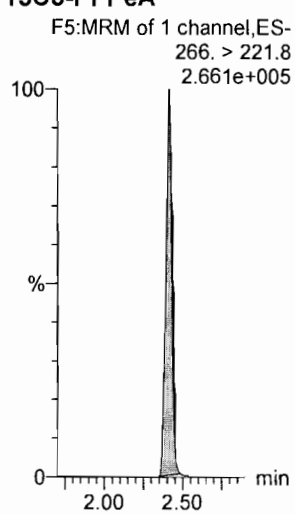

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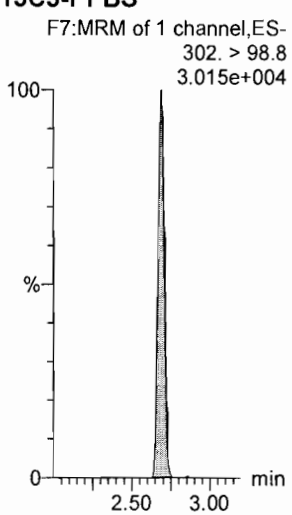

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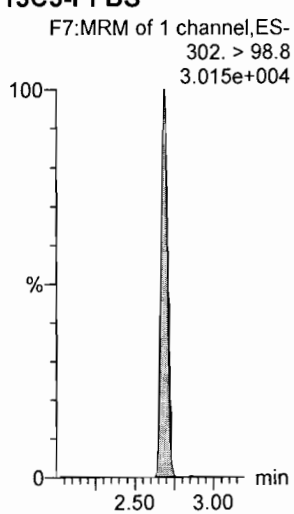

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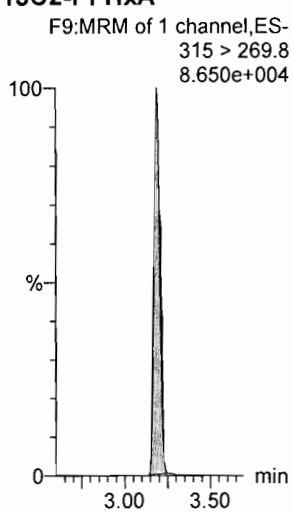

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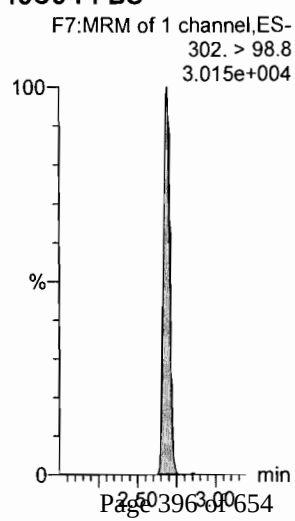

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Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

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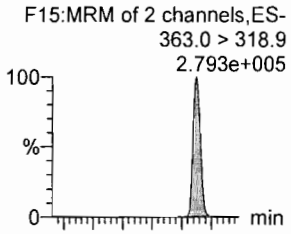
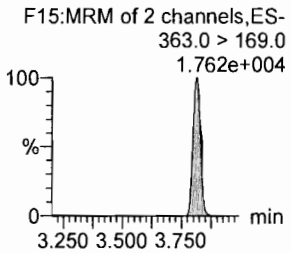
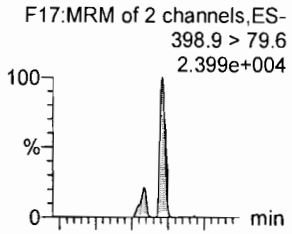
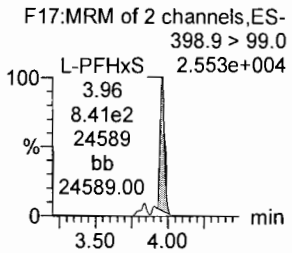




L-PFHxS





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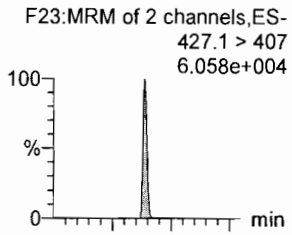

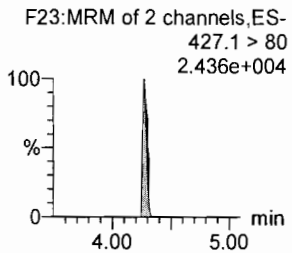

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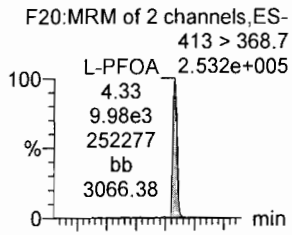

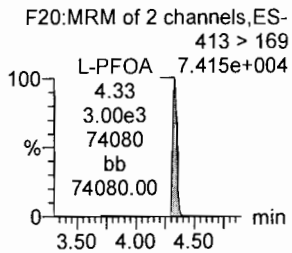

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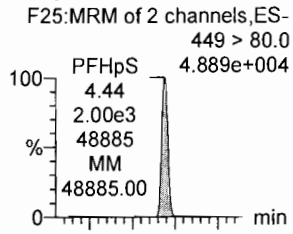

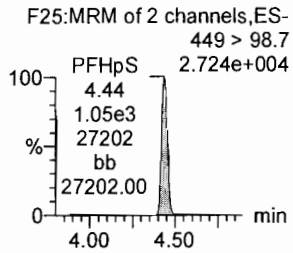

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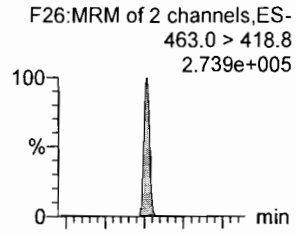

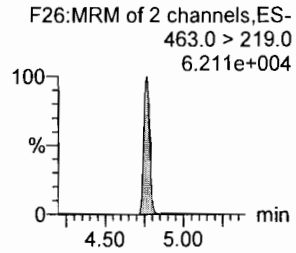

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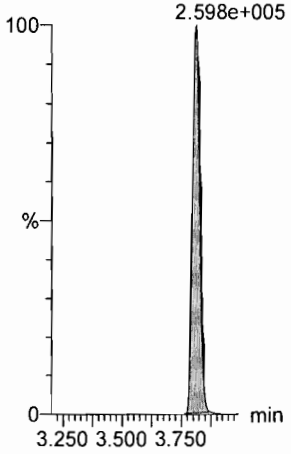

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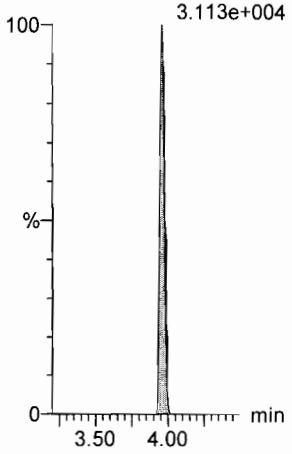

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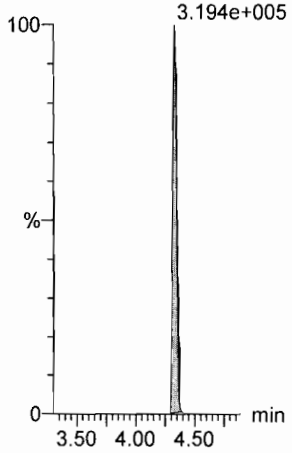

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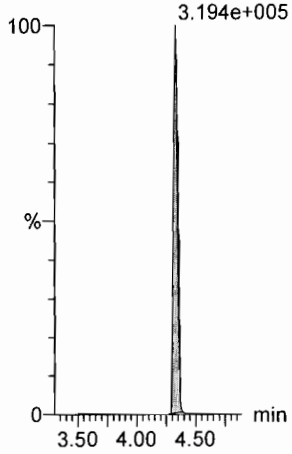

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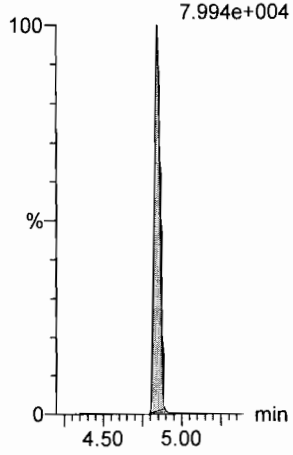

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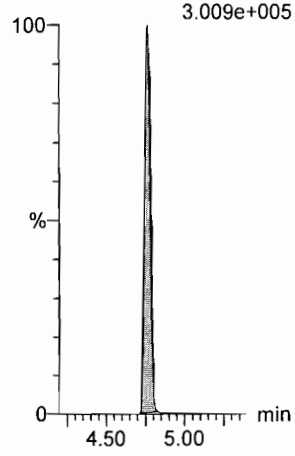

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Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

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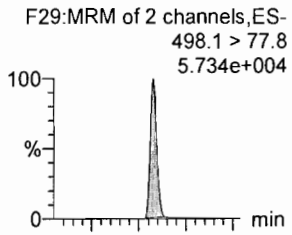

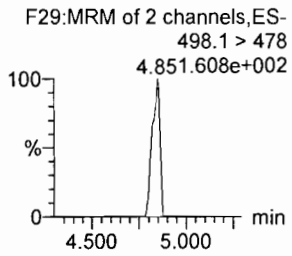

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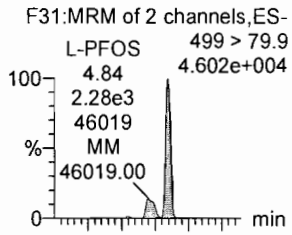

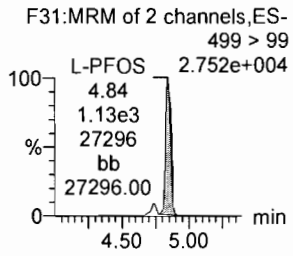

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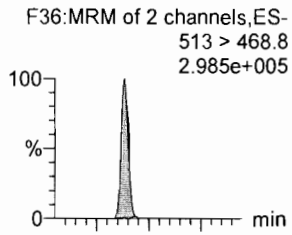

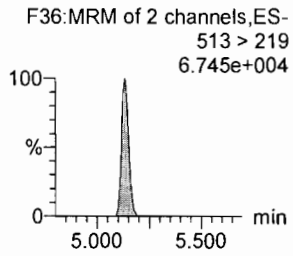

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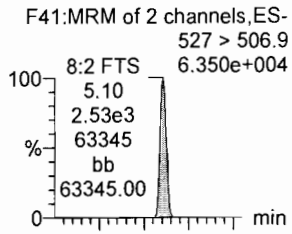

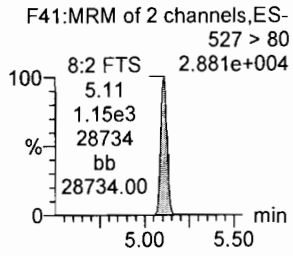

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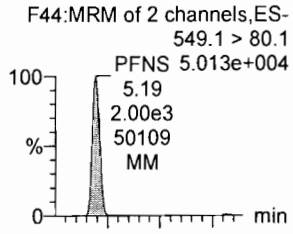

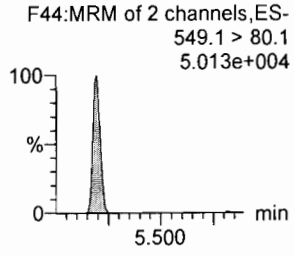

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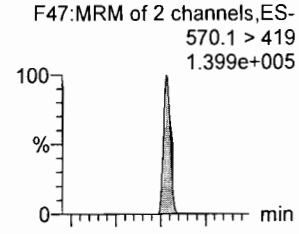
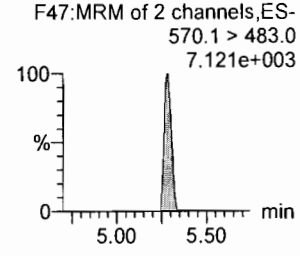
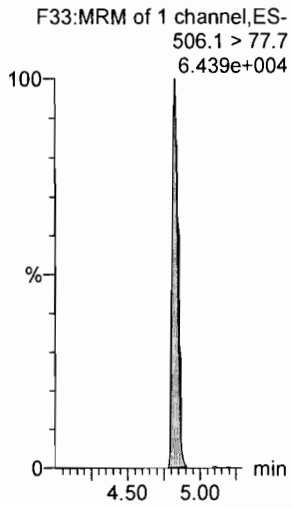




13C8-PFOSA



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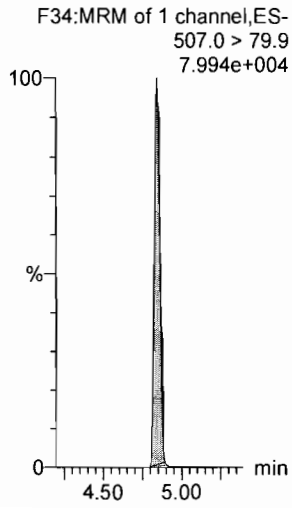
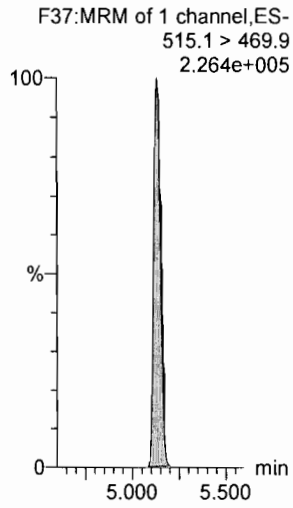


13C2-PFDA



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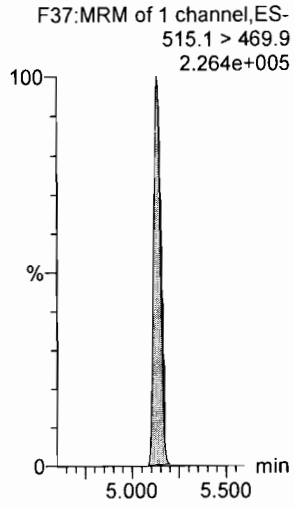

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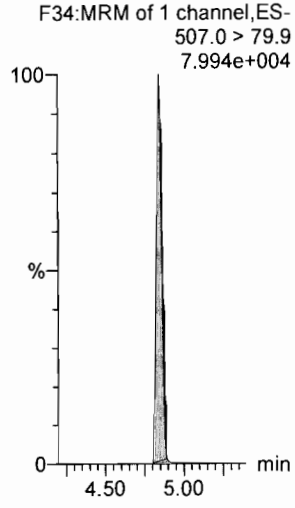
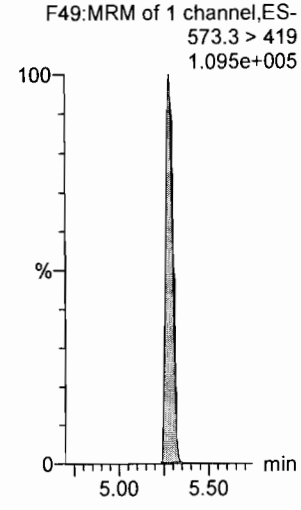


d3-N-MeFOSAA



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Printed: Tuesday, February 06, 2018 09:21:07 Pacific Standard Time

Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

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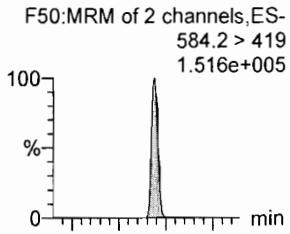
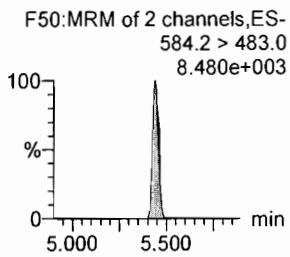
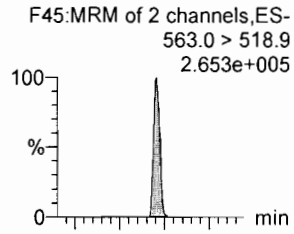
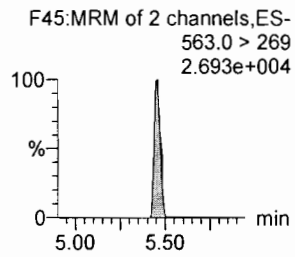




PFUdA





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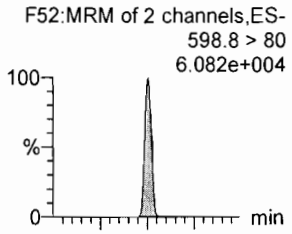

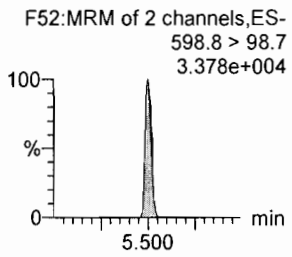

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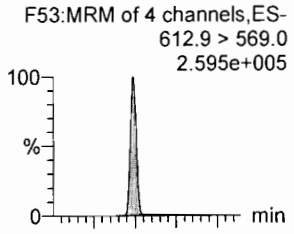

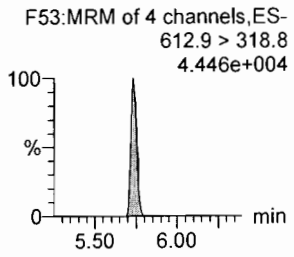

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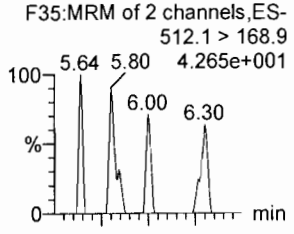
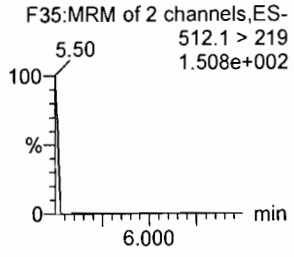
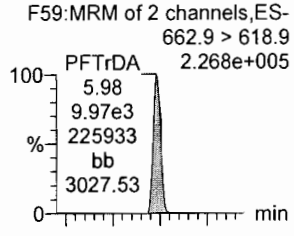
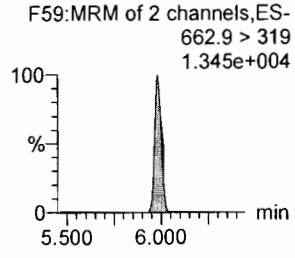


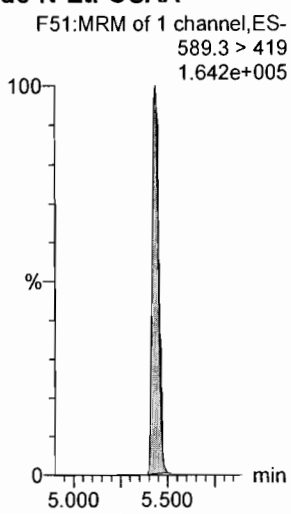


PFTrDA

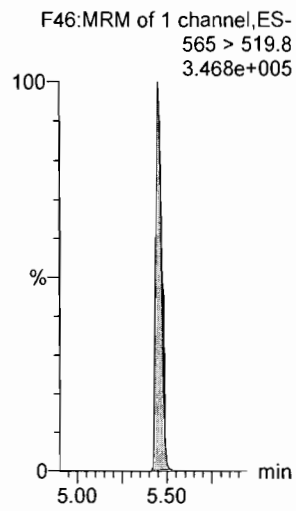




d5-N-EtFOSAA



13C2-PFUdA



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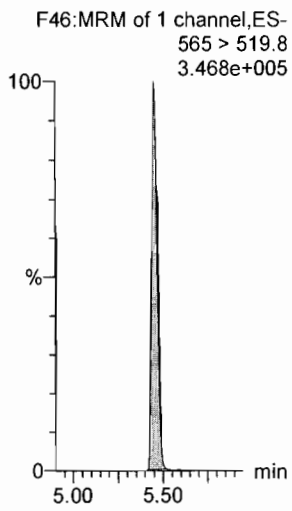
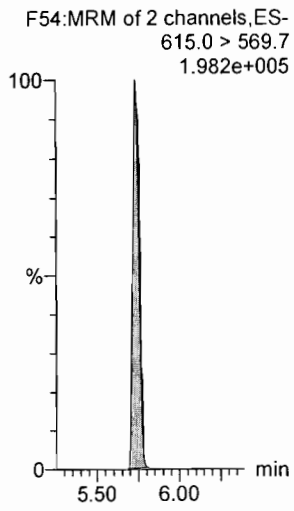


13C2-PFDoA



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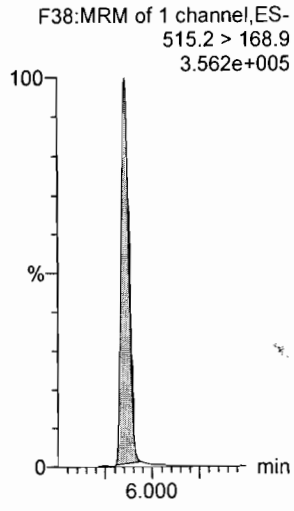

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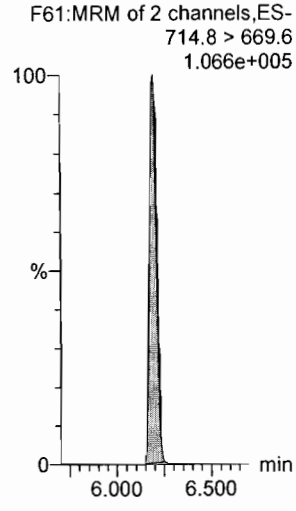

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Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

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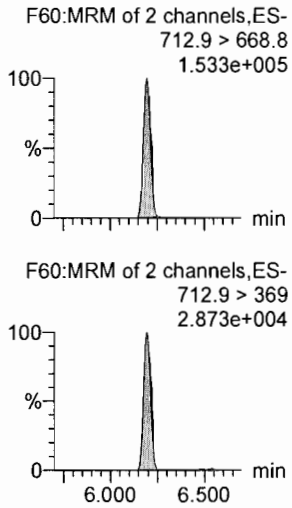

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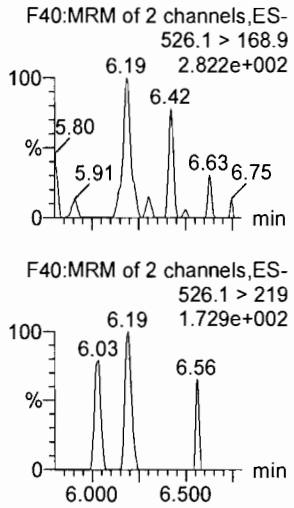
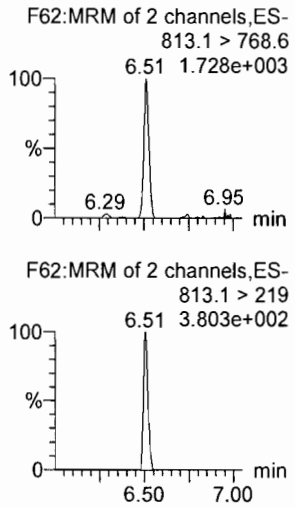
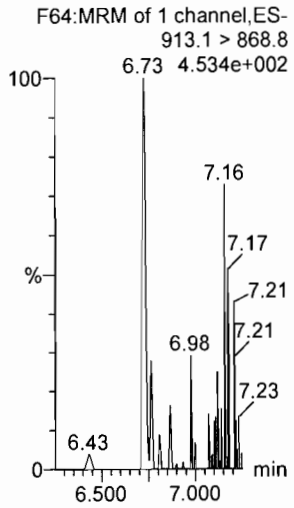


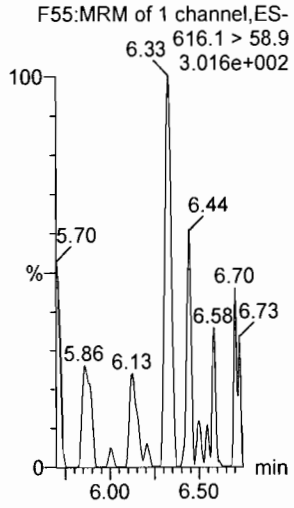
PFHxDA



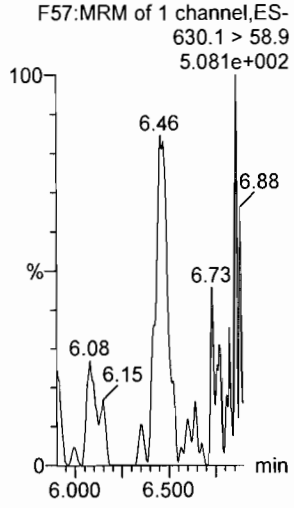
PFODA



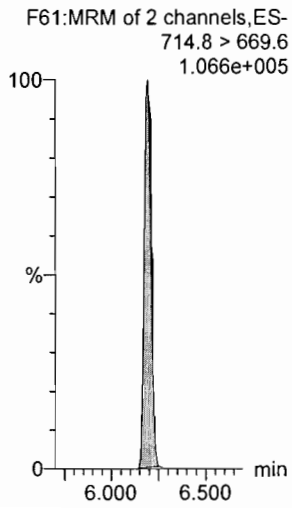
N-MeFOSE



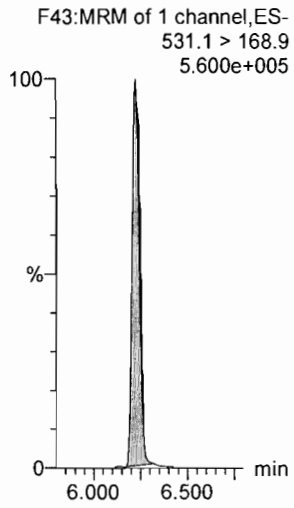
N-EtFOSE



13C2-PFTeDA



d5-N-ETFOSA



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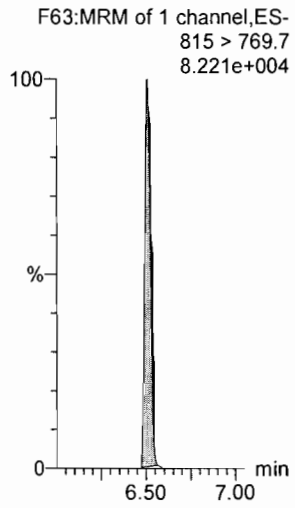

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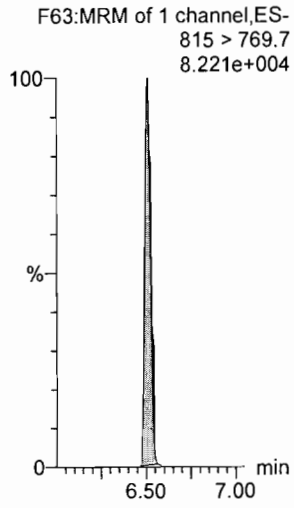
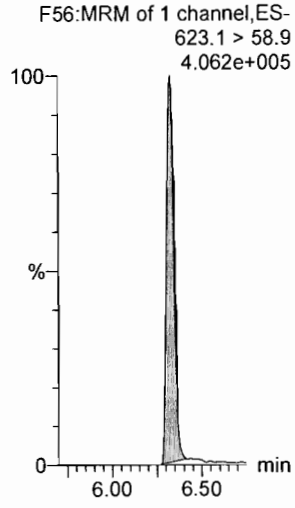


d7-N-MeFOSE



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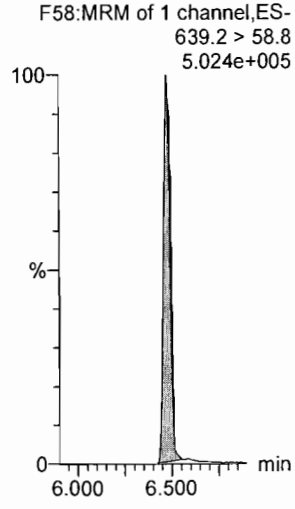

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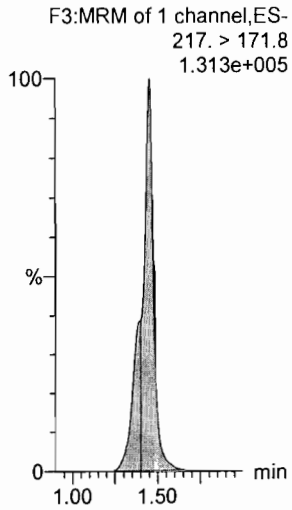

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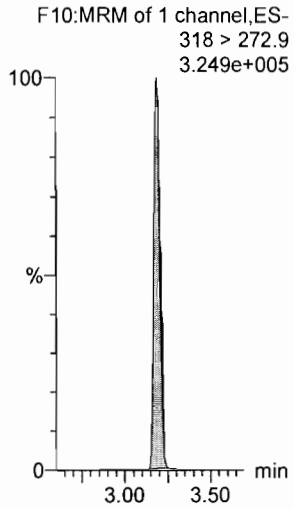
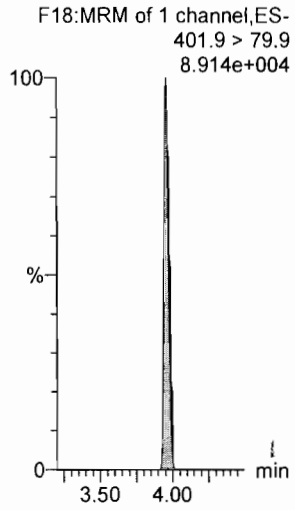
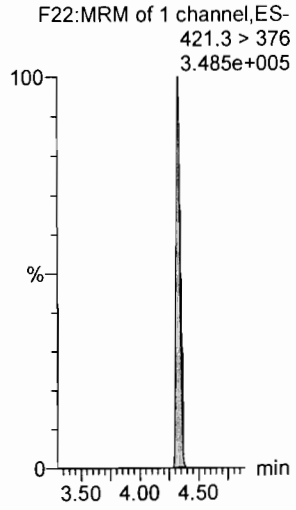


13C3-PFHxS



13C8-PFOA



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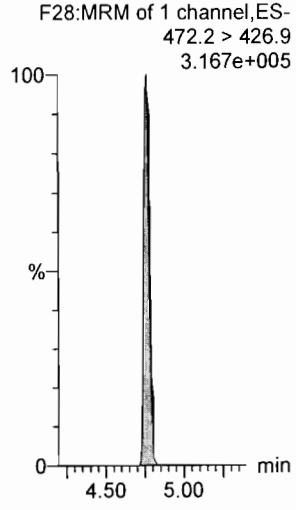
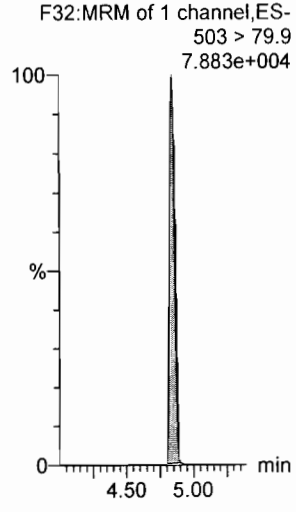


13C4-PFOS



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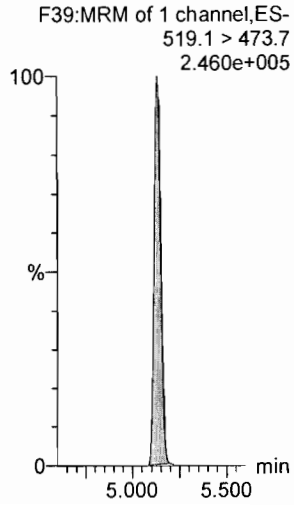
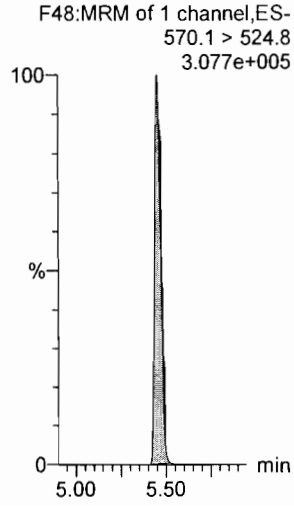
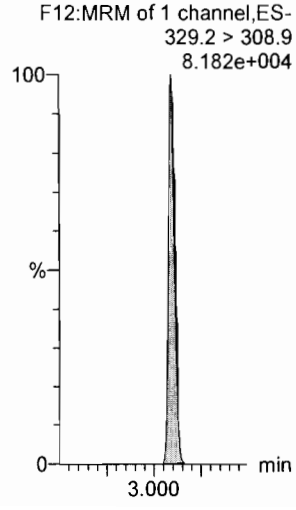


13C7-PFUdA



13C2-4:2 FTS



Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-12.qld

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Printed: Tuesday, February 06, 2018 09:17:10 Pacific Standard Time

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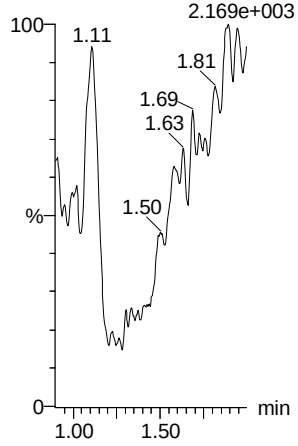
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180205M1_12, Date: 05-Feb-2018, Time: 13:59:22, ID: IPA, Description: IPA

PFBA



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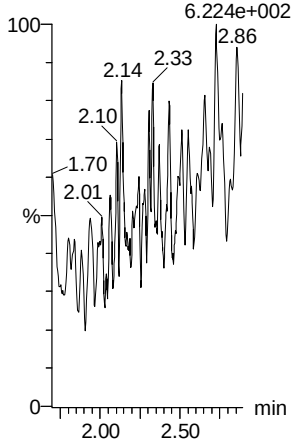

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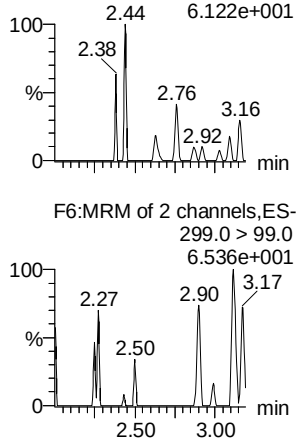

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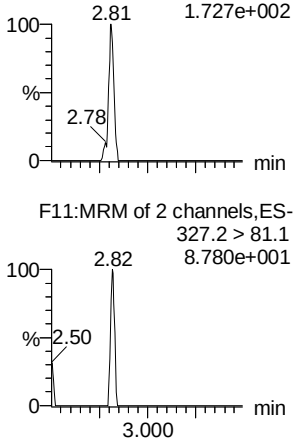
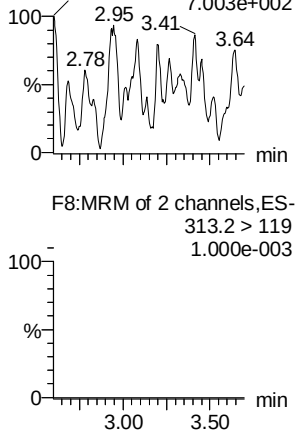
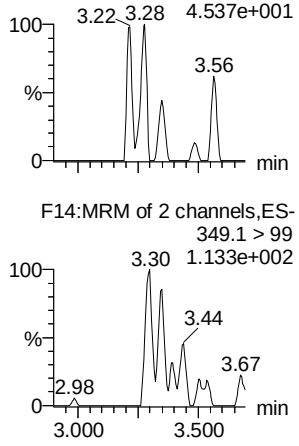


PFHxA



PFPeS



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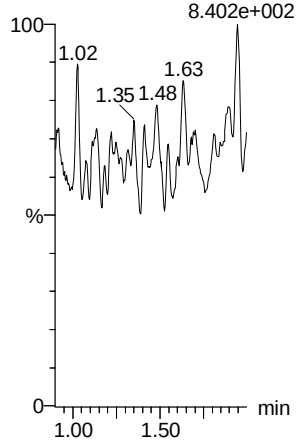

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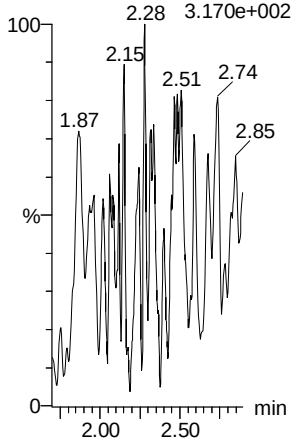

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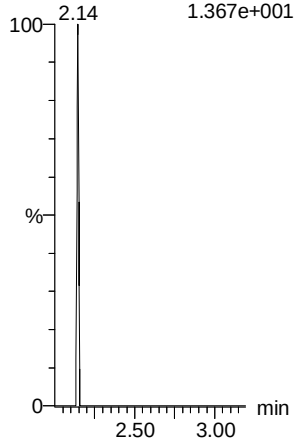

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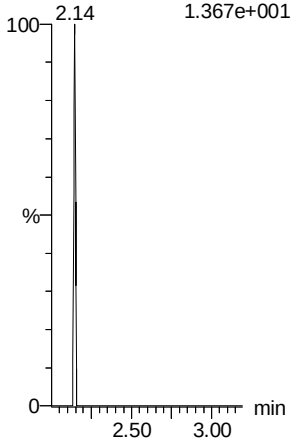

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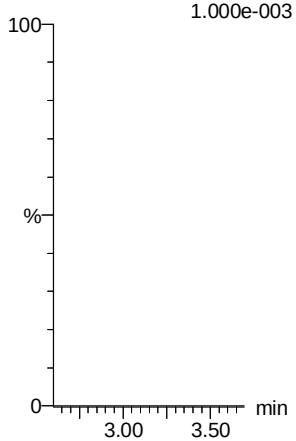

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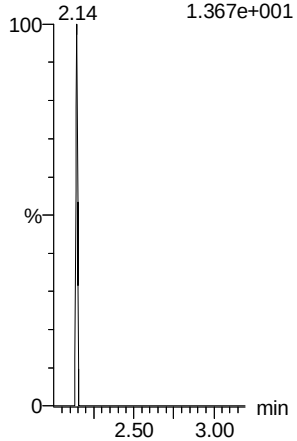

AD 2/6/2018

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-12.qld

Last Altered: Tuesday, February 06, 2018 09:16:38 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:17:10 Pacific Standard Time

Name: 180205M1_12, Date: 05-Feb-2018, Time: 13:59:22, ID: IPA, Description: IPA

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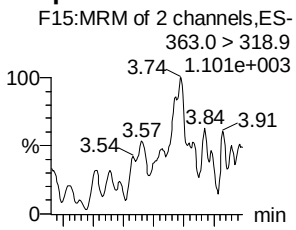

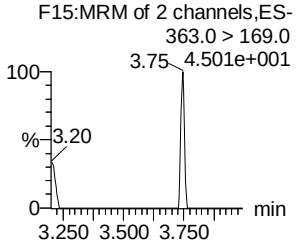

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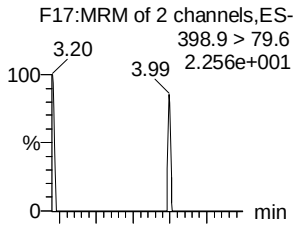
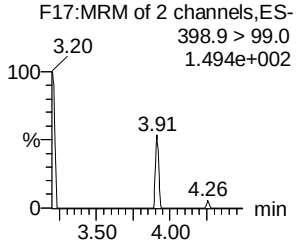
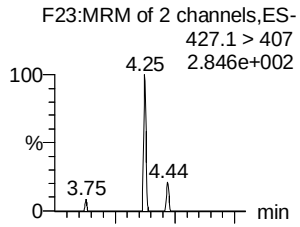
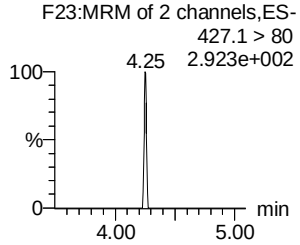




6:2 FTS





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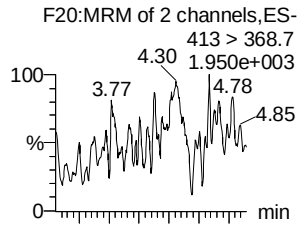

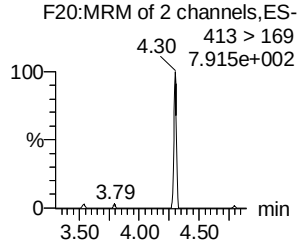

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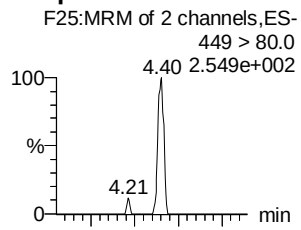

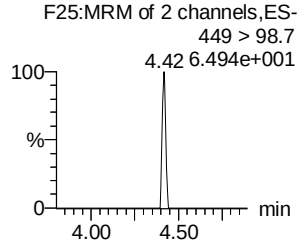

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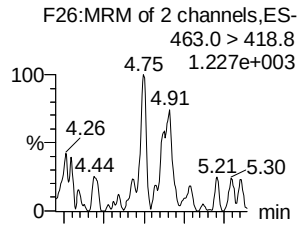
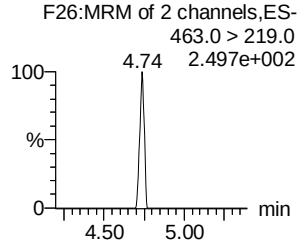
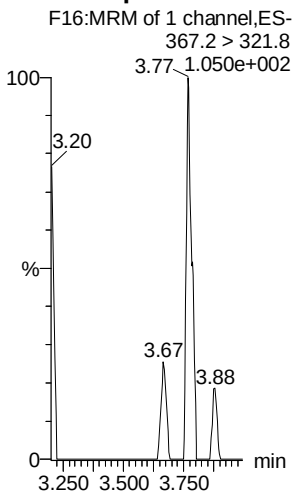
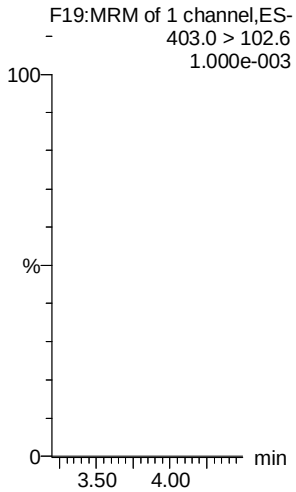




13C4-PFHpA



18O2-PFHxS



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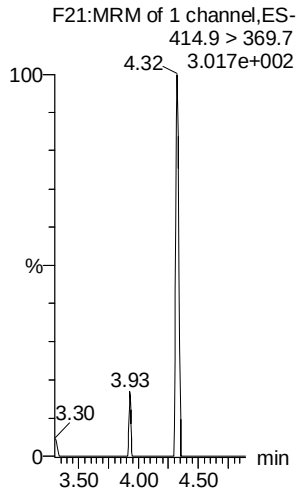

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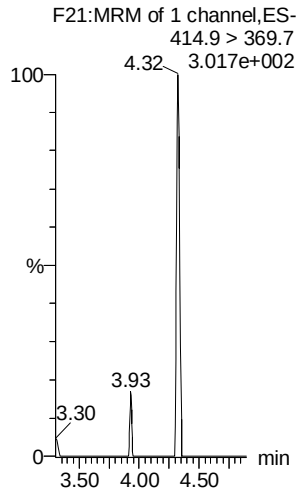
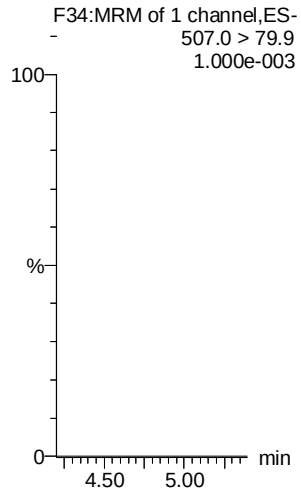


13C8-PFOS



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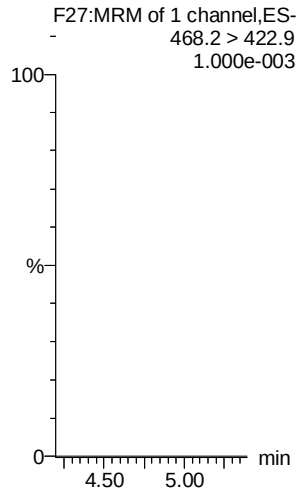


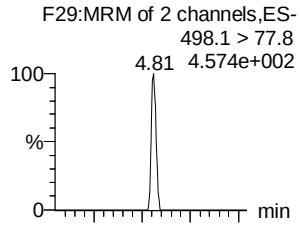
AD 2/6/2018

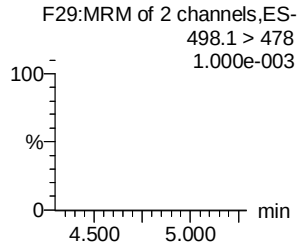
Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-12.qld

Last Altered: Tuesday, February 06, 2018 09:16:38 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:17:10 Pacific Standard Time

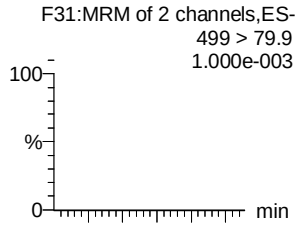
Name: 180205M1_12, Date: 05-Feb-2018, Time: 13:59:22, ID: IPA, Description: IPA

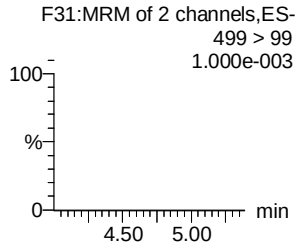
PFOSA



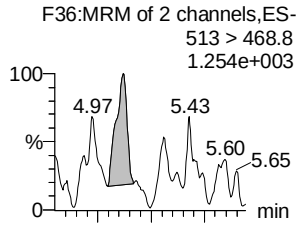


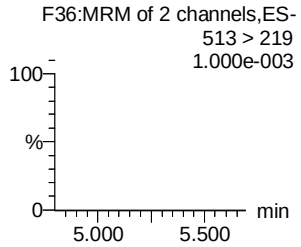
L-PFOS



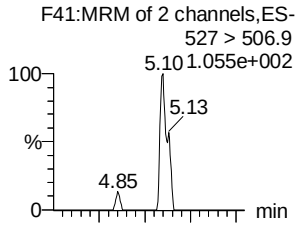


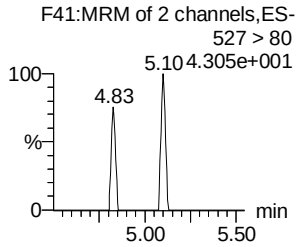
PFDA





8:2 FTS





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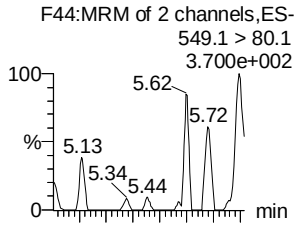

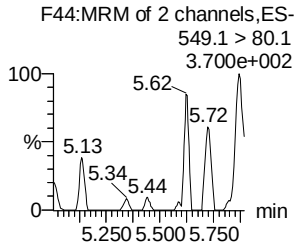

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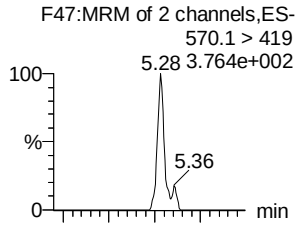
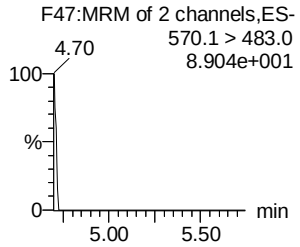
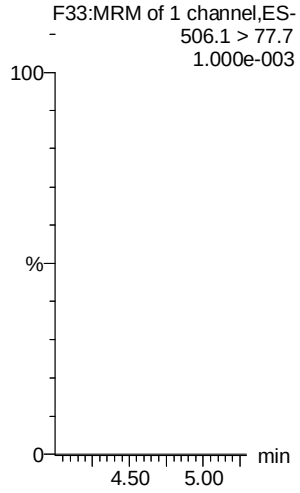




13C8-PFOSA



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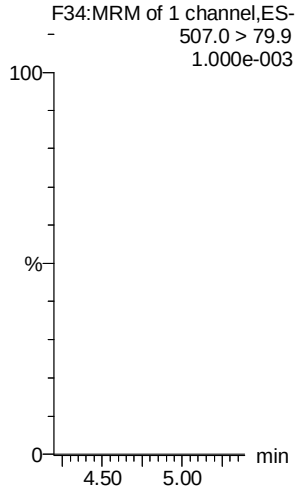

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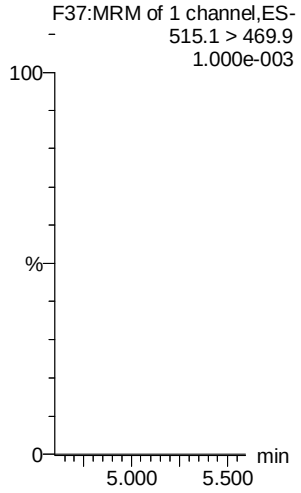

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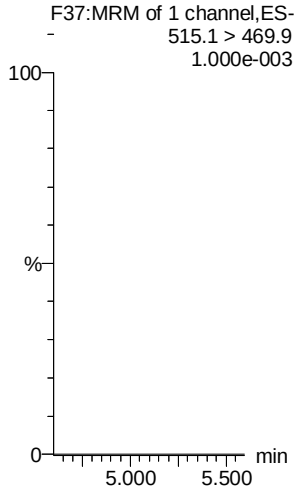
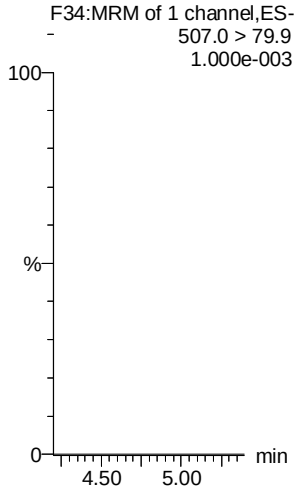
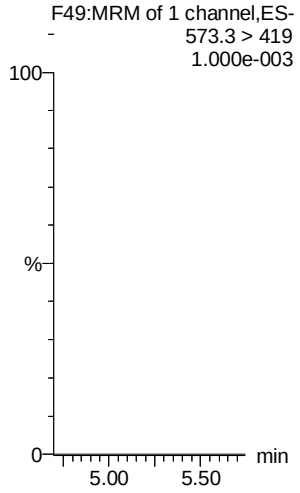


13C8-PFOS



d3-N-MeFOSAA



AD 2/6/2018

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-12.qld

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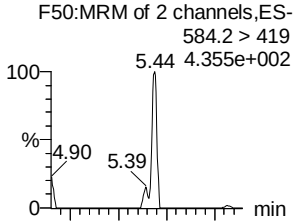
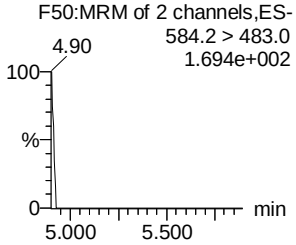
Printed: Tuesday, February 06, 2018 09:17:10 Pacific Standard Time

Name: 180205M1_12, Date: 05-Feb-2018, Time: 13:59:22, ID: IPA, Description: IPA

N-EtFOSAA





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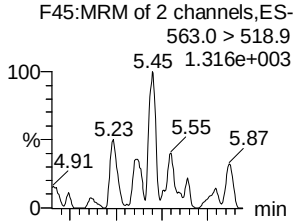

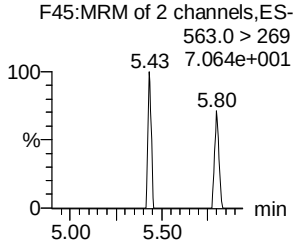

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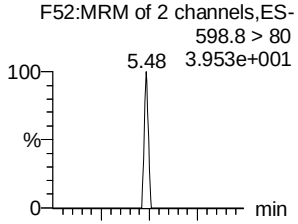
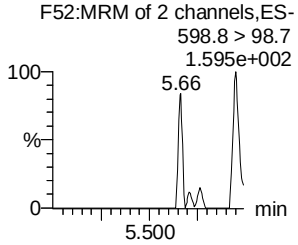
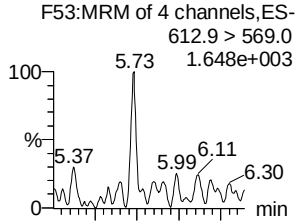
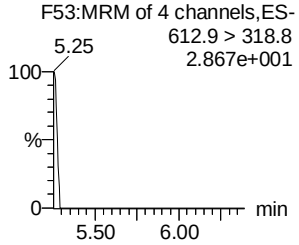


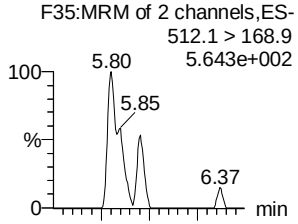


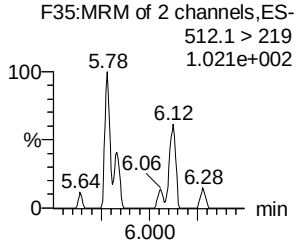
PFDoA



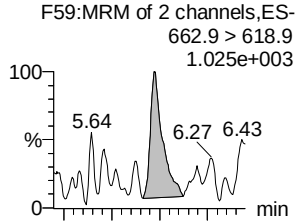


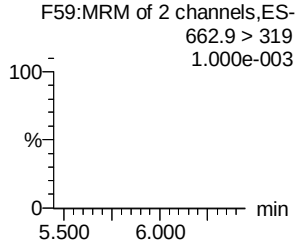
N-MeFOSA



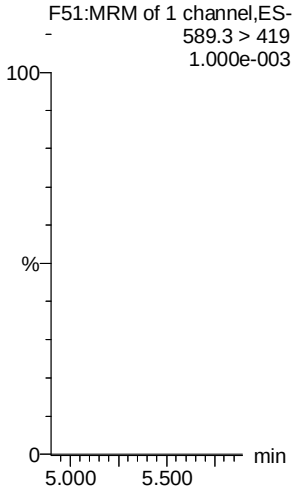


PFTrDA





d5-N-EtFOSAA



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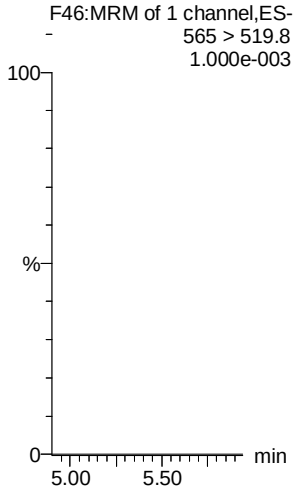

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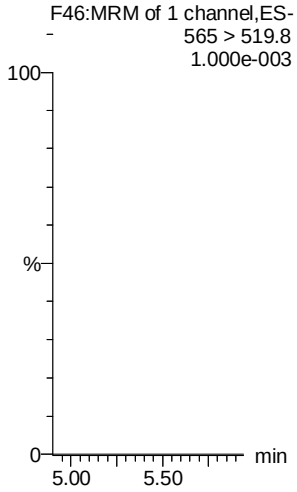

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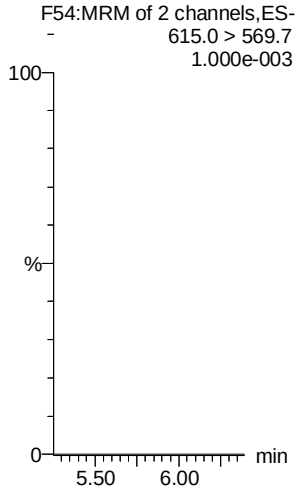

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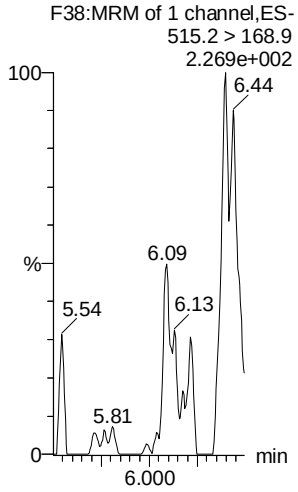

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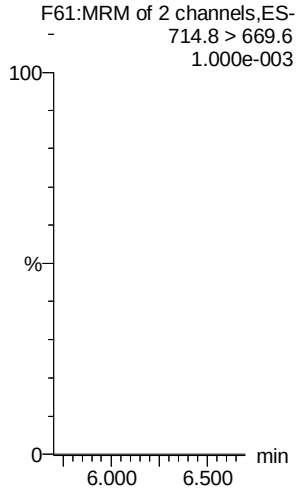

AD 2/6/2018

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Printed: Tuesday, February 06, 2018 09:17:10 Pacific Standard Time

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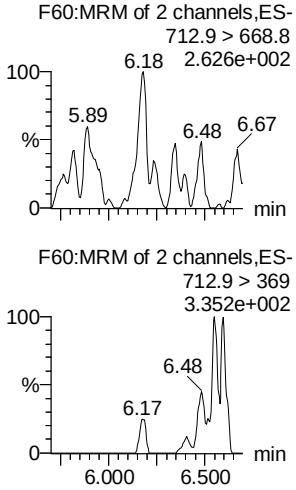

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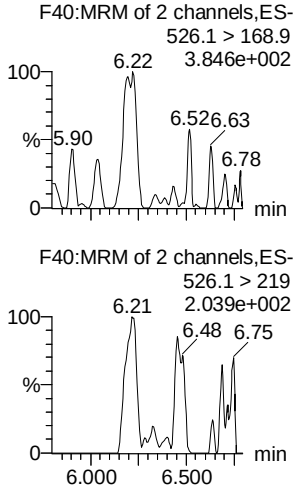

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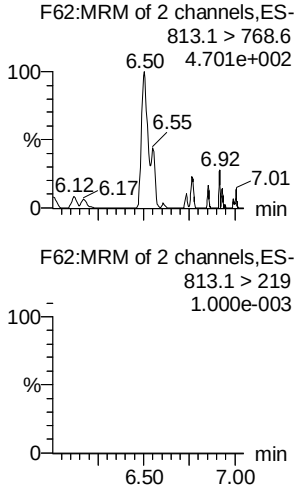

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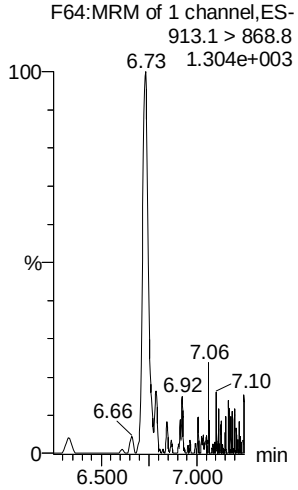

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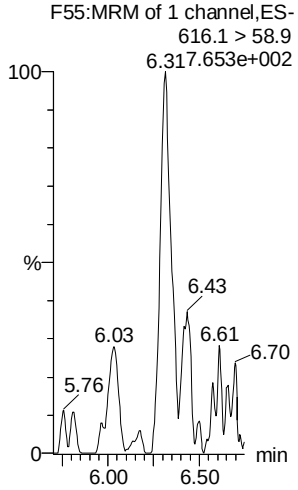

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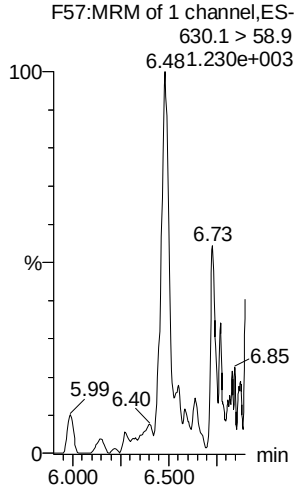

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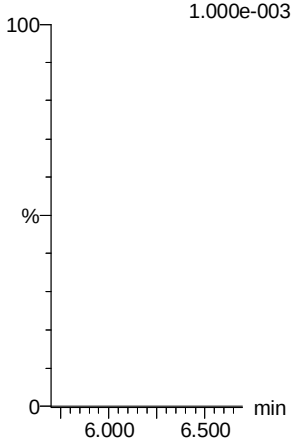

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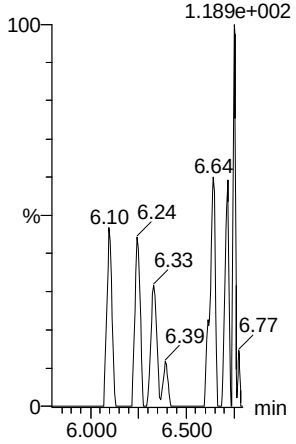

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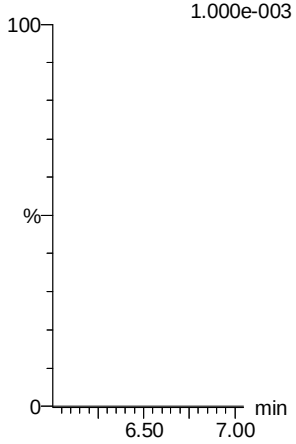

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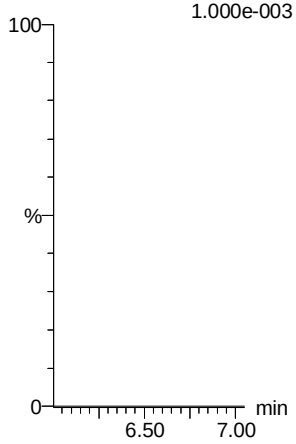

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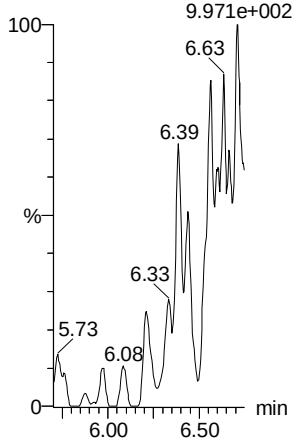

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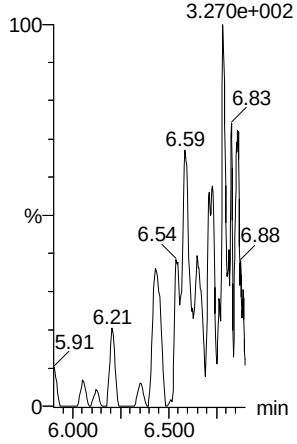

AD 2/6/2018

Vista Analytical Laboratory

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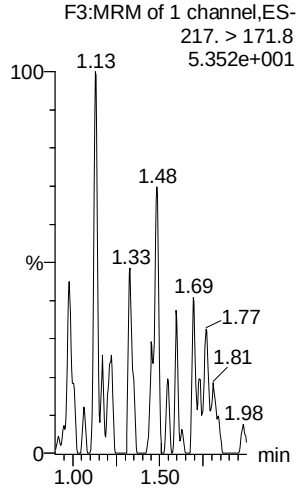

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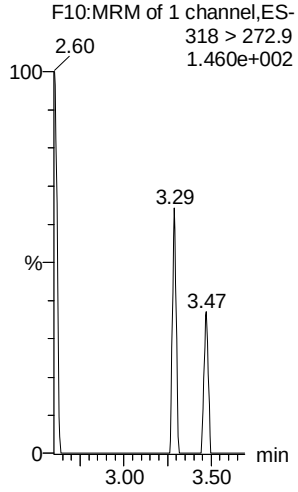
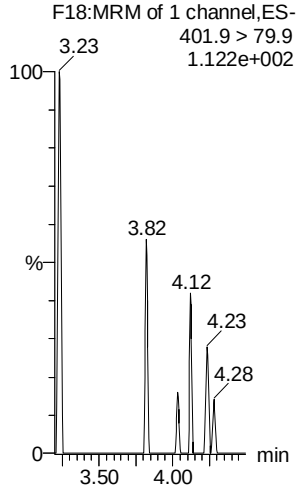
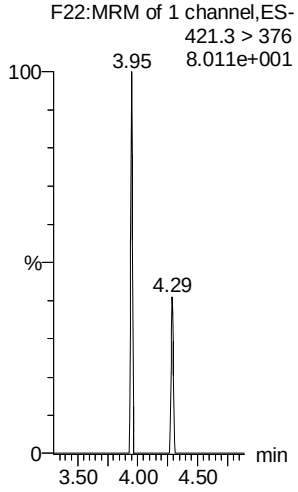


13C3-PFHxS



13C8-PFOA



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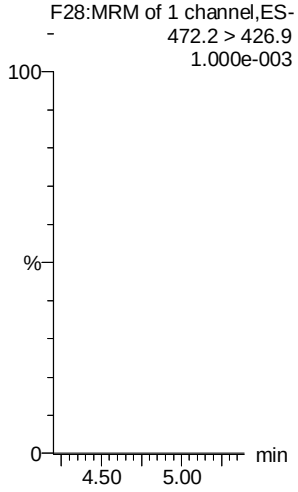
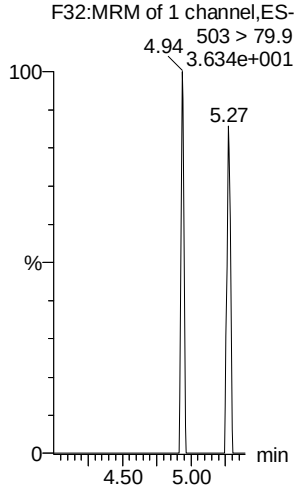


13C4-PFOS



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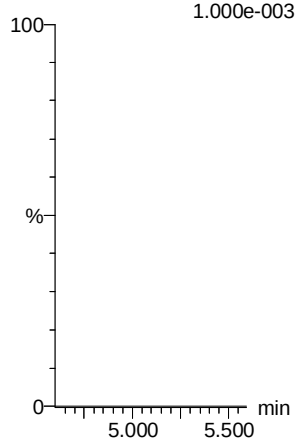

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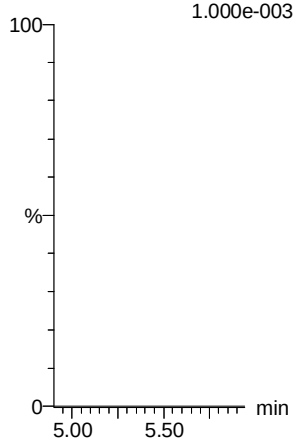
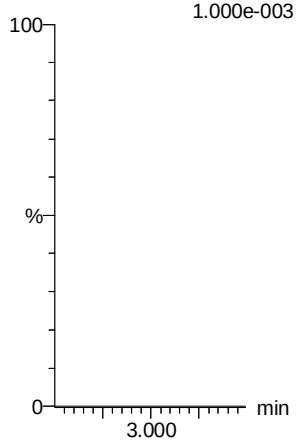


13C2-4:2 FTS



AD 2/6/2018

Analytical Standard Record

Vista Analytical Laboratory

17L2601

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
17L2310	13C2-4:2 FTS	23-Dec-17	** Vendor **	01-Sep-22	1.07
17L2311	13C2-PFHxDA	23-Dec-17	** Vendor **	13-Jul-22	0.4
17L2312	13C2-PFHxA	23-Dec-17	** Vendor **	27-Oct-22	0.4
17L2313	d5-N-EtFOSAA	23-Dec-17	** Vendor **	08-Nov-22	1
17L2314	d3-N-Me-FOSAA	23-Dec-17	** Vendor **	08-Nov-22	1
17L2315	13C3-PFBA	23-Dec-17	** Vendor **	27-May-21	1
17L2316	13C2-PFDA	23-Dec-17	** Vendor **	13-Jul-22	1
17L2317	13C2-8:2 FTS	23-Dec-17	** Vendor **	05-Jul-22	1.044
17L2318	13C2-6:2 FTS	23-Dec-17	** Vendor **	17-Feb-22	1.05
17L2319	13C2-PFUdA	23-Dec-17	** Vendor **	22-Nov-21	1
17L2320	13C2-PFTeDA	23-Dec-17	** Vendor **	30-Nov-22	1
17L2321	13C5-PFNA	23-Dec-17	** Vendor **	30-Sep-21	1
17L2322	13C2-PFDoA	23-Dec-17	** Vendor **	23-May-22	1
17L2323	13C4-PFHpA	23-Dec-17	** Vendor **	03-May-22	1
17L2324	13C3-PFBS	23-Dec-17	** Vendor **	24-May-22	1.076
17L2325	13C8-PFOS	23-Dec-17	** Vendor **	08-Nov-22	1.05
17L2326	18O2-PFHxS	23-Dec-17	** Vendor **	17-Feb-22	1.058
17L2327	13C8-FOSA-I	23-Dec-17	** Vendor **	11-Oct-22	1
17L2328	13C3-PFPeA	23-Dec-17	** Vendor **	20-Apr-22	1
17L2329	13C2-PFOA	23-Dec-17	** Vendor **	26-Oct-22	1

Description:	PFC - IS	Expires:	26-Dec-19
Standard Type:	Reagent	Prepared:	26-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	26-Dec-17 09:43 by INJ

Analyte	CAS Number	Concentration	Units
13C3-PFBA		1.25	ug/mL
13C2-6:2 FTS		1.25	ug/mL
13C2-8:2 FTS		1.25	ug/mL
13C2-PFDA		1.25	ug/mL
13C2-PFDoA		1.25	ug/mL
13C2-PFHxA		0.5	ug/mL
13C2-PFHxDA		0.5	ug/mL
13C2-PFOA		1.25	ug/mL
13C2-4:2 FTS		1.25	ug/mL
13C2-PFUnA		1.25	ug/mL
d5-EtFOSAA		1.25	ug/mL
13C3-PFBS		1.25	ug/mL
13C3-PFPeA		1.25	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

17L2601

Description:	PFC - IS	Expires:	26-Dec-19
Standard Type:	Reagent	Prepared:	26-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	26-Dec-17 09:43 by INJ

Analyte	CAS Number	Concentration	Units
13C4-PFHpA		1.25	ug/mL
13C5-PFNA		1.25	ug/mL
13C8-PFOS		1.25	ug/mL
13C8-PFOSA		1.25	ug/mL
18O2-PFHxS		1.25	ug/mL
d3-MeFOSAA		1.25	ug/mL
13C2-PFTeDA		1.25	ug/mL

17L2310

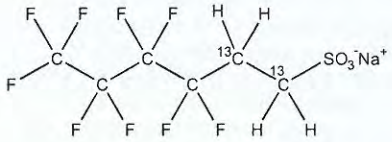
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS0817

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]hexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4H_4F_9SO_3Na$	**MOLECULAR WEIGHT:**	352.12
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt)	**SOLVENT(S):**	Methanol
	46.7 ± 2.3 µg/ml (M2-4:2FTS anion)		
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	09/01/2017		
EXPIRY DATE: (mm/dd/yyyy)	09/01/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/29/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2310

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

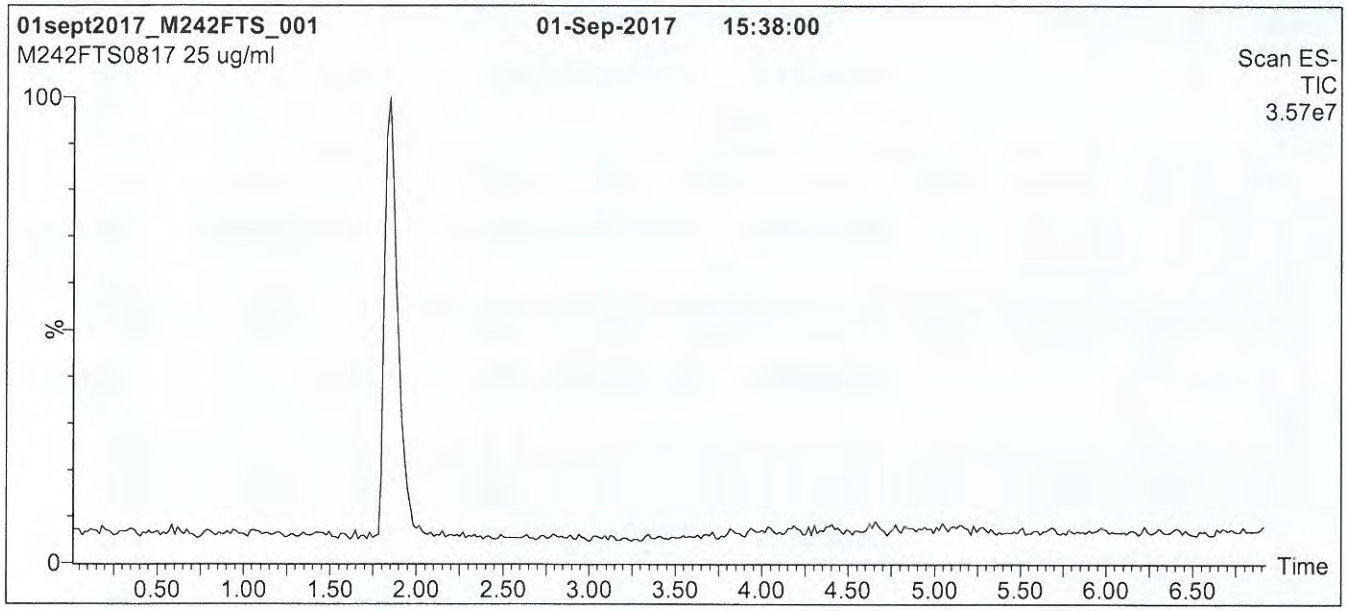
CALA

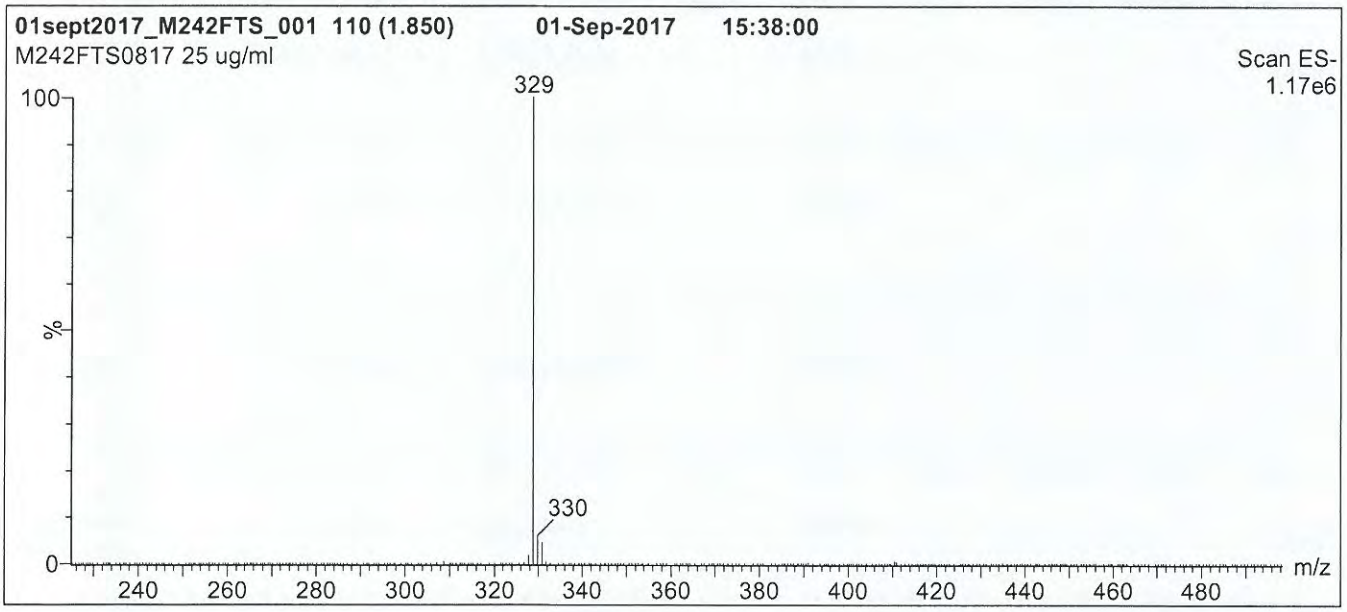
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L 2310

Figure 1: **M2-4:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min
and hold for 1 min before returning
to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

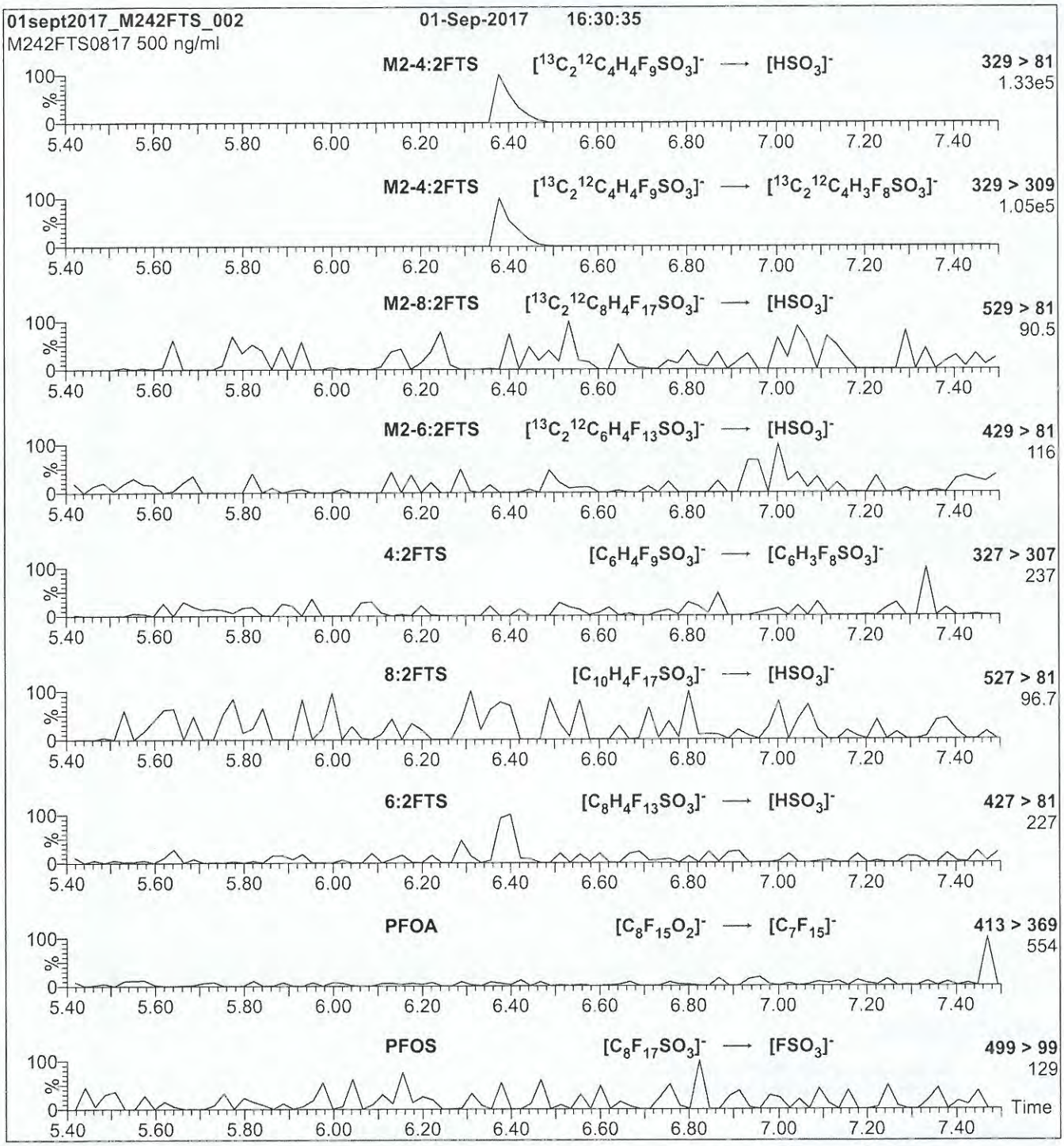
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1712310

Figure 2: **M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2-4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 25

17L2311

WELLINGTON LABORATORIES

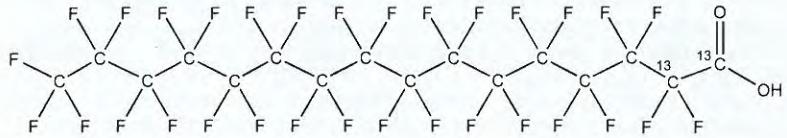
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFHxDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexadecanoic acid

LOT NUMBER: M2PFHxDA0717

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{14}HF_{31}O_2$	**MOLECULAR WEIGHT:**	816.11
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	07/13/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/13/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2311

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

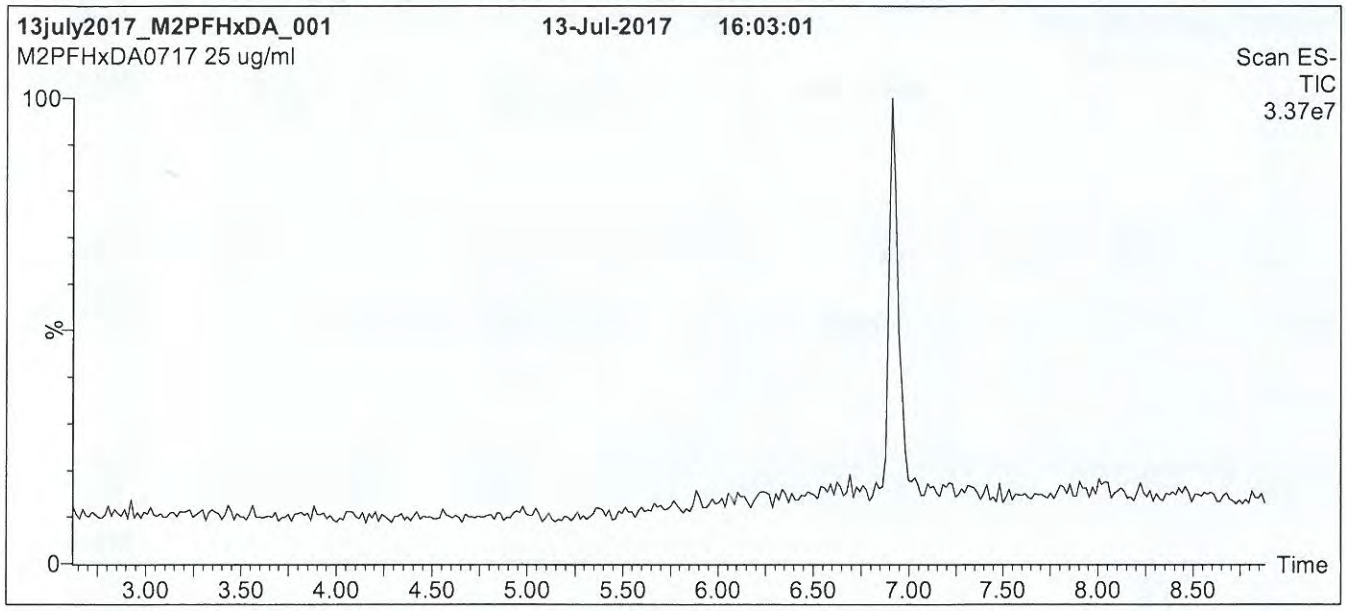
CALA

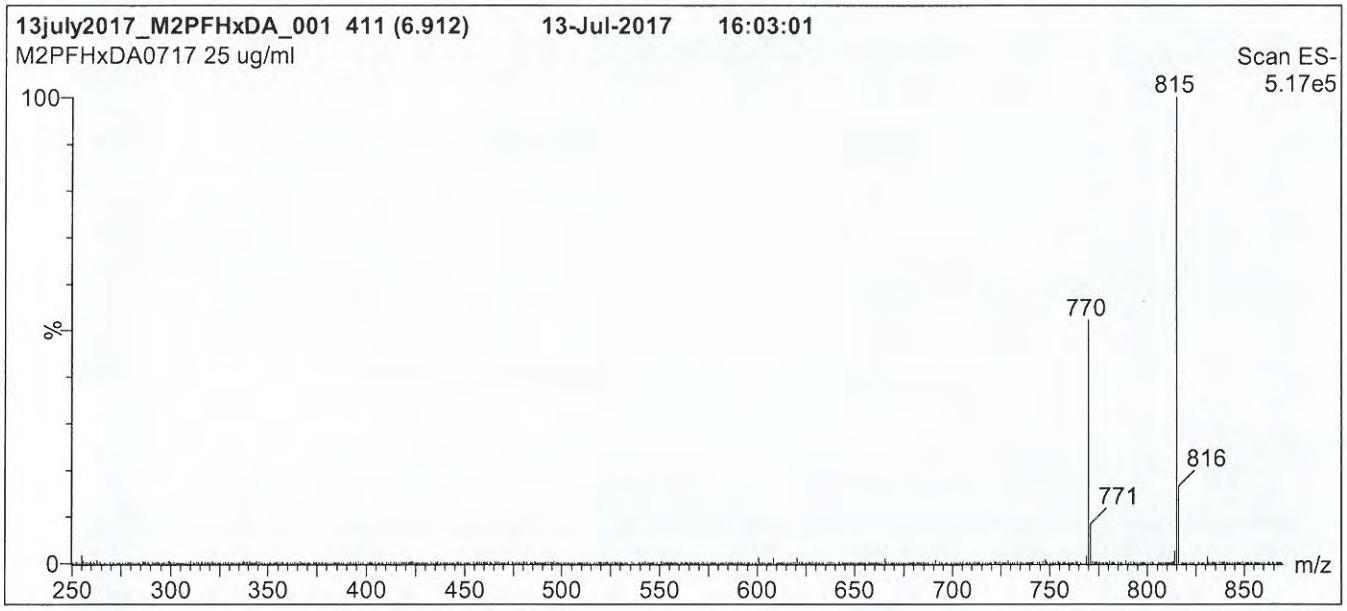
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2311

Figure 1: **M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

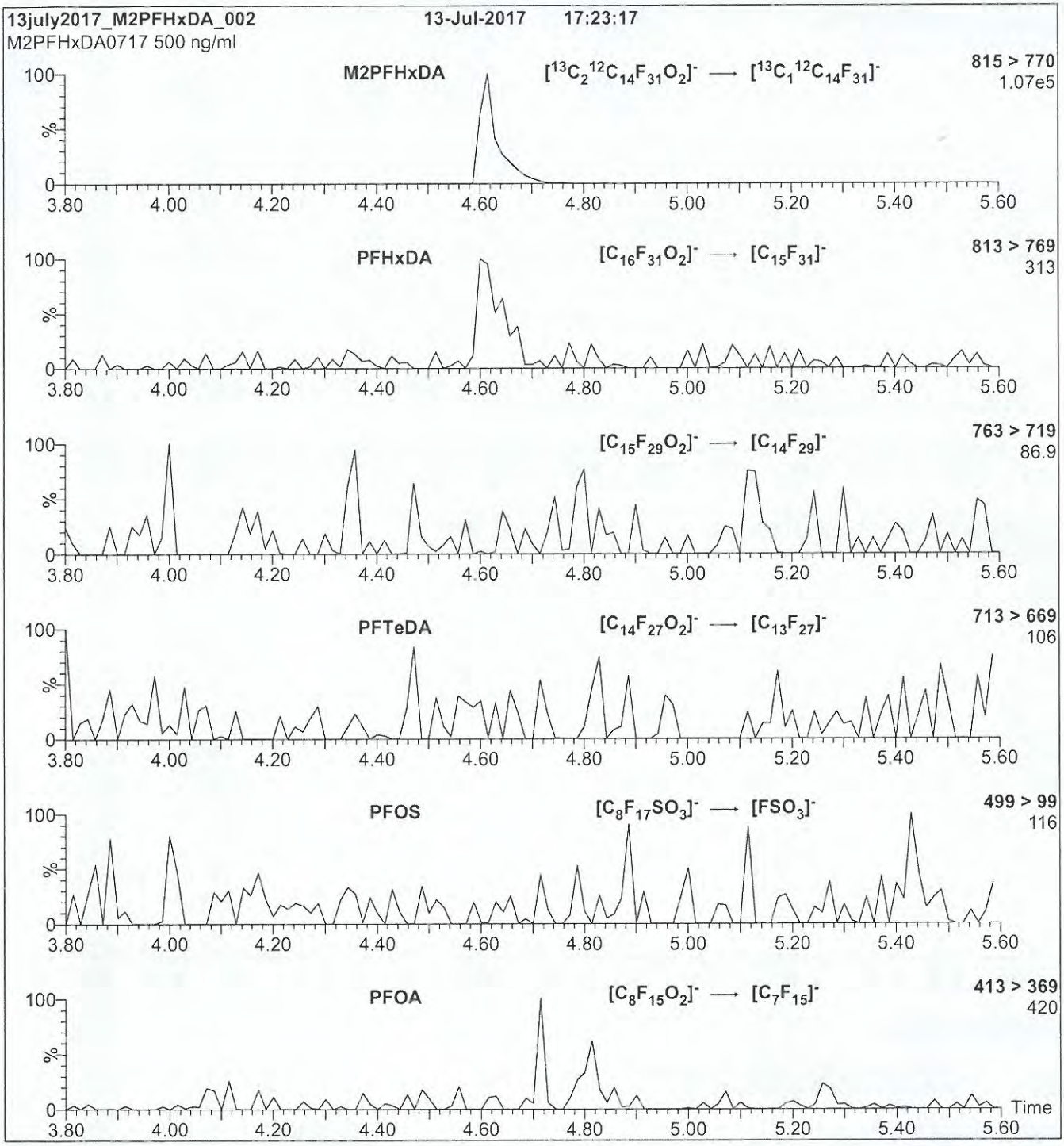
MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

1712311

Figure 2: **M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

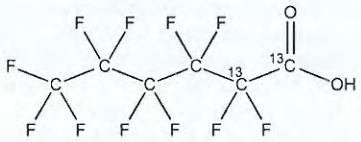
Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 15

1712312

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFHxA	**LOT NUMBER:**	MPFHxA1017
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4HF_{11}O_2$	**MOLECULAR WEIGHT:**	316.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2-$^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/27/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/27/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and < 0.3% of perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2312

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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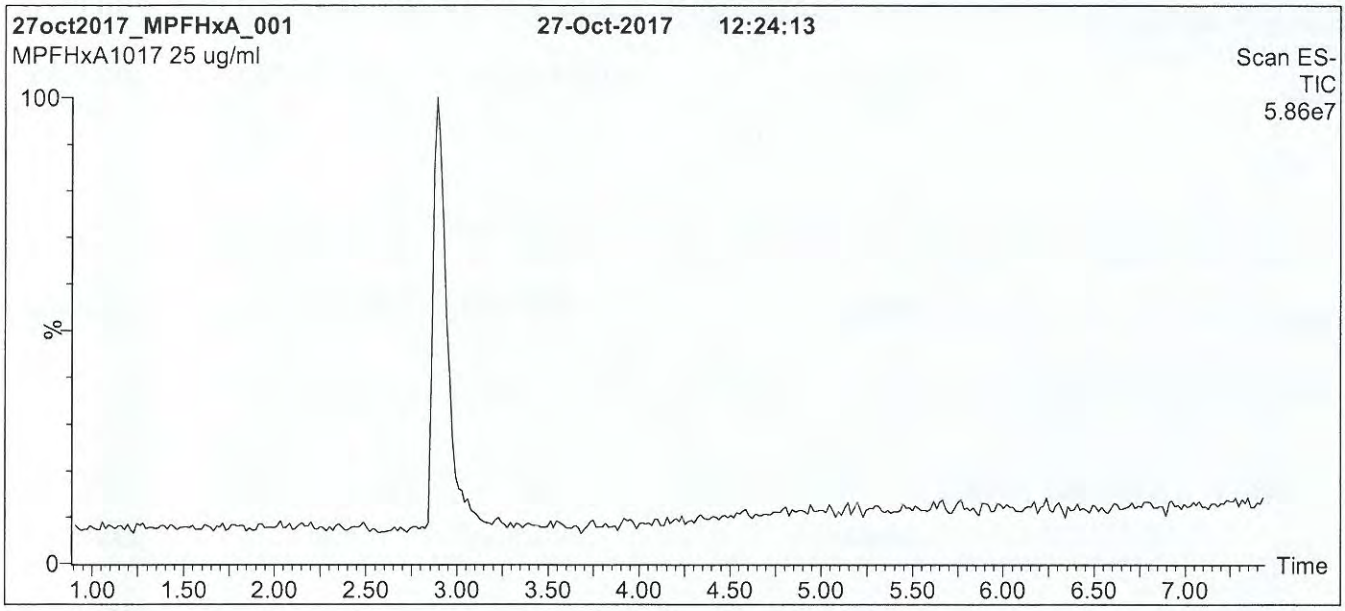
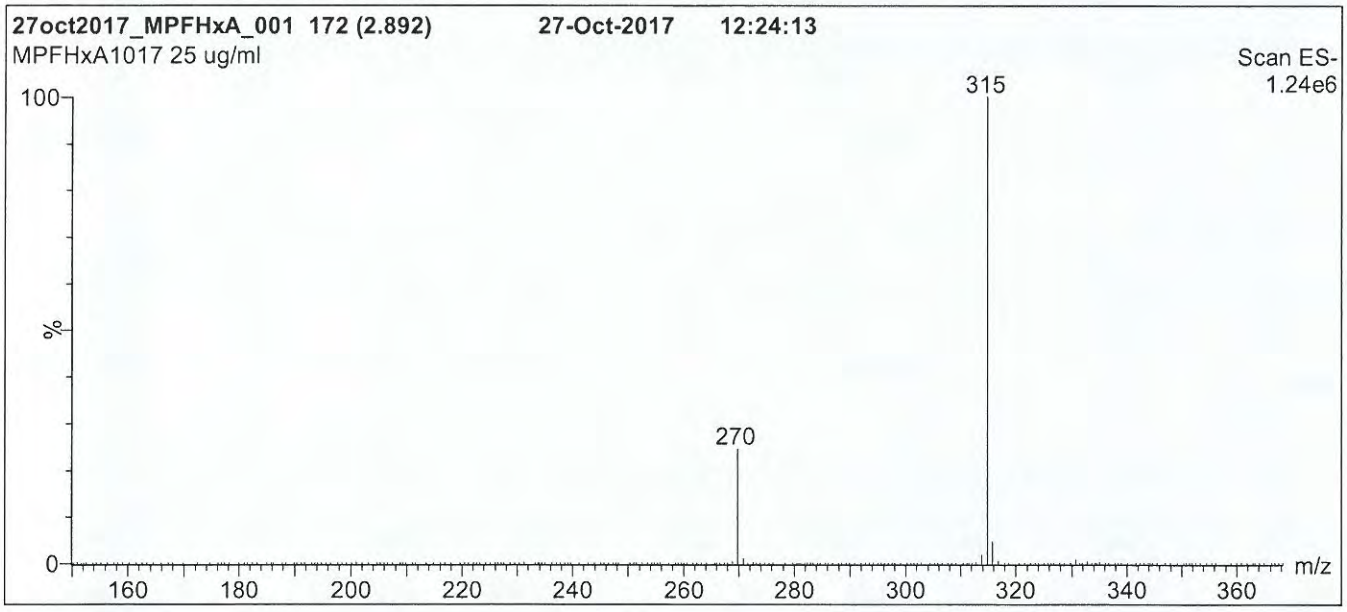
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2312

Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions over 0.5 min.
Time: 10 min

Flow: 300 µl/min

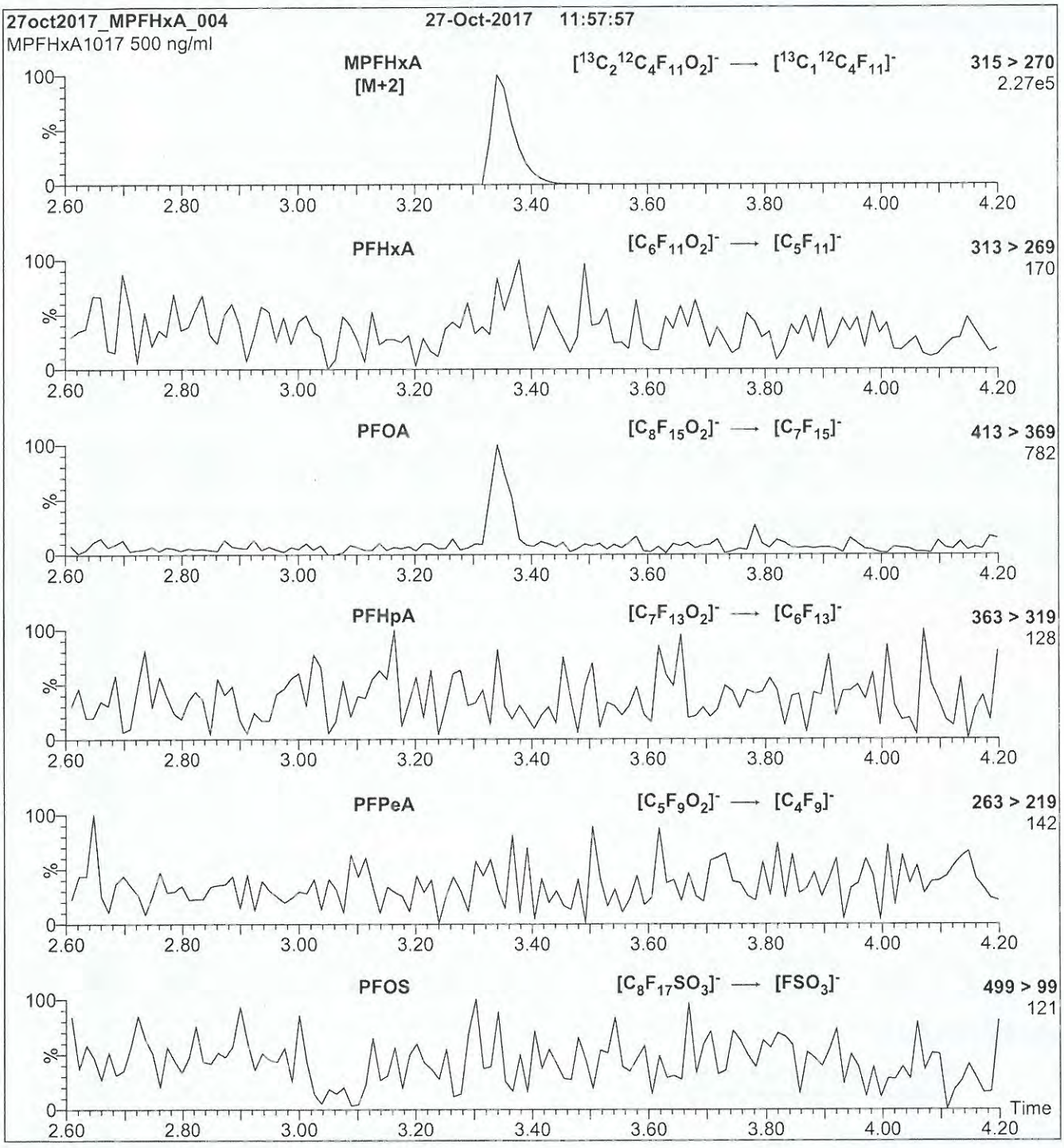
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2312

Figure 2: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.58e-3
Collision Energy (eV) = 10

17L2313

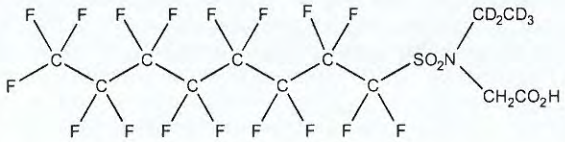
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA1117

COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$C_{12}D_5H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	590.26
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_5$
LAST TESTED: (mm/dd/yyyy)	11/08/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/08/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/16/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2313

INTENDED USE:

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UNCERTAINTY:

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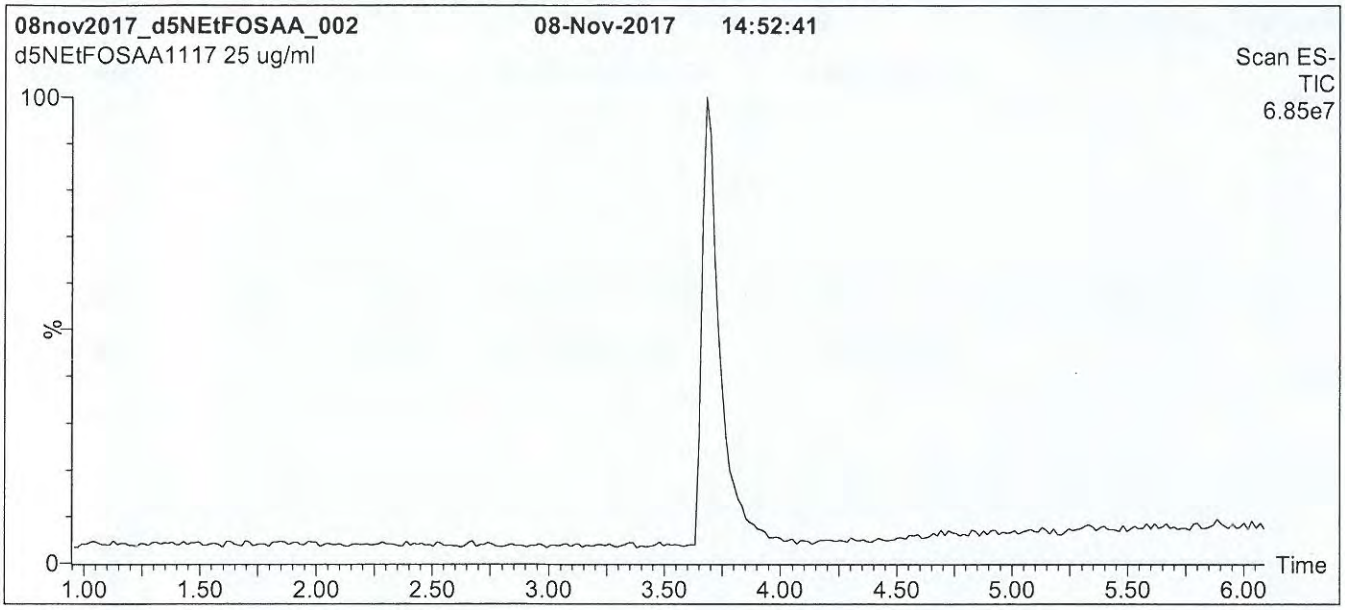
CALA

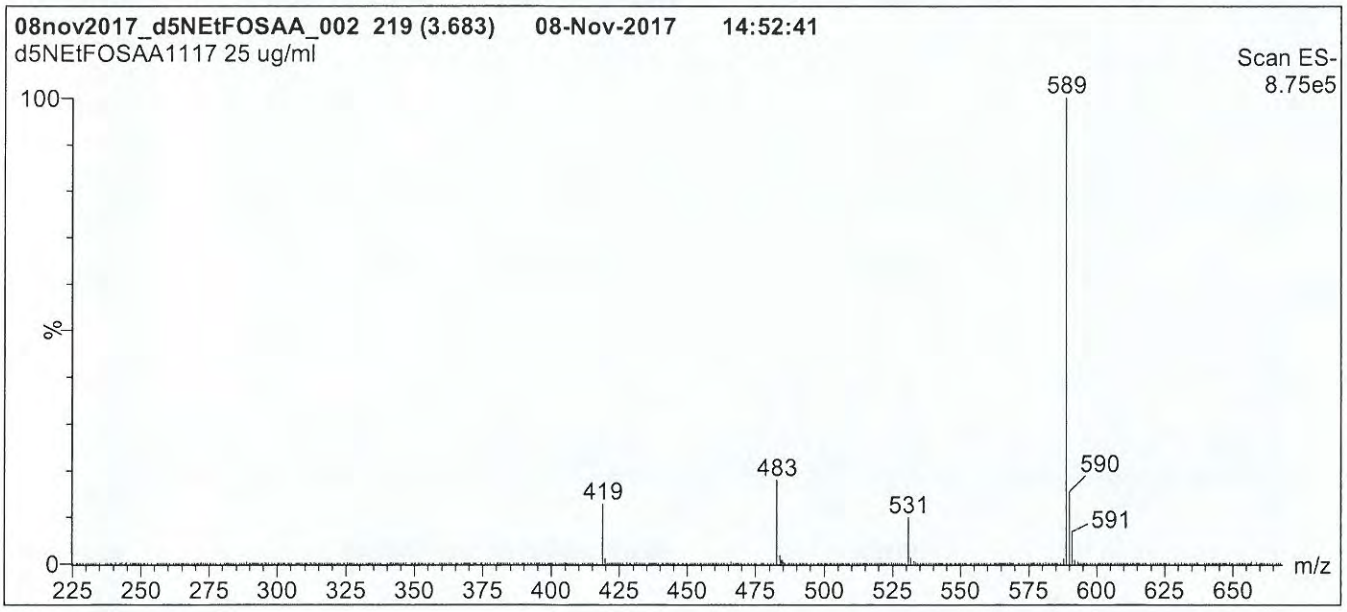
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2313

Figure 1: **d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

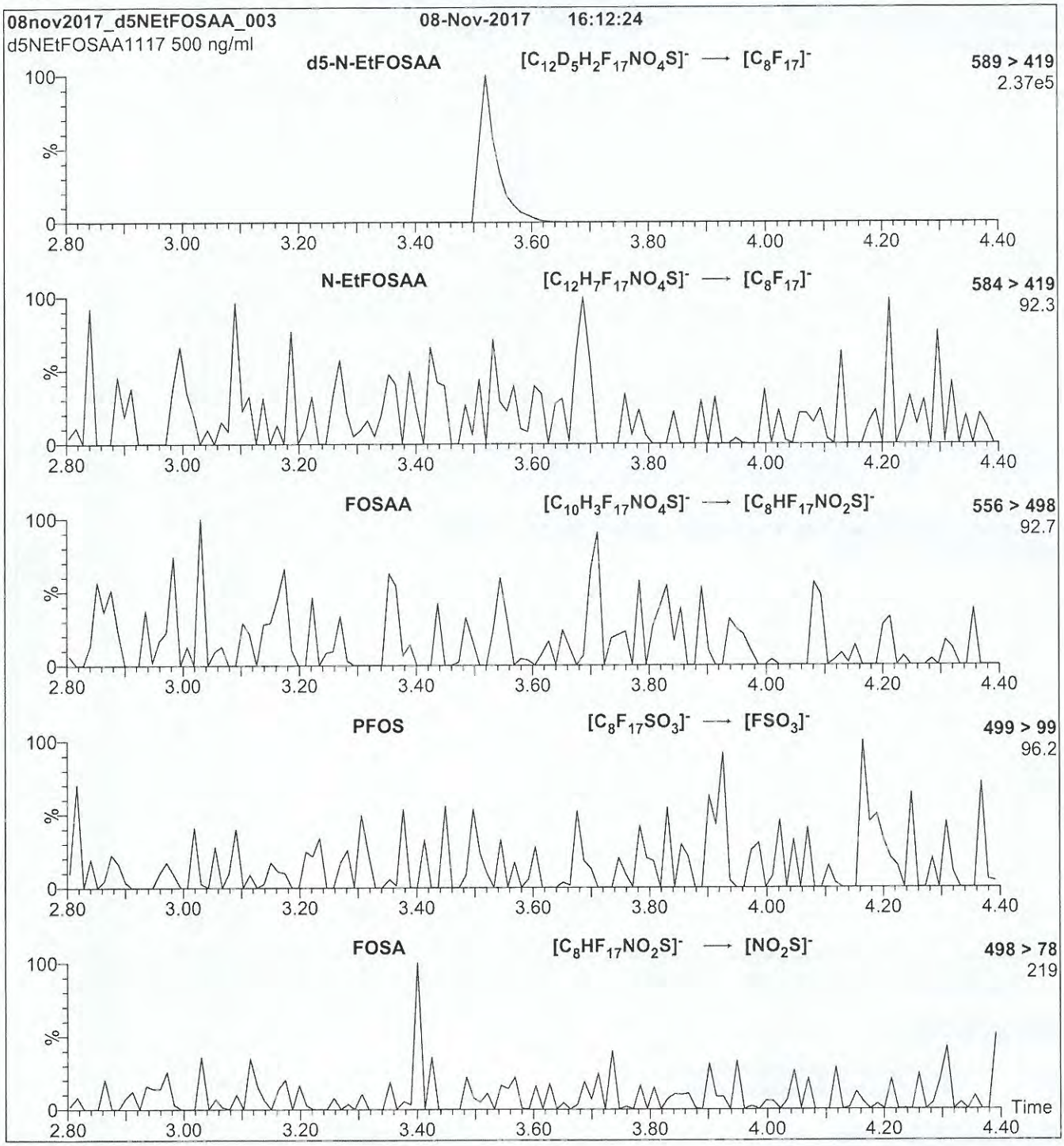
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2313

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 20

17L2314

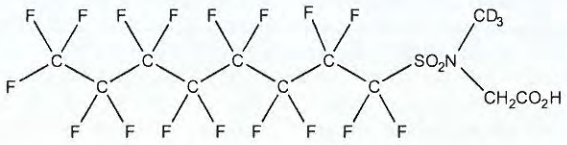
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA1117

COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$C_{11}D_3H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	574.23
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_3$
LAST TESTED: (mm/dd/yyyy)	11/08/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/08/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/16/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2314

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

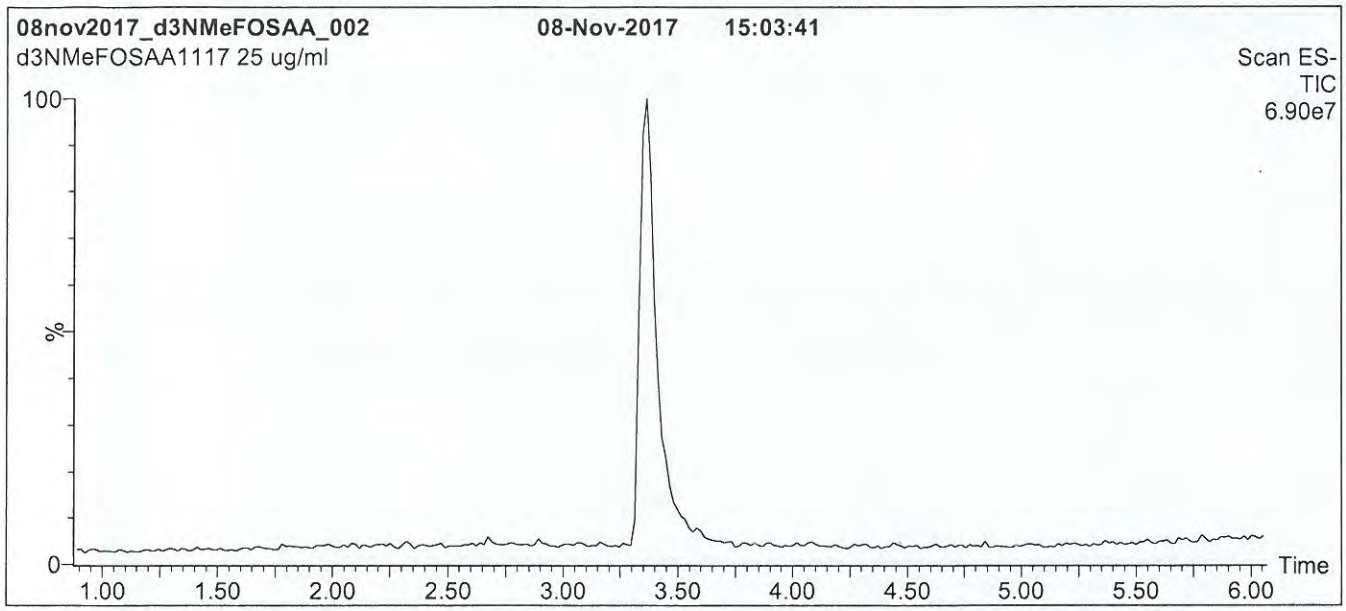
CALA

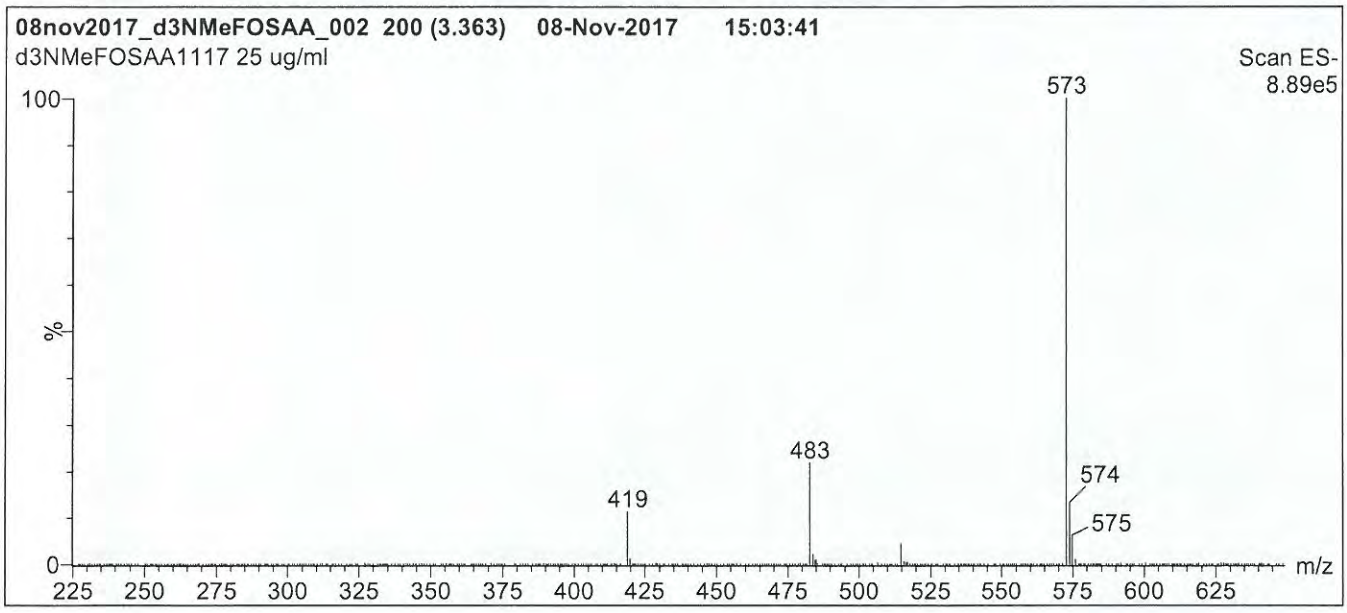
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2314

Figure 1: **d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

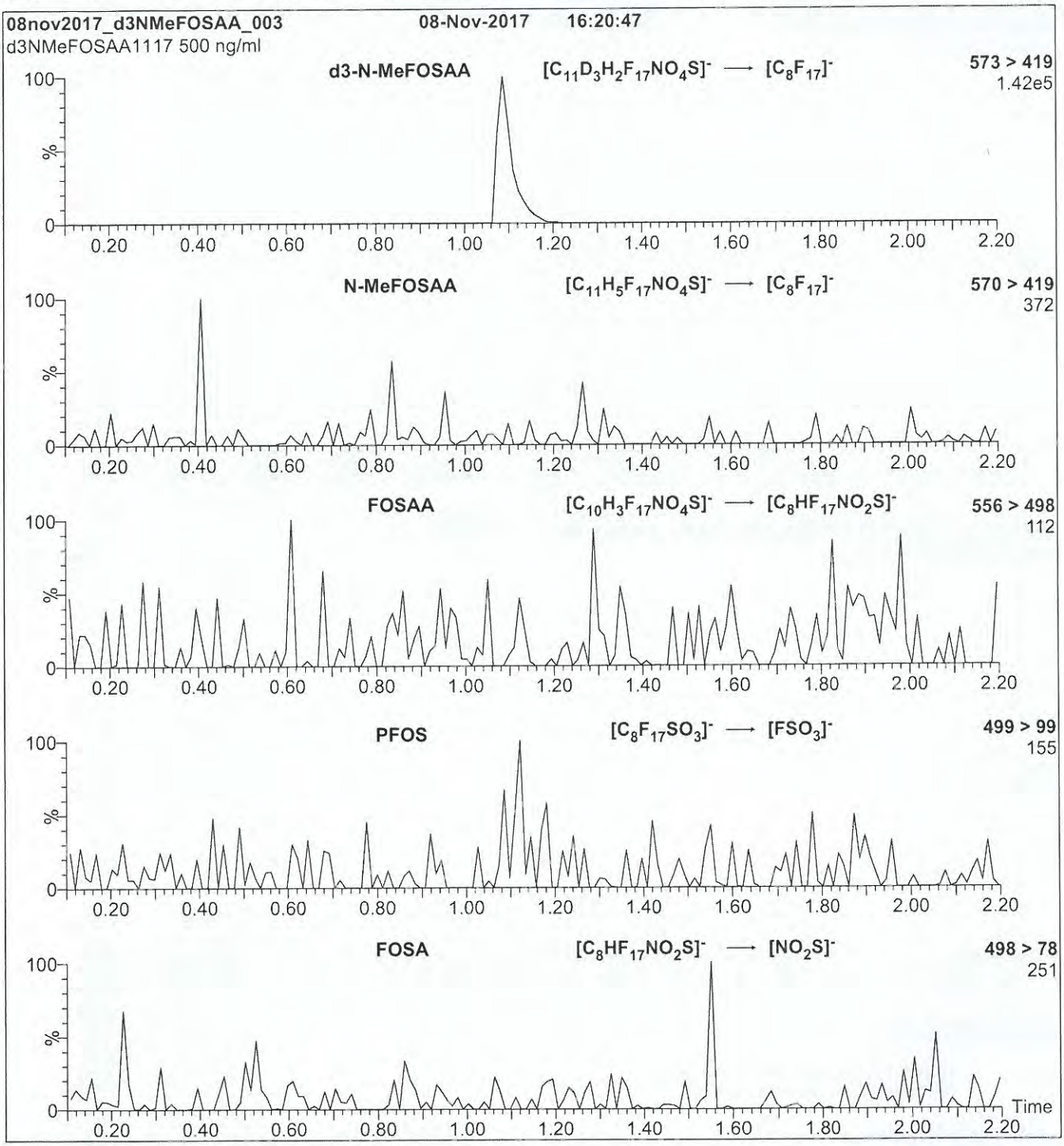
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2314

Figure 2: **d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

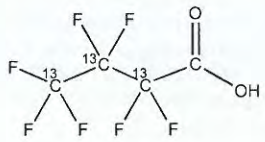
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 20

17L2315

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFBA	**LOT NUMBER:**	M3PFBA0516
COMPOUND:	Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}CHF_7O_2$	**MOLECULAR WEIGHT:**	217.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (2,3,4-$^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	05/27/2016		
EXPIRY DATE: (mm/dd/yyyy)	05/27/2021		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-[$^{13}C_3$]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid due to the naturally occurring isotopic abundance of ^{13}C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 07/08/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2315

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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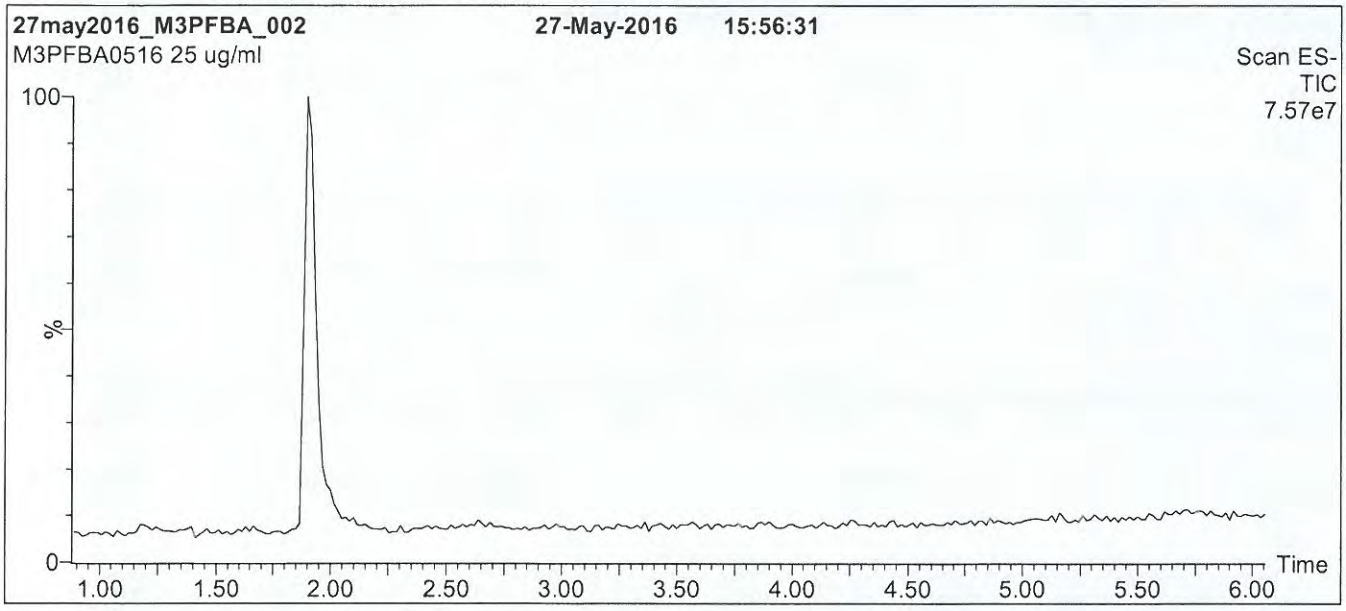
CALA Testing Accreditation No. A 1226

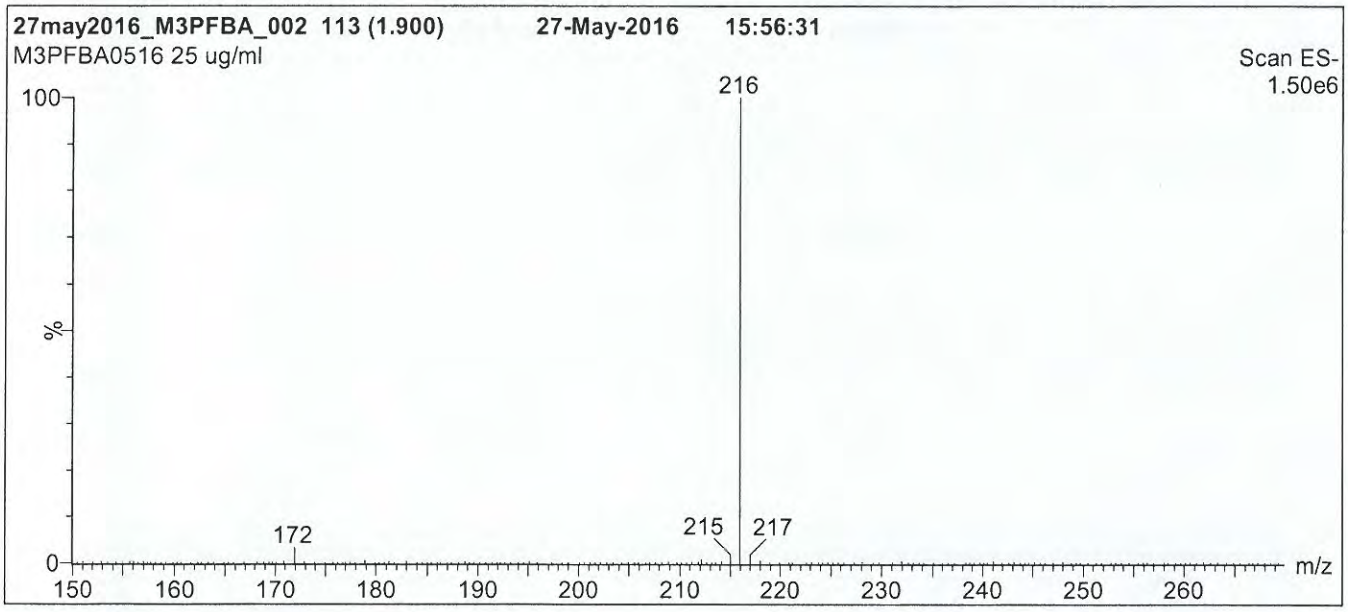
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2315

Figure 1: **M3PFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

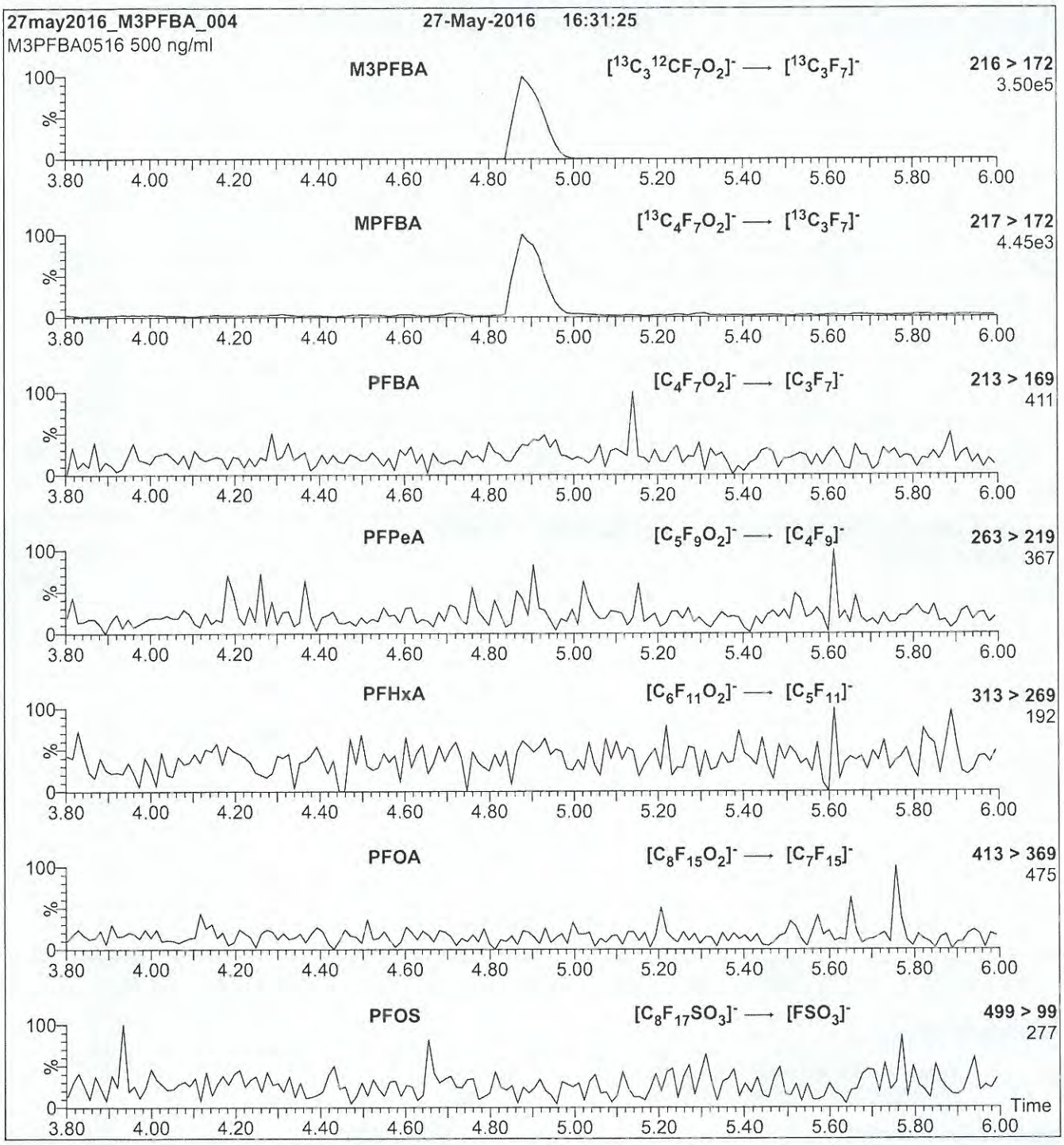
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2315

Figure 2: **M3PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 10

17L2316

WELLINGTON LABORATORIES

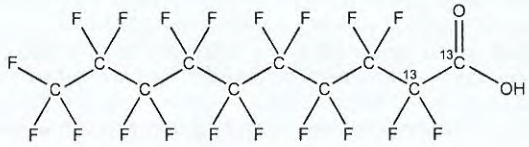
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid

LOT NUMBER: MPFDA0717

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_8HF_{19}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 516.07
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/13/2017
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

ISOTOPIC PURITY: ≥99% ^{13}C ($1,2\text{-}^{13}C_2$)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of $^{13}C_1$-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2316

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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CALA

ANAB ACCREDITED

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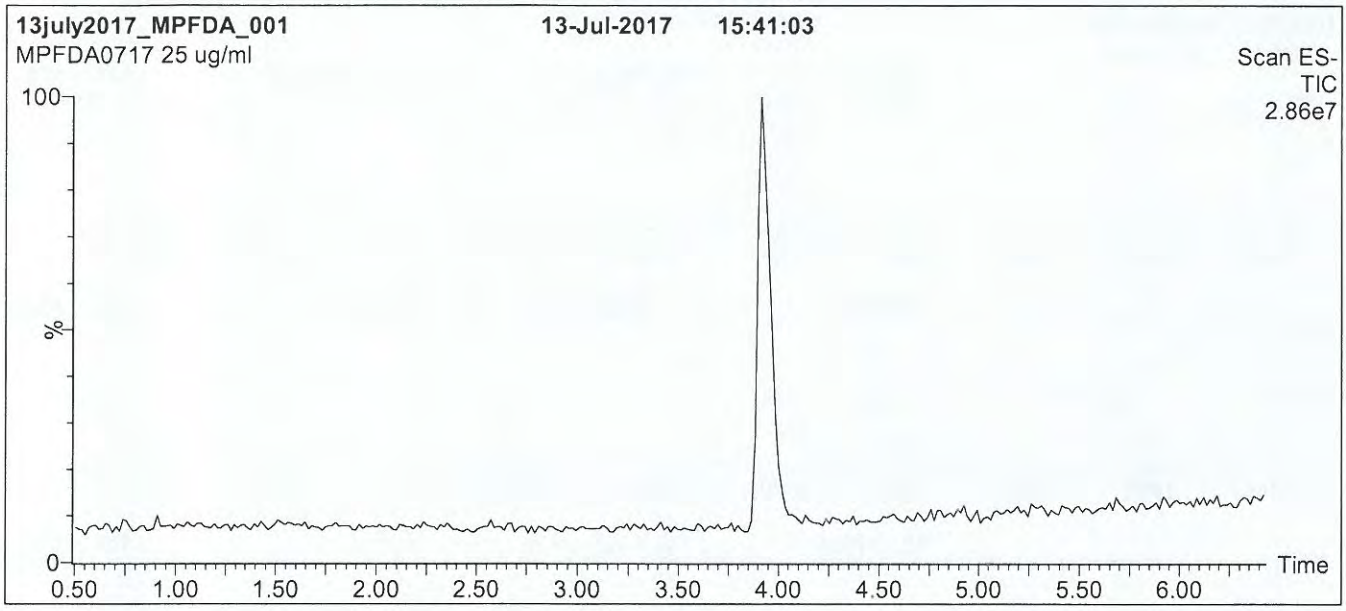
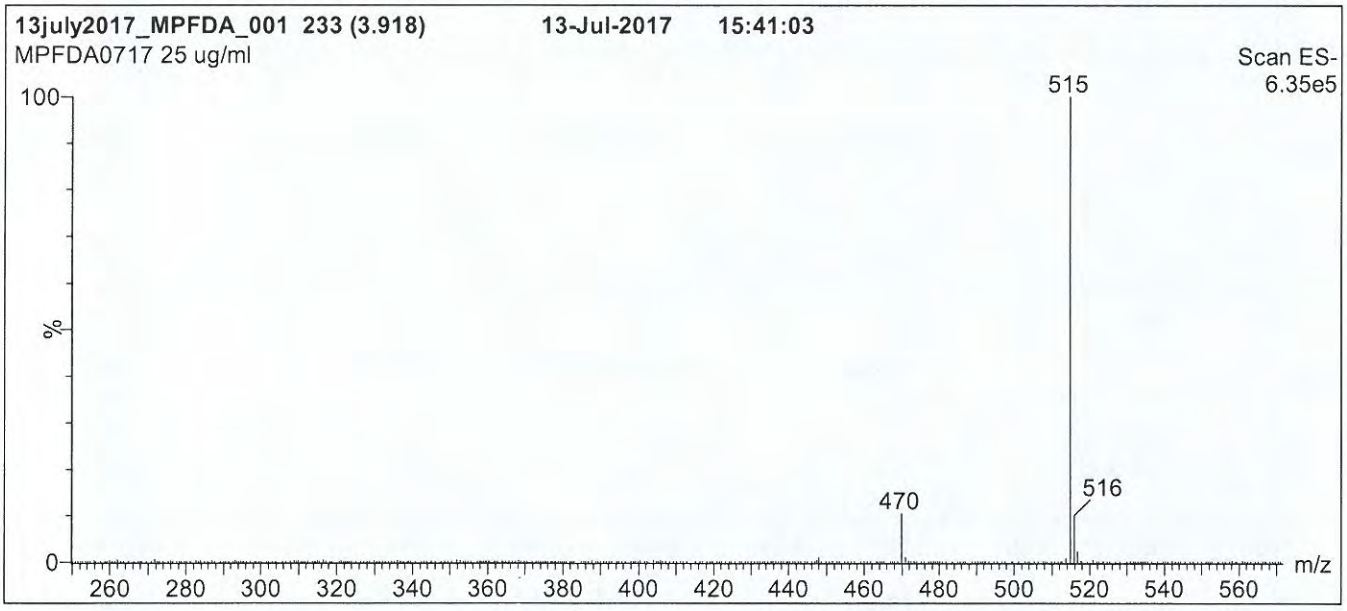
17L236

Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

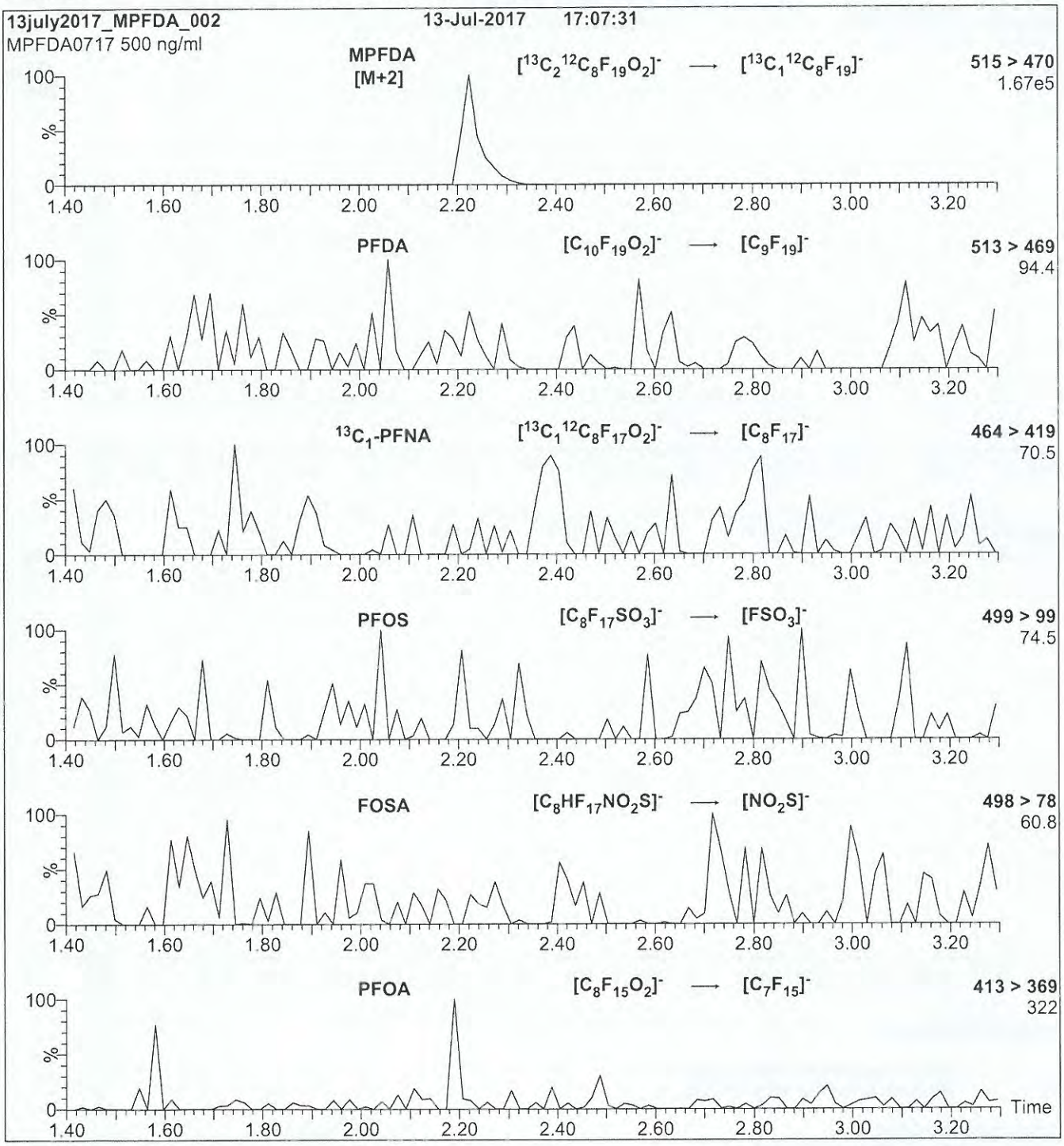
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2316

Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 13

1712317

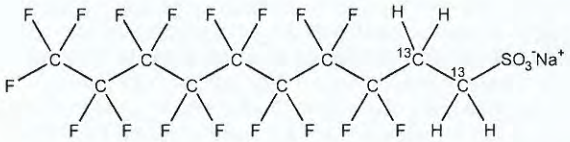
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0717

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]decane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	552.15
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt)	**SOLVENT(S):**	Methanol
	47.9 ± 2.4 µg/ml (M2-8:2FTS anion)		
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/07/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2317

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c\left(y(x_1, x_2, \ldots x_n)\right) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

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CALA

ANAB ACCREDITED

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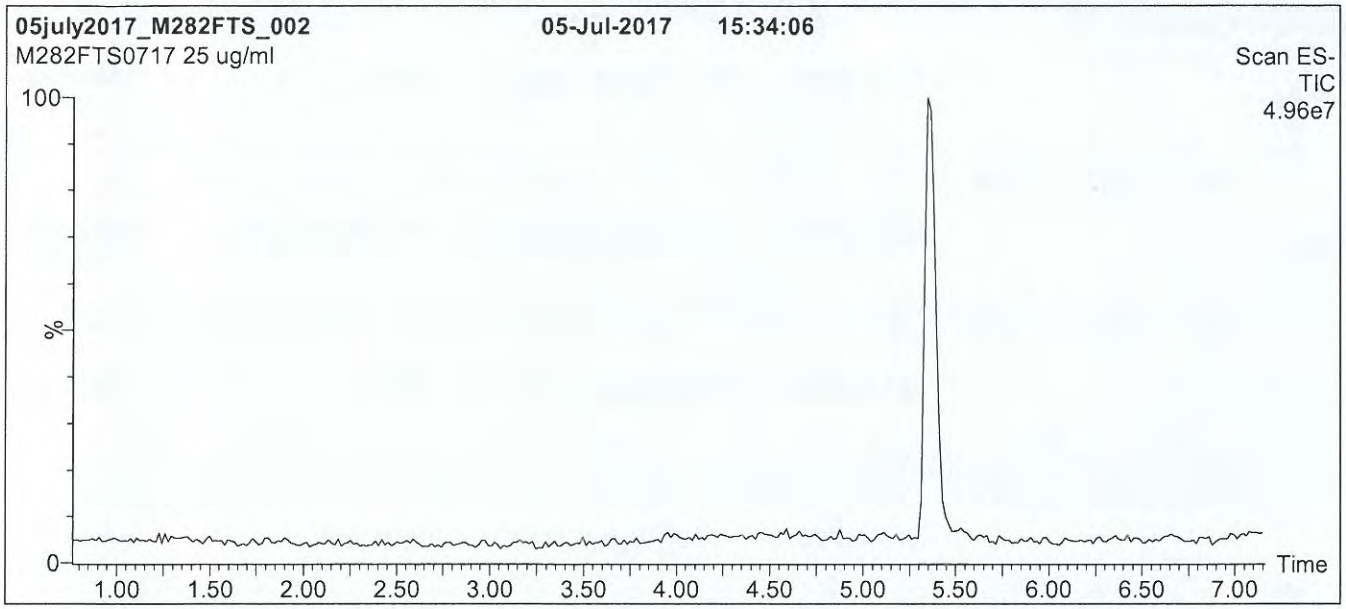
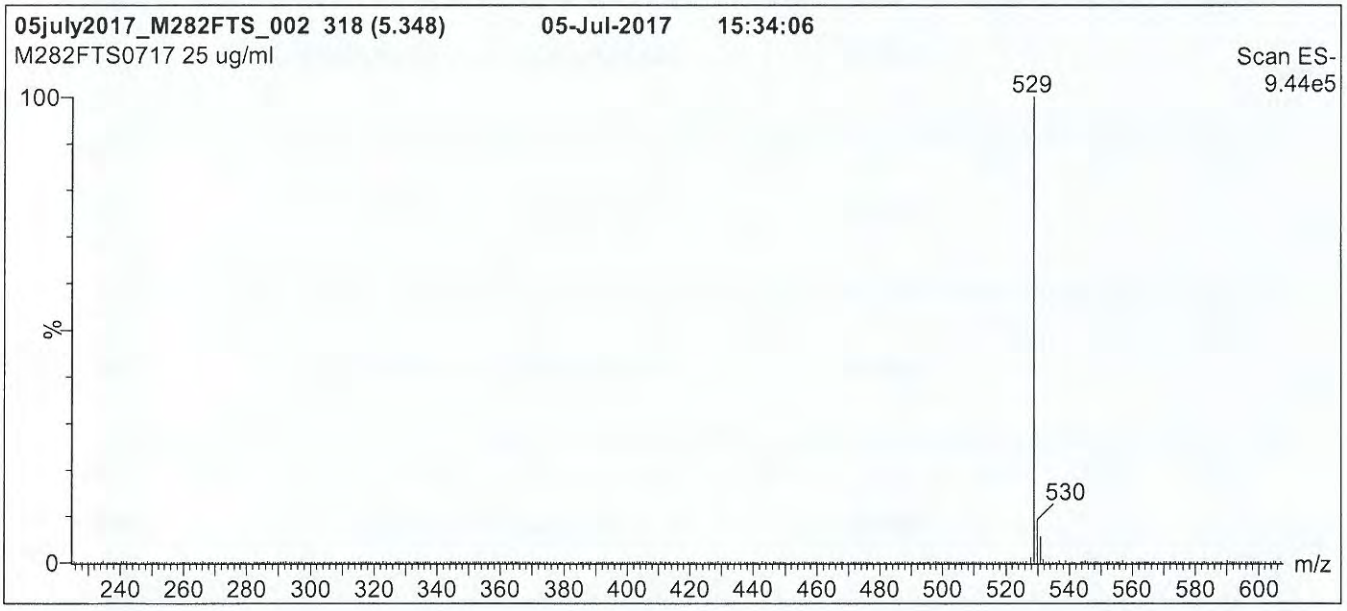
172317

Figure 1: **M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

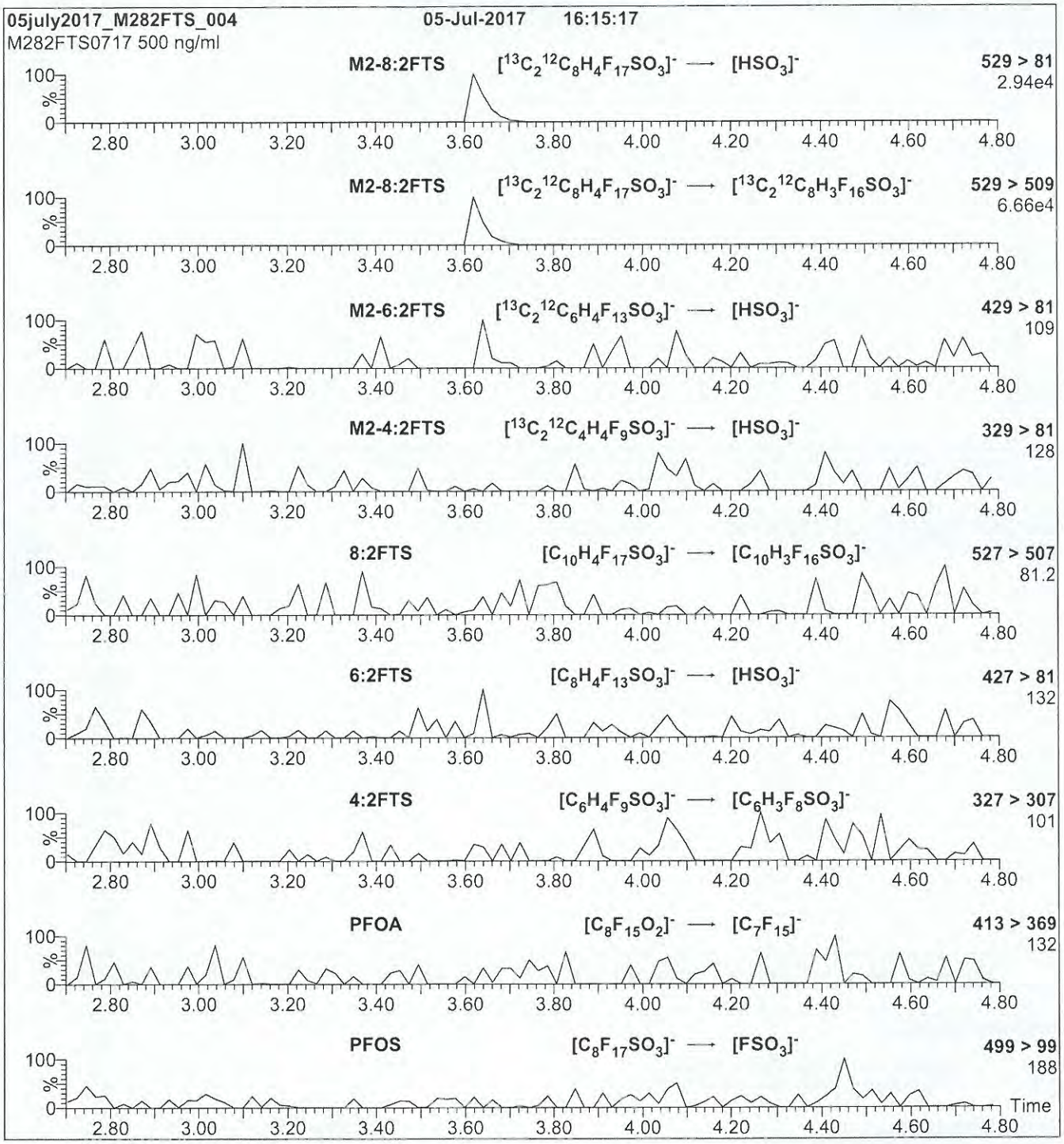
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source:Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2317

Figure 2: **M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2-8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 30

1762318

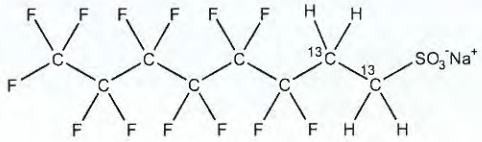
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0217

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]octane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6H_4F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	452.13
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt)	**SOLVENT(S):**	Methanol
	47.5 ± 2.4 µg/ml (M2-6:2FTS anion)		
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	02/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	02/17/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

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Certified By: B.G. Chittim **Date:** 02/24/2017 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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ANAB ACCREDITED

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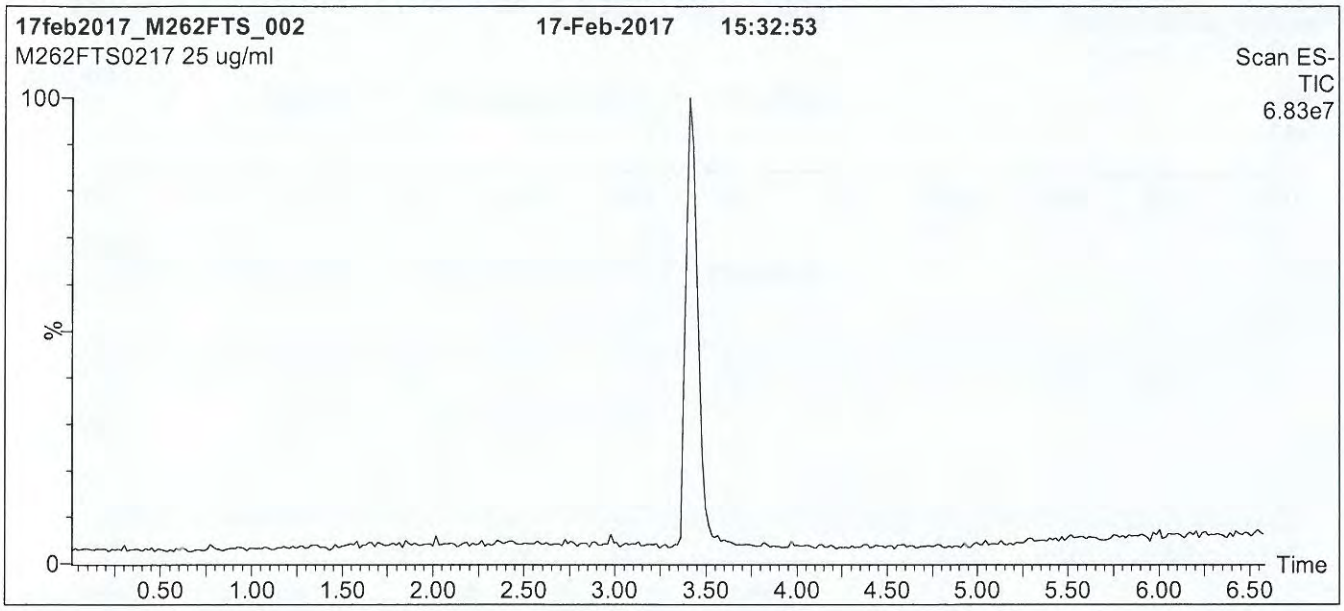
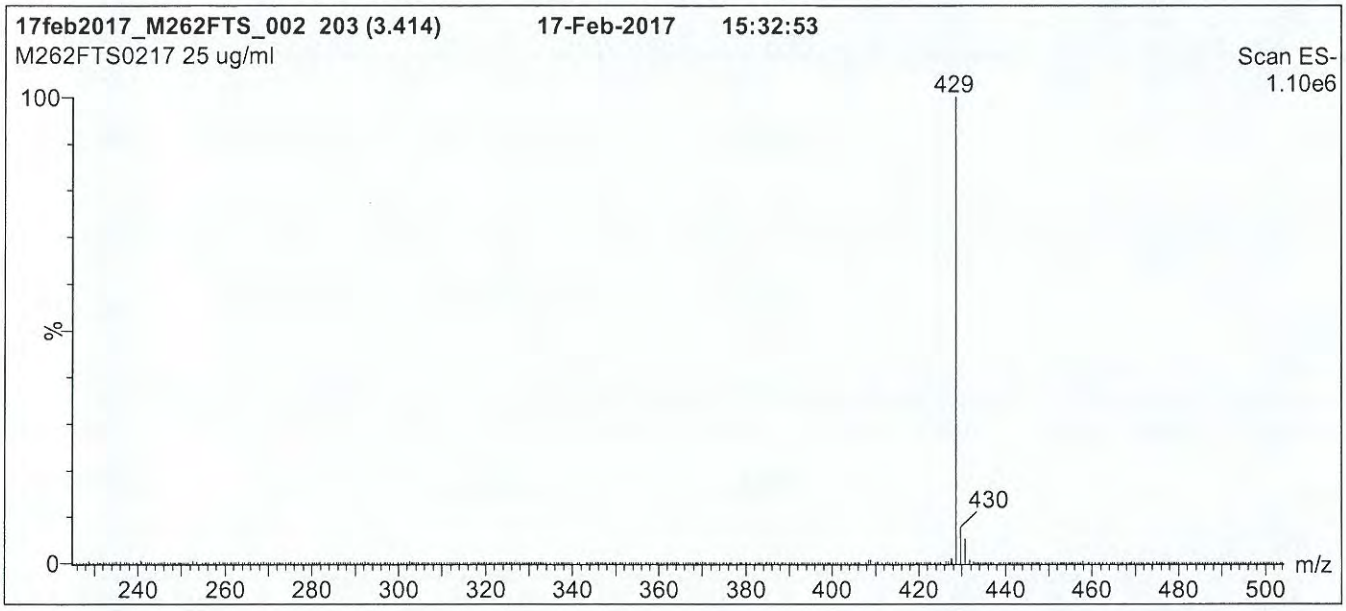
17L2318

Figure 1: **M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

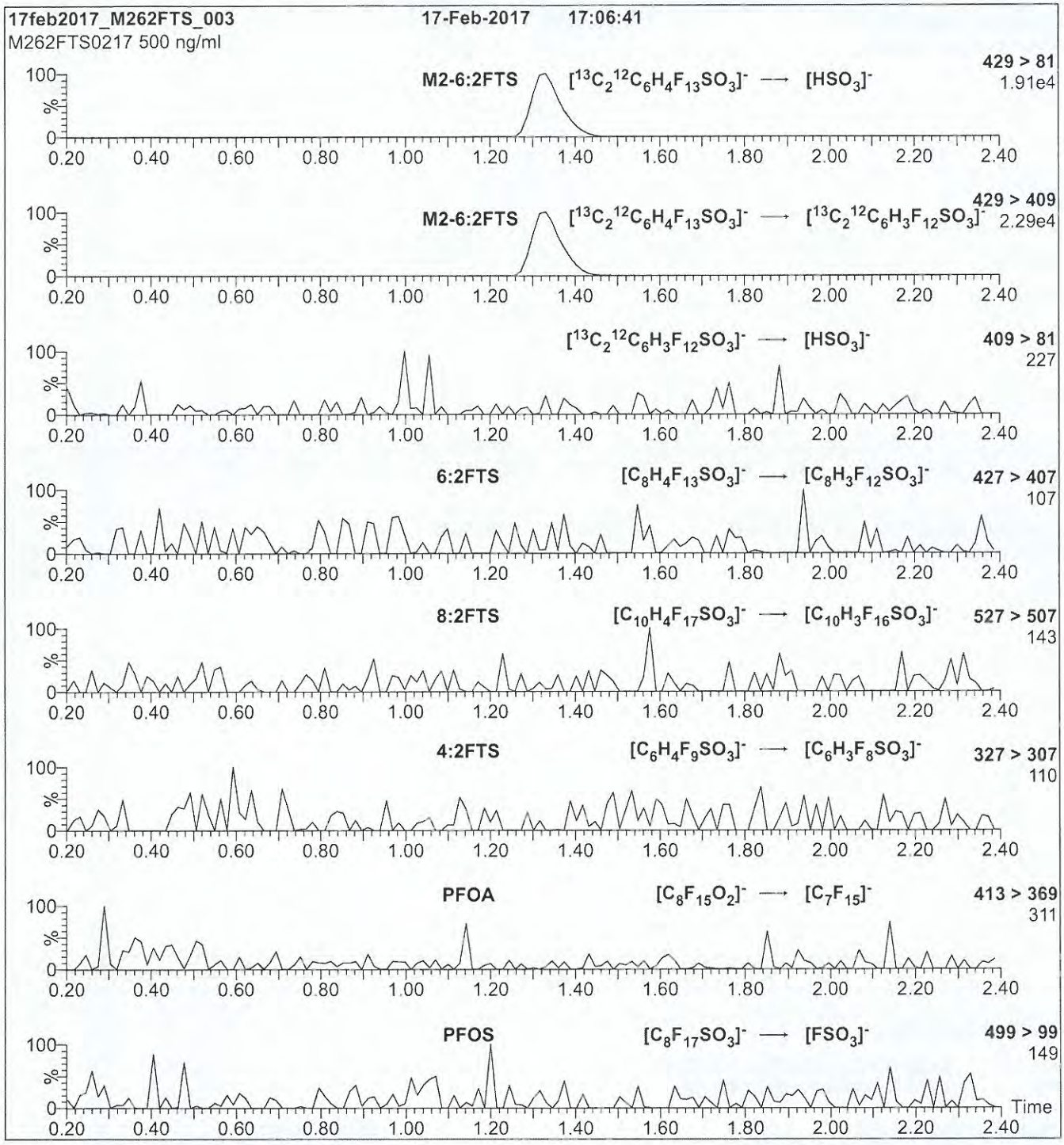
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source:Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2318

Figure 2: **M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

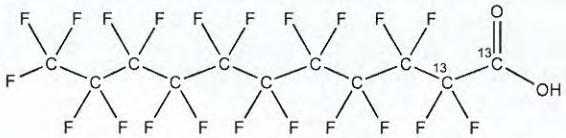
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

17L2319

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFUdA	**LOT NUMBER:**	MPFUdA1116
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]undecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_9HF_{21}O_2$	**MOLECULAR WEIGHT:**	566.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/22/2016		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2021		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-$^{13}C_1$-PFUdA (~1%; see Figure 2), 2-$^{13}C_1$-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ^{13}C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 12/07/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2319

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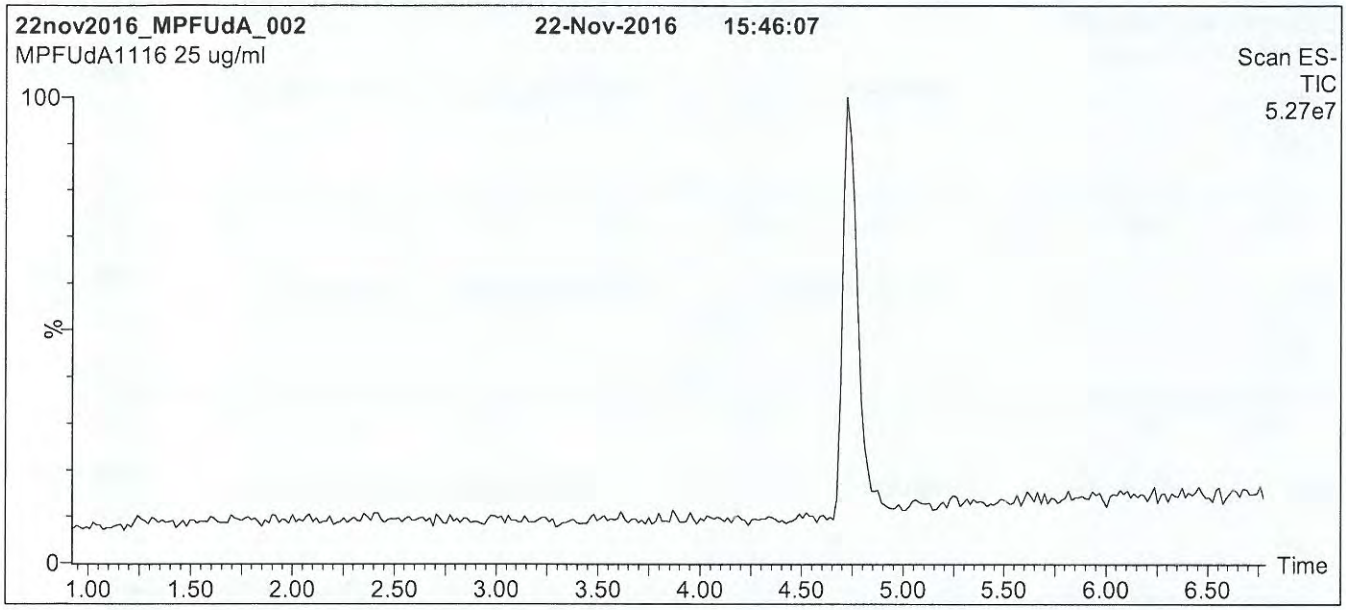
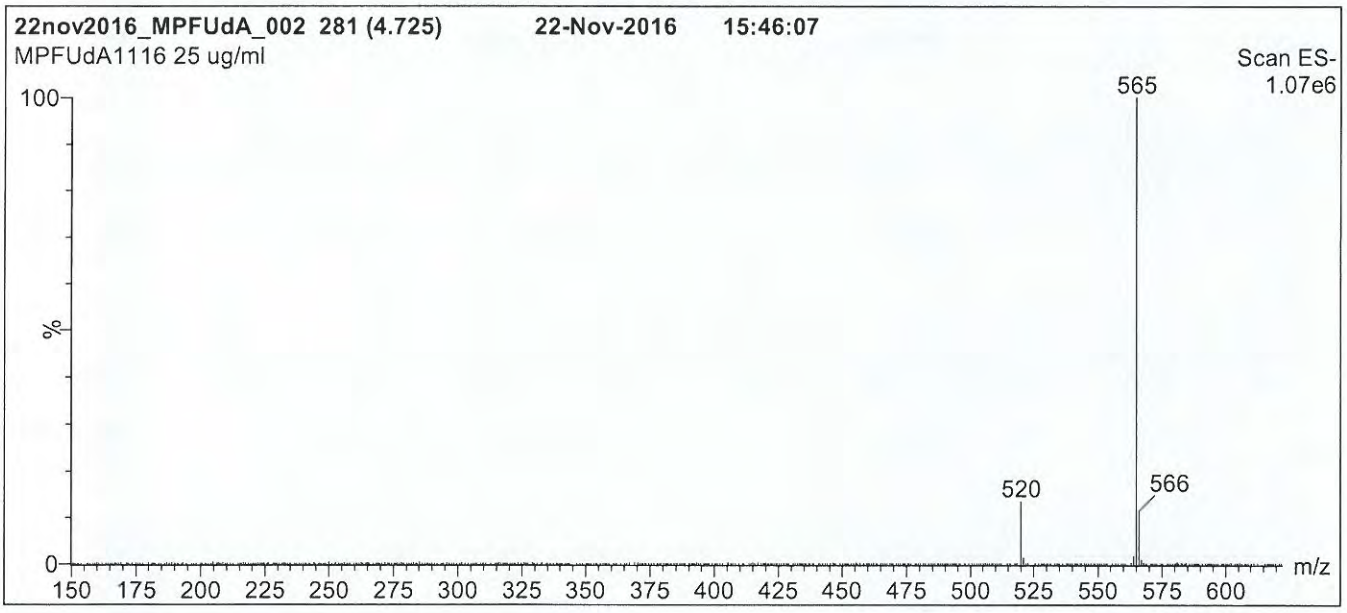
17L2319

Figure 1: **MPFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

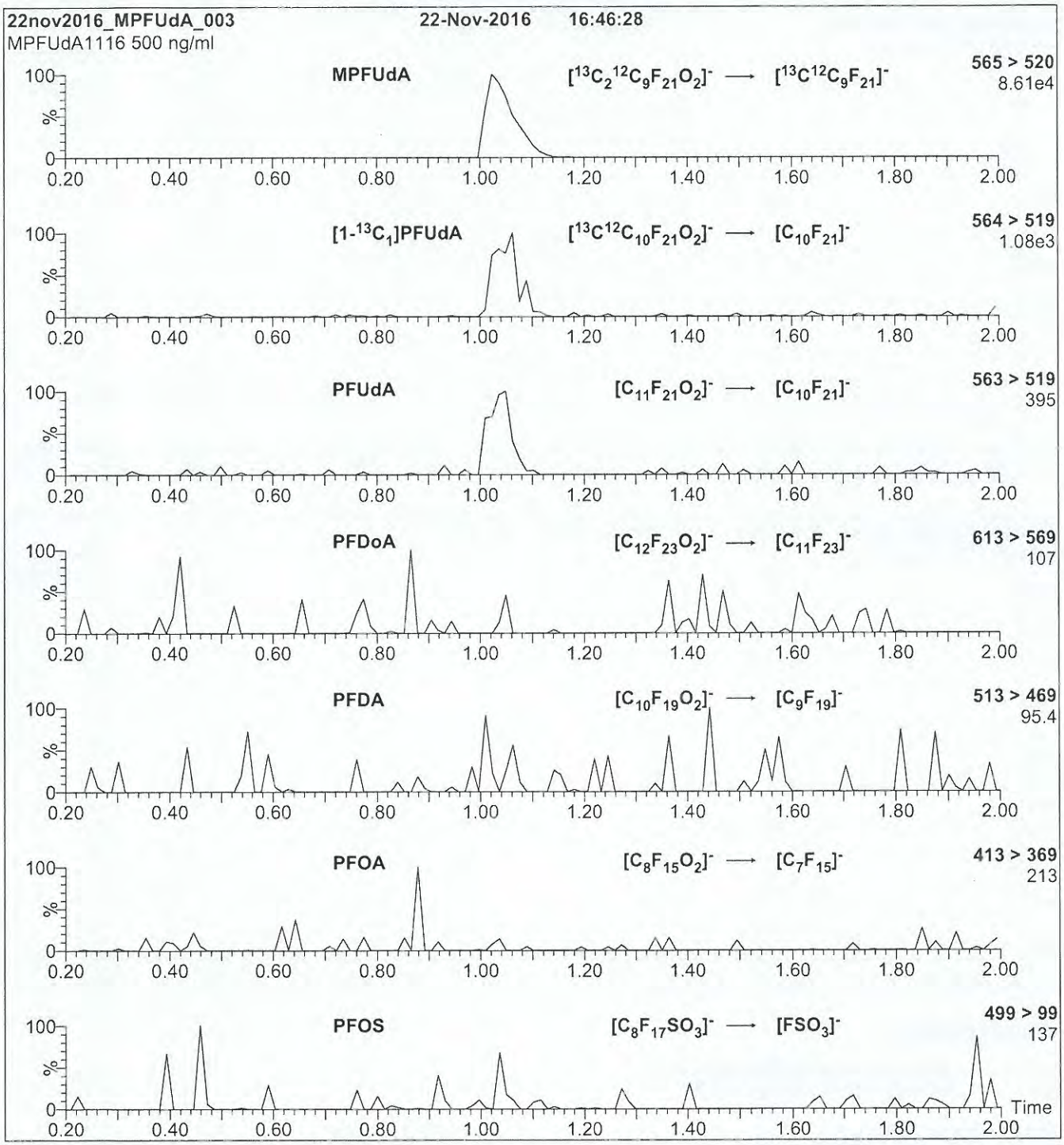
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

17L2319

Figure 2: **MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

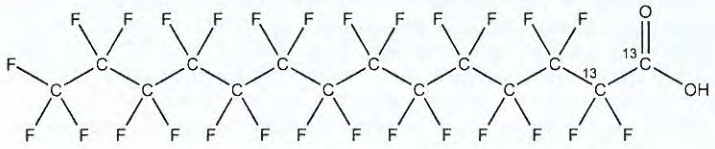
Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 11

17L2320

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M2PFTeDA	**LOT NUMBER:**	M2PFTeDA1117
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]tetradecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{12}HF_{27}O_2$	**MOLECULAR WEIGHT:**	716.10
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/30/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/30/2022		
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Certified By: _____ **Date:** 12/01/2017 (mm/dd/yyyy)
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$$u_c(y(x_1, x_2, \ldots, x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

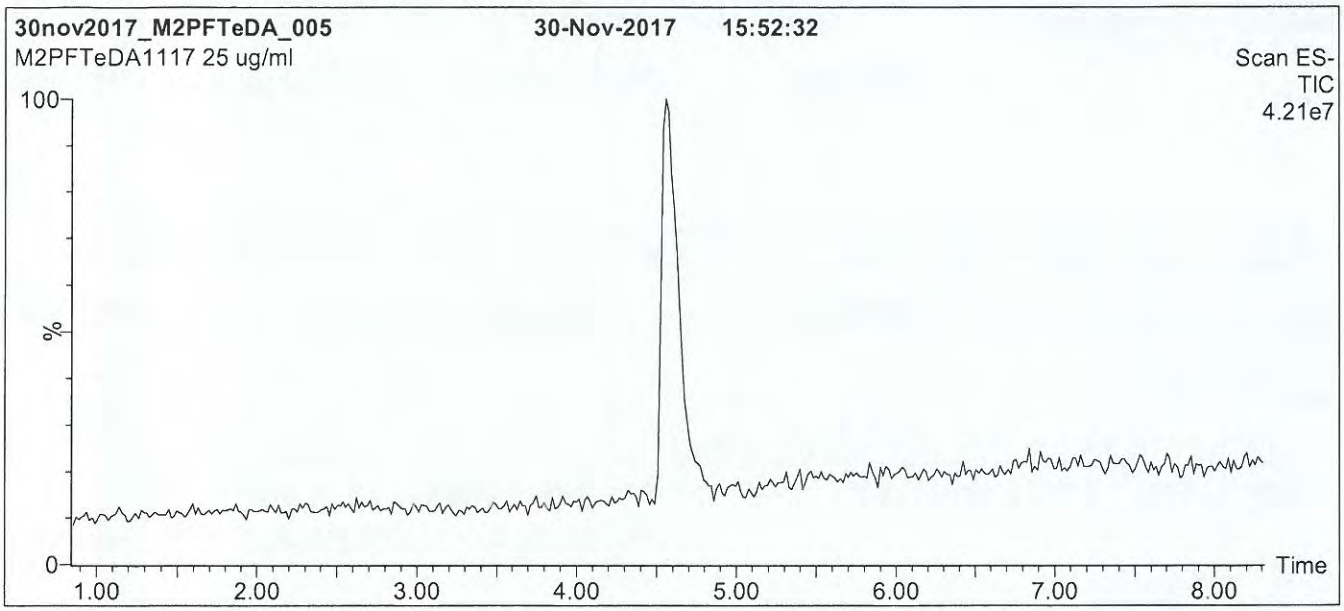
CALA

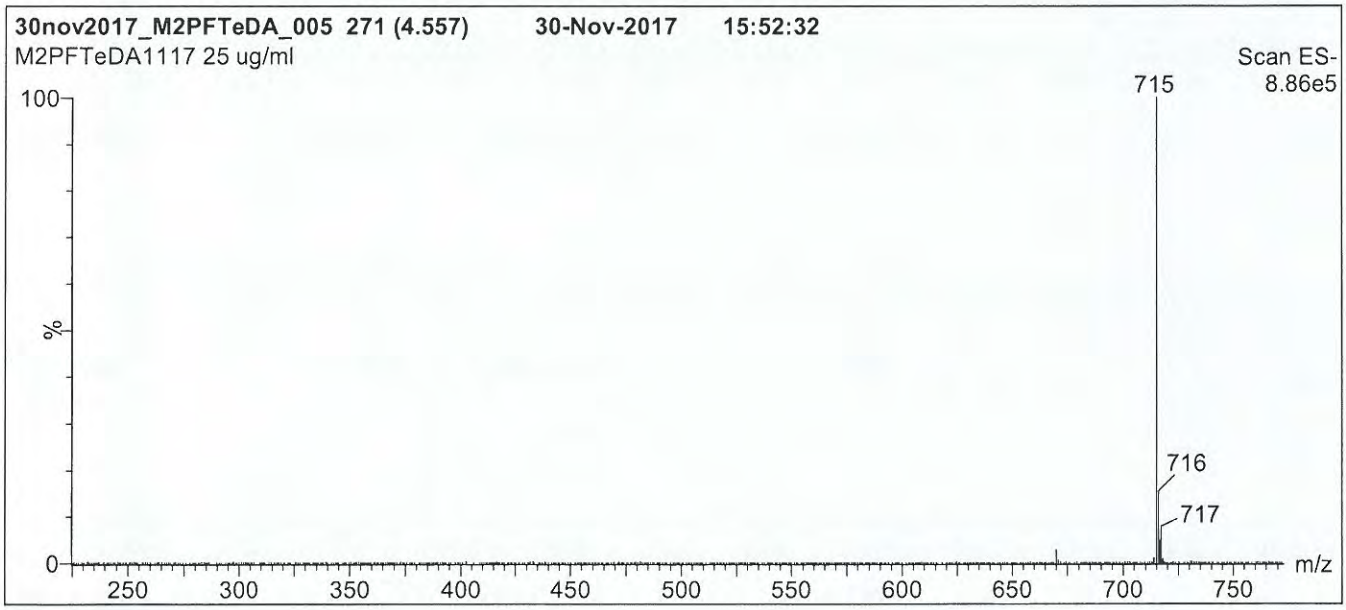
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2320

Figure 1: **M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% (80:20 MeOH:ACN) / 35% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

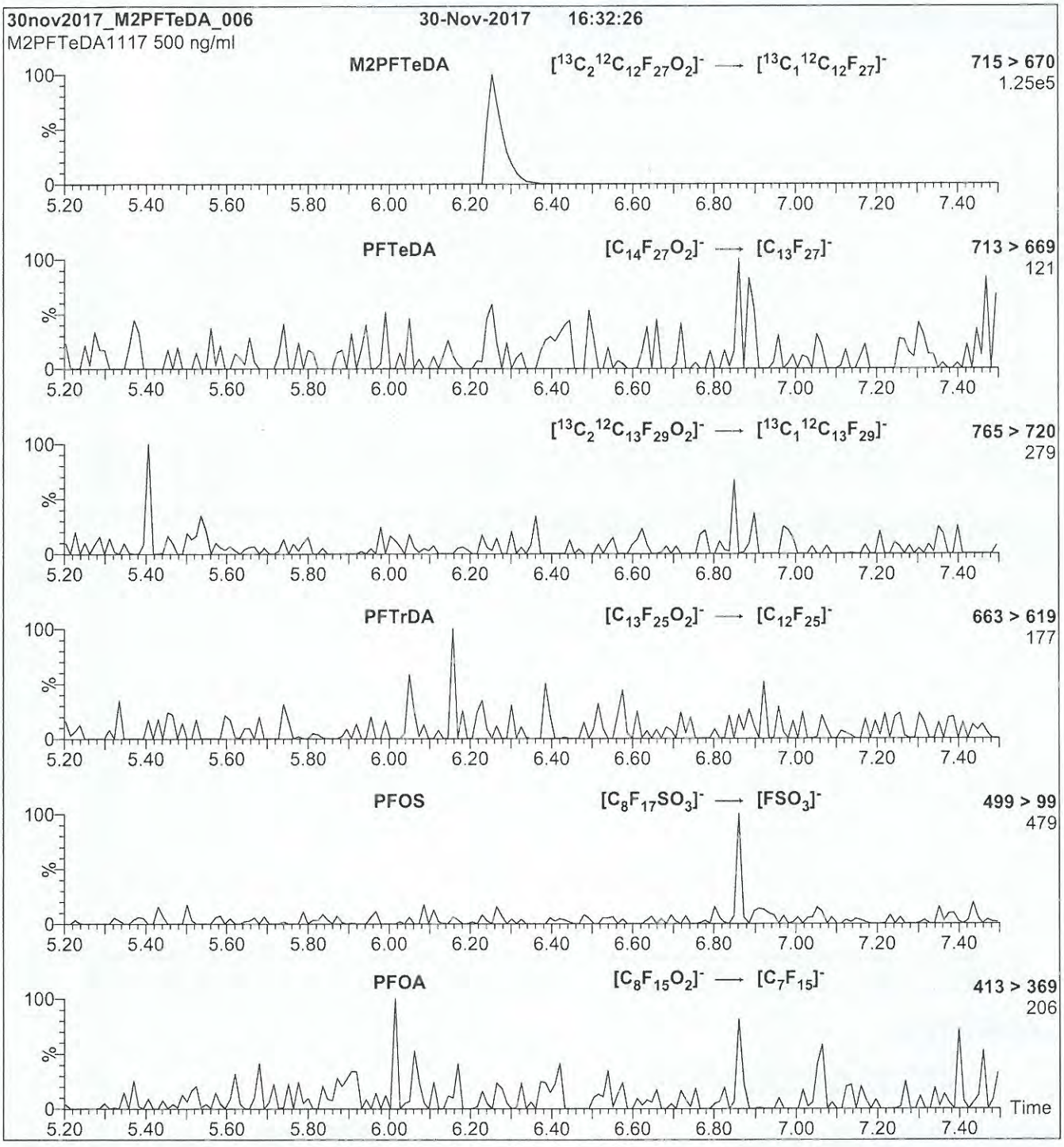
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1712320

Figure 2: **M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

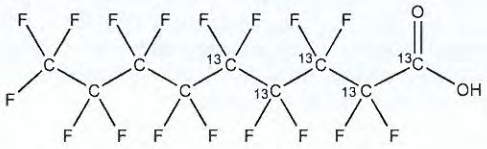
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 14

17L2321

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFNA	**LOT NUMBER:**	MPFNA0916
COMPOUND:	Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_4HF_{17}O_2$	**MOLECULAR WEIGHT:**	469.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,5-$^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	09/30/2016		
EXPIRY DATE: (mm/dd/yyyy)	09/30/2021		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/11/2016
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2321

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

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TRACEABILITY:

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CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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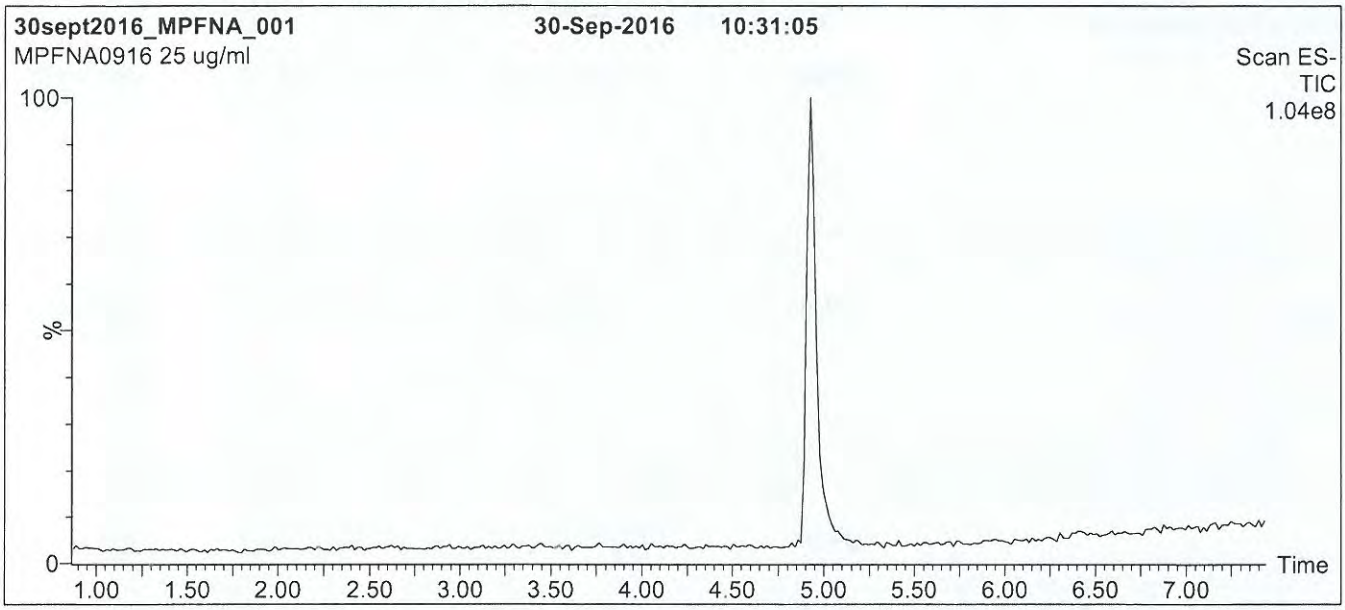
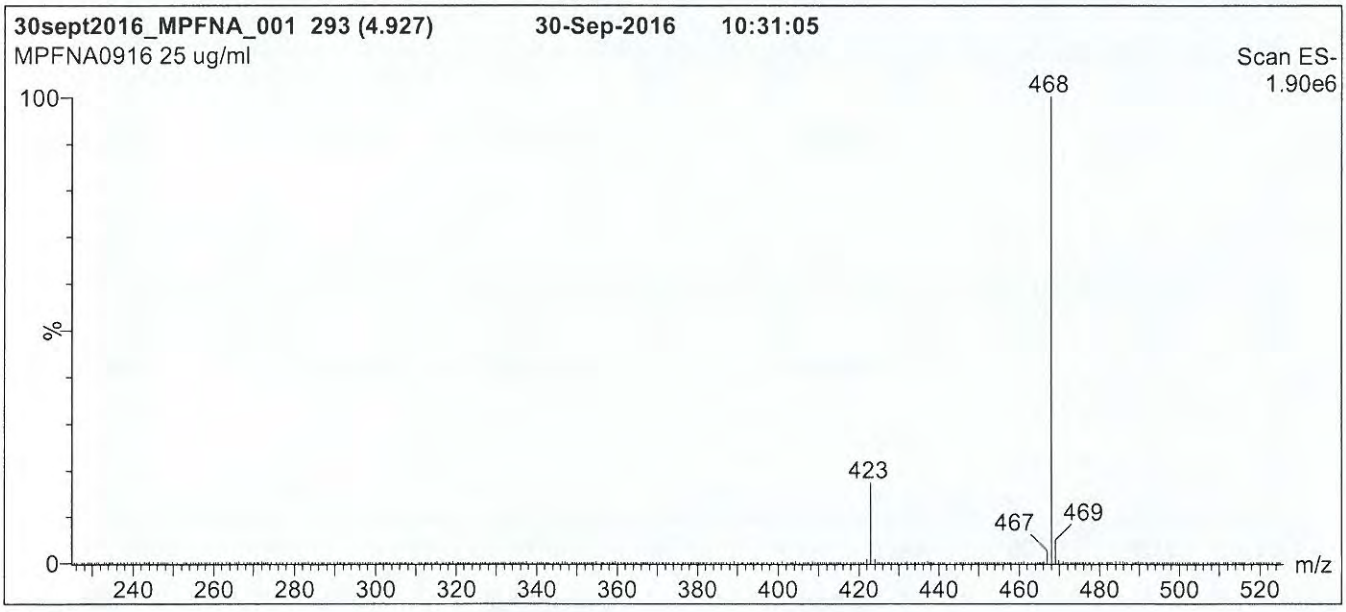
1712321

Figure 1: **MPFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

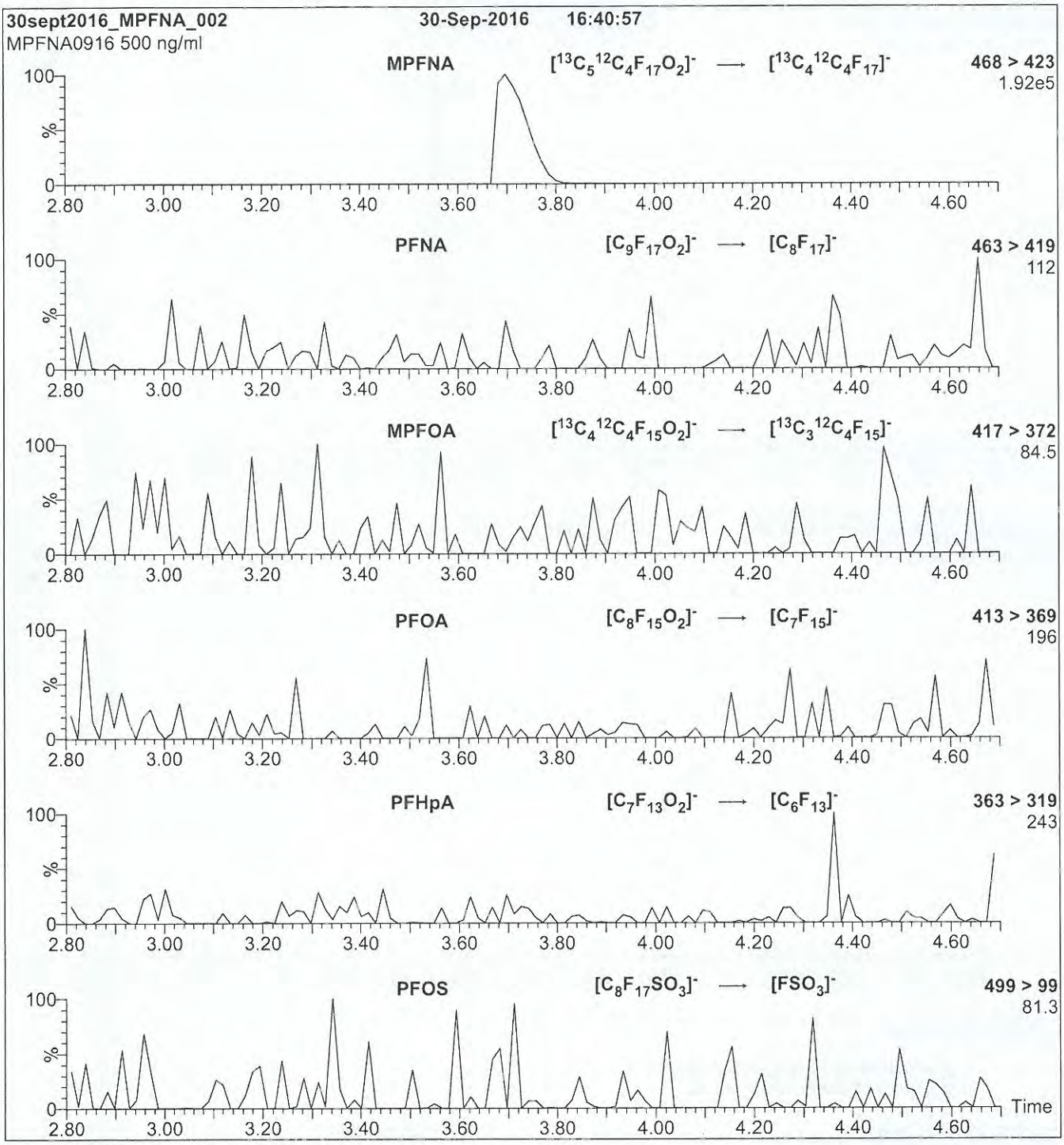
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2321

Figure 2: **MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11

17L2322

WELLINGTON LABORATORIES

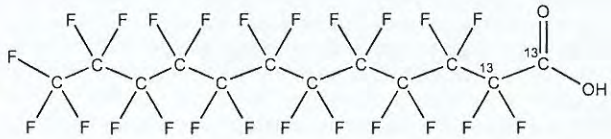
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDoA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid

LOT NUMBER: MPFDoA0517

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{10}HF_{23}O_2$	**MOLECULAR WEIGHT:**	616.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	05/23/2017		
EXPIRY DATE: (mm/dd/yyyy)	05/23/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/26/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2322

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED Reference Material Producer

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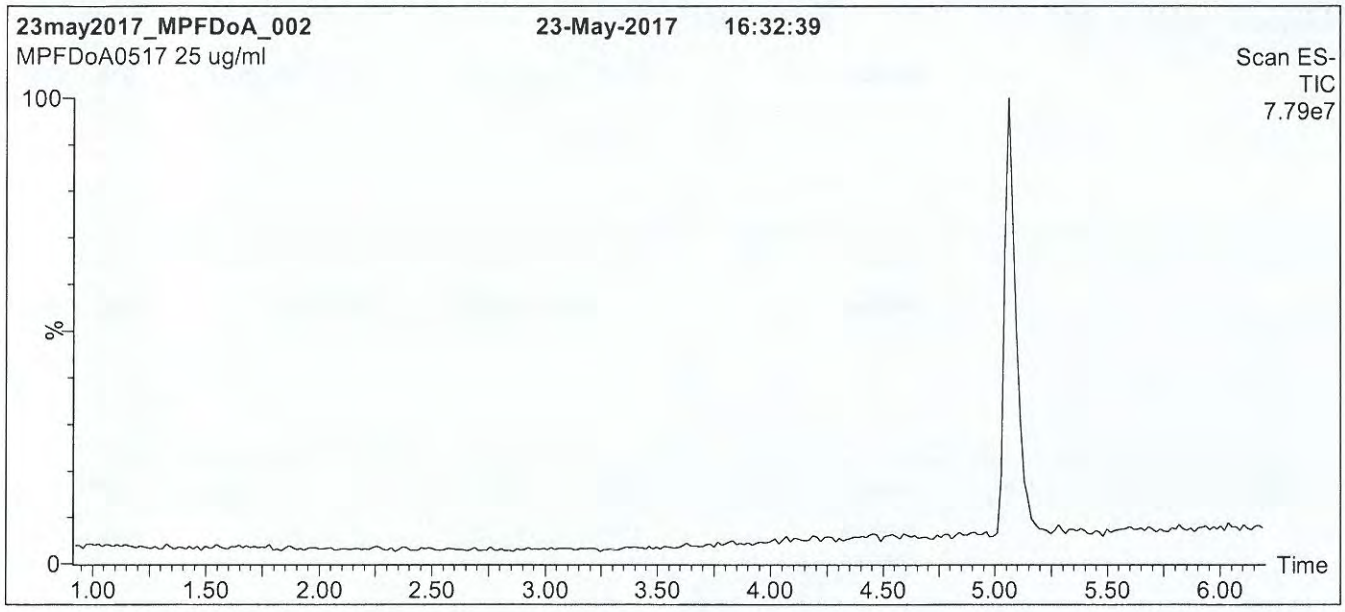
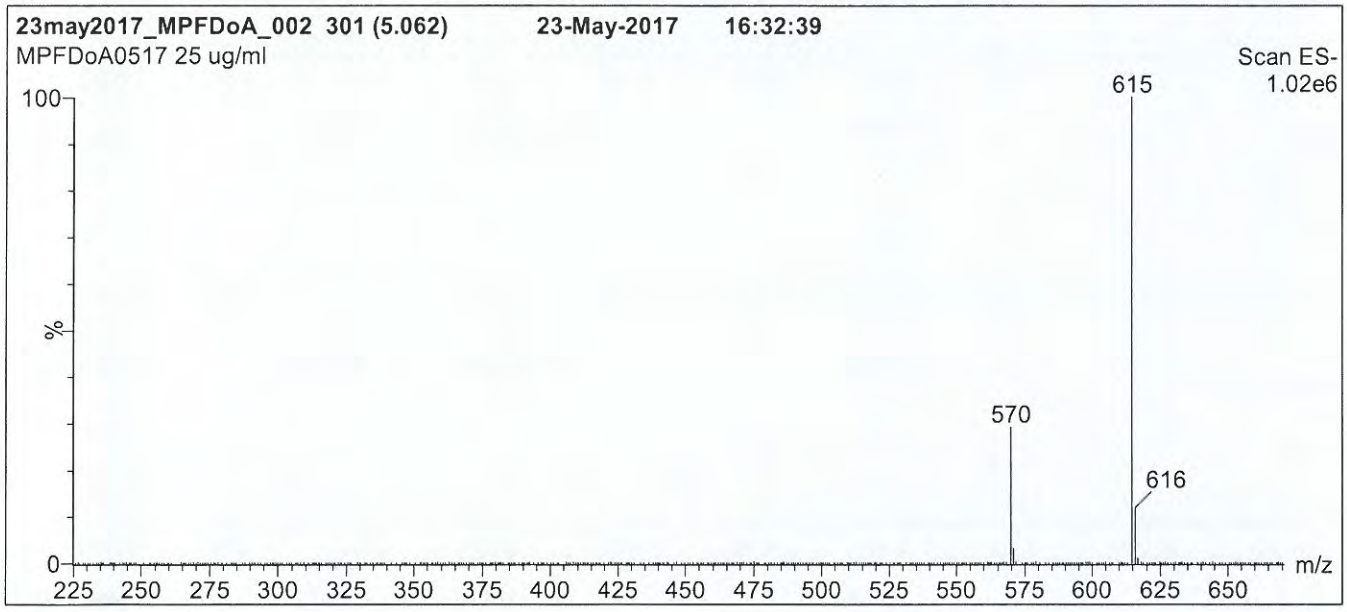
17L2322

Figure 1: **MPFDoA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

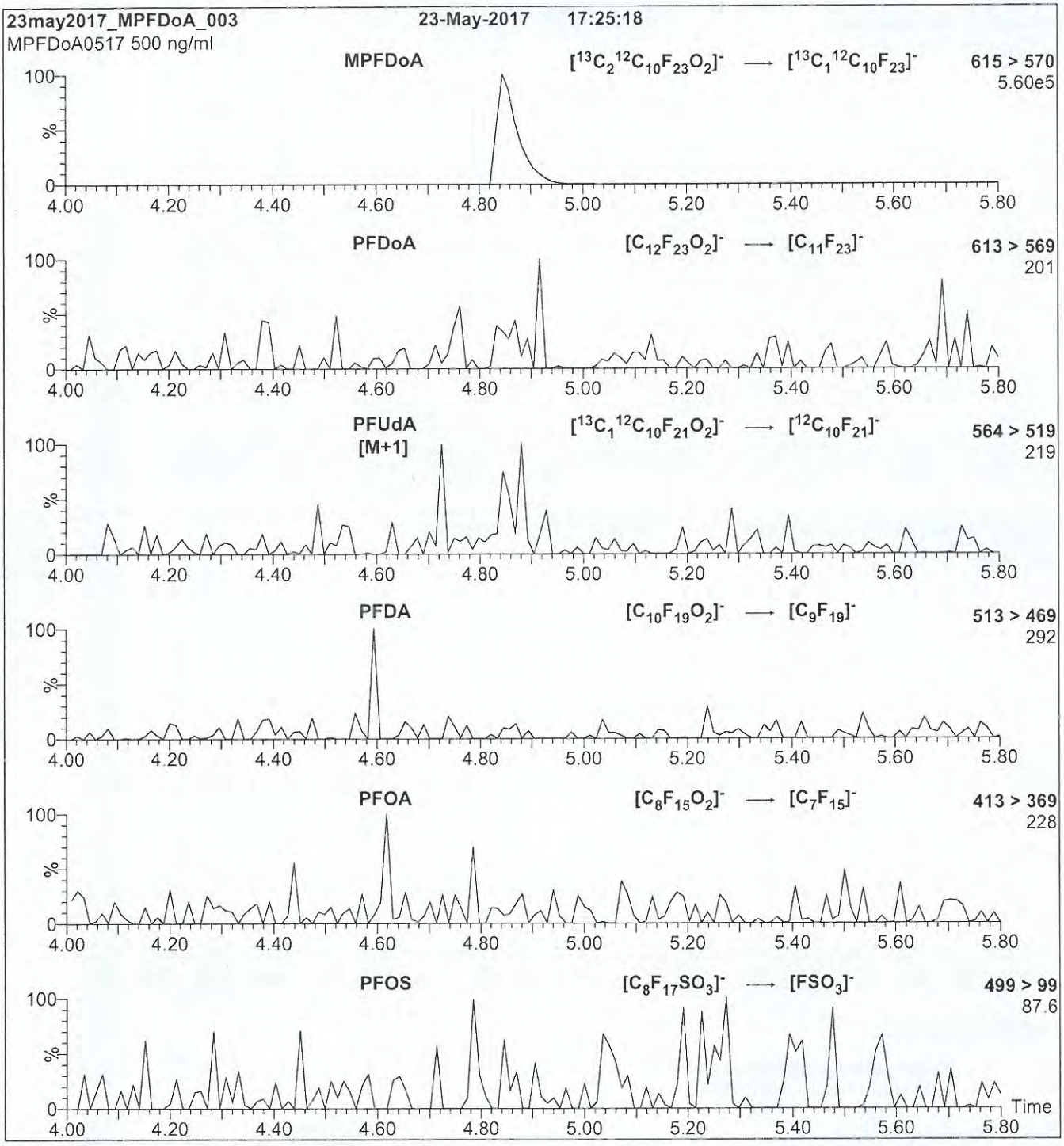
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2322

Figure 2: **MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

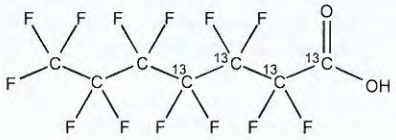
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 13

17L2323

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M4PFHpA	**LOT NUMBER:**	M4PFHpA0517
COMPOUND:	Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_3HF_{13}O_2$	**MOLECULAR WEIGHT:**	368.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	05/03/2017		
EXPIRY DATE: (mm/dd/yyyy)	05/03/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 05/11/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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17L2323

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CALA

ANAB ACCREDITED

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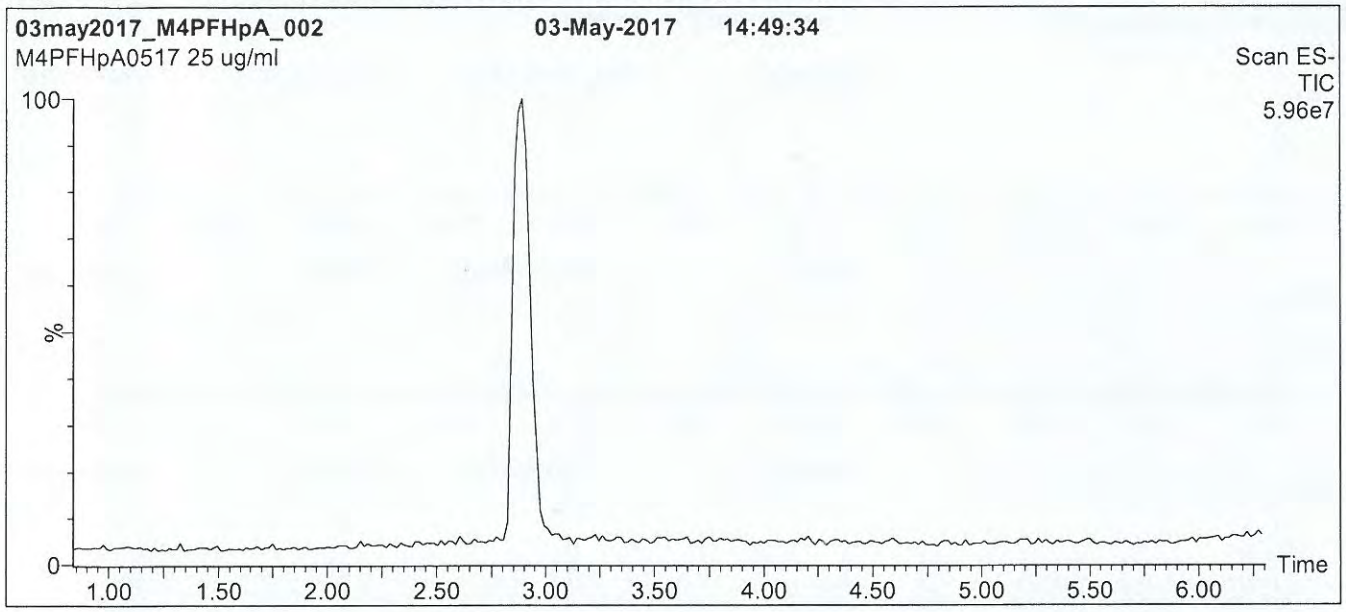
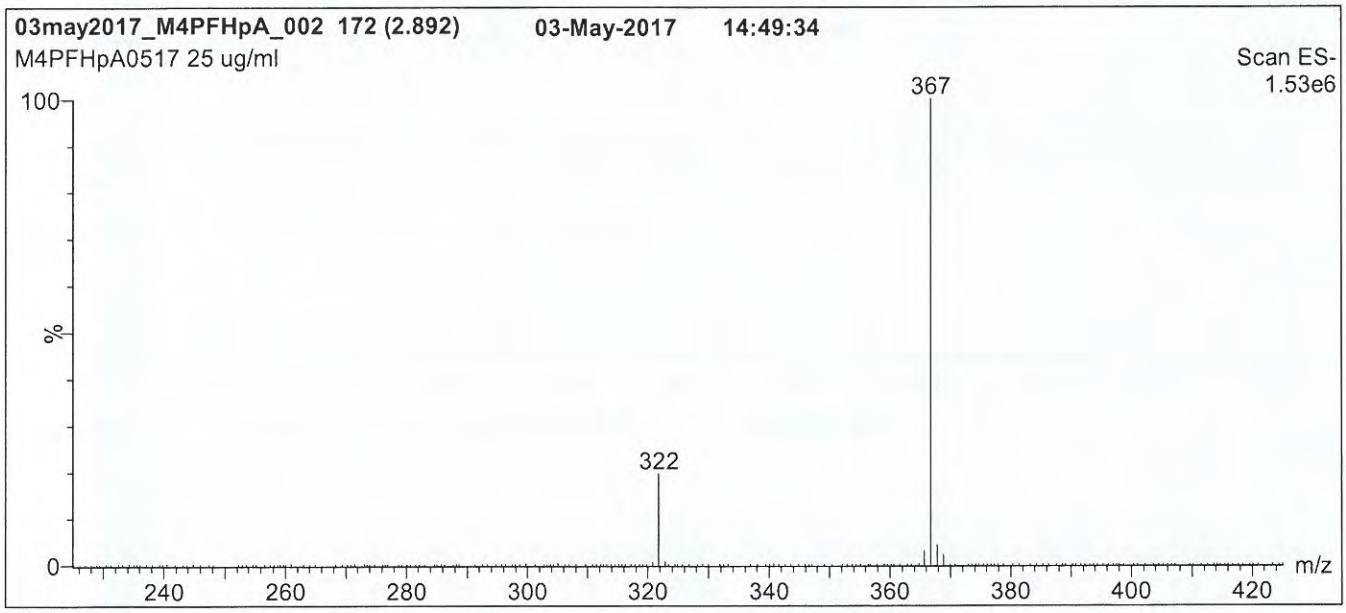
17L2323

Figure 1: **M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

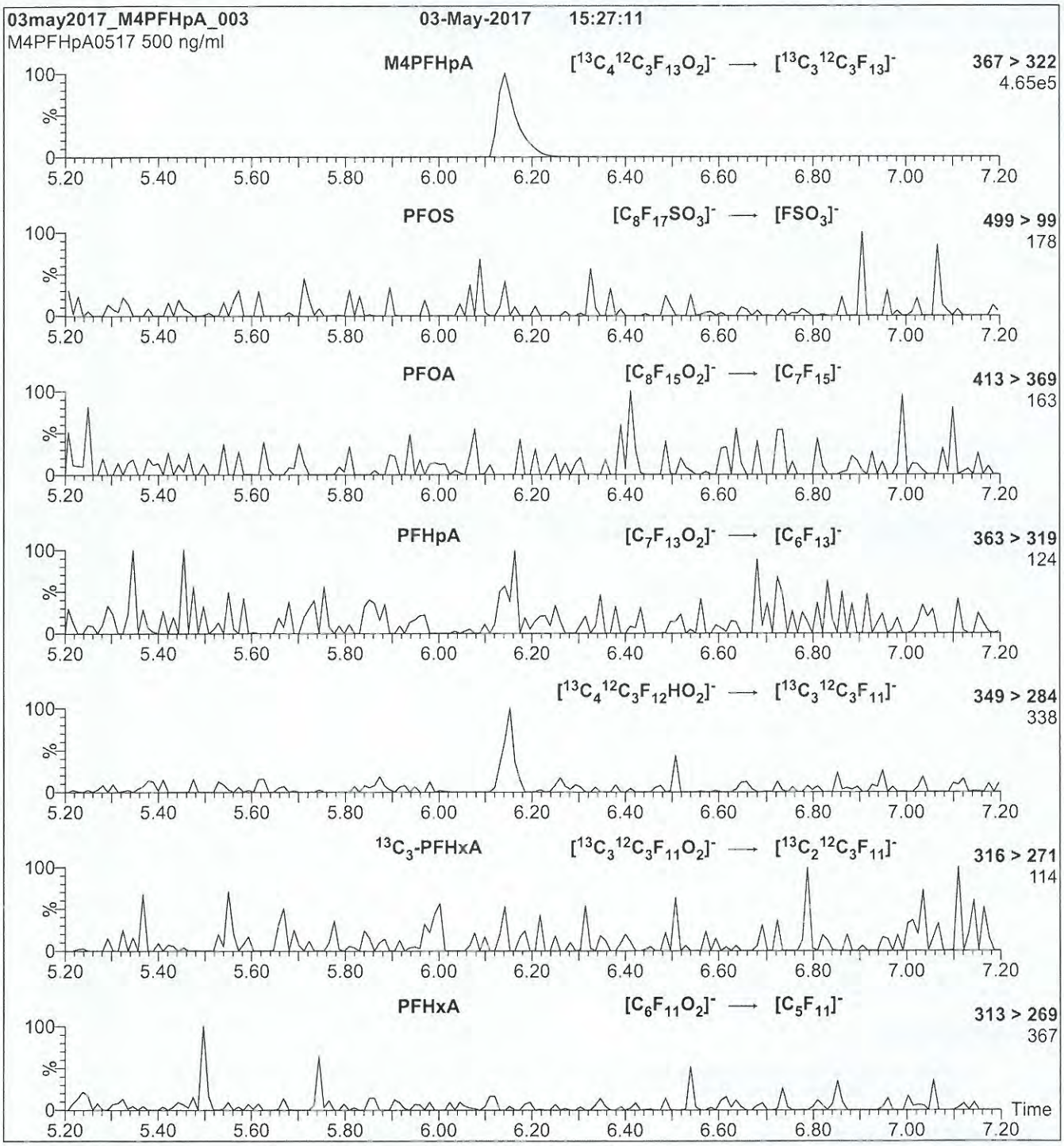
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2323

Figure 2: **M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M4PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 9

17L2324

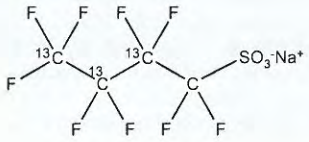
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS0815

COMPOUND: Sodium perfluoro-1-[2,3,4-$^{13}C_3$]butanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}CF_9SO_3Na$	**MOLECULAR WEIGHT:**	325.06
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 46.5 ± 2.3 µg/ml (M3PFBS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($2,3,4\text{-}^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	05/24/2017		
EXPIRY DATE: (mm/dd/yyyy)	05/24/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/25/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2324

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

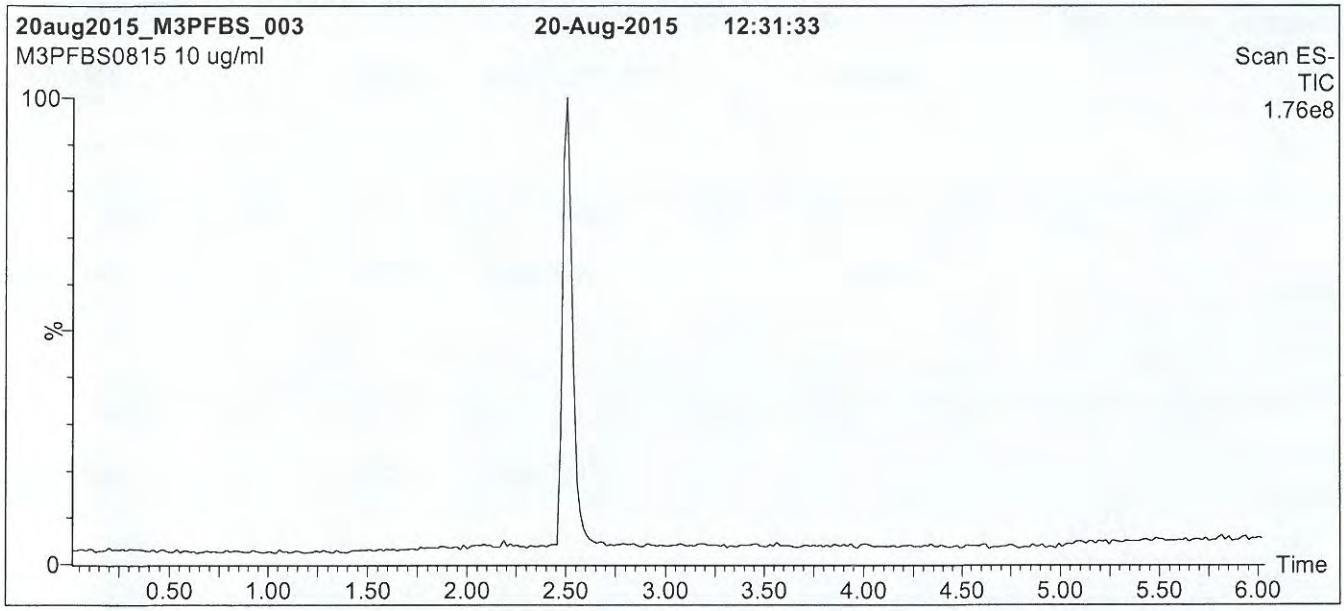
CALA

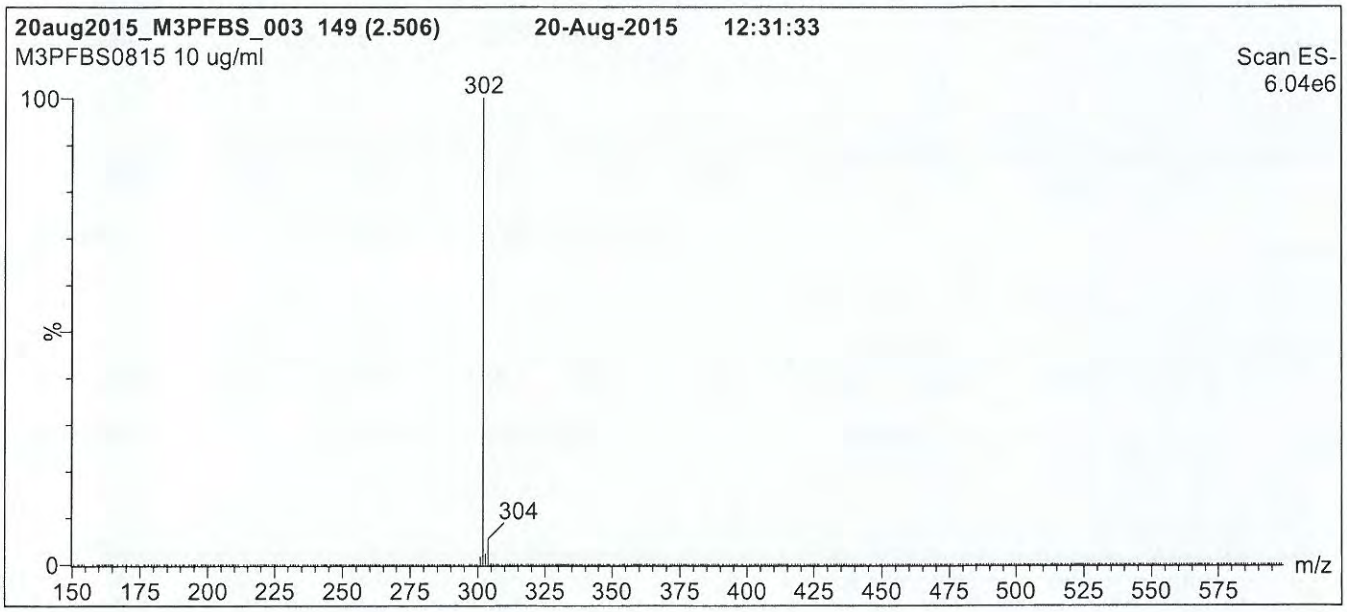
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2324

Figure 1: **M3PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

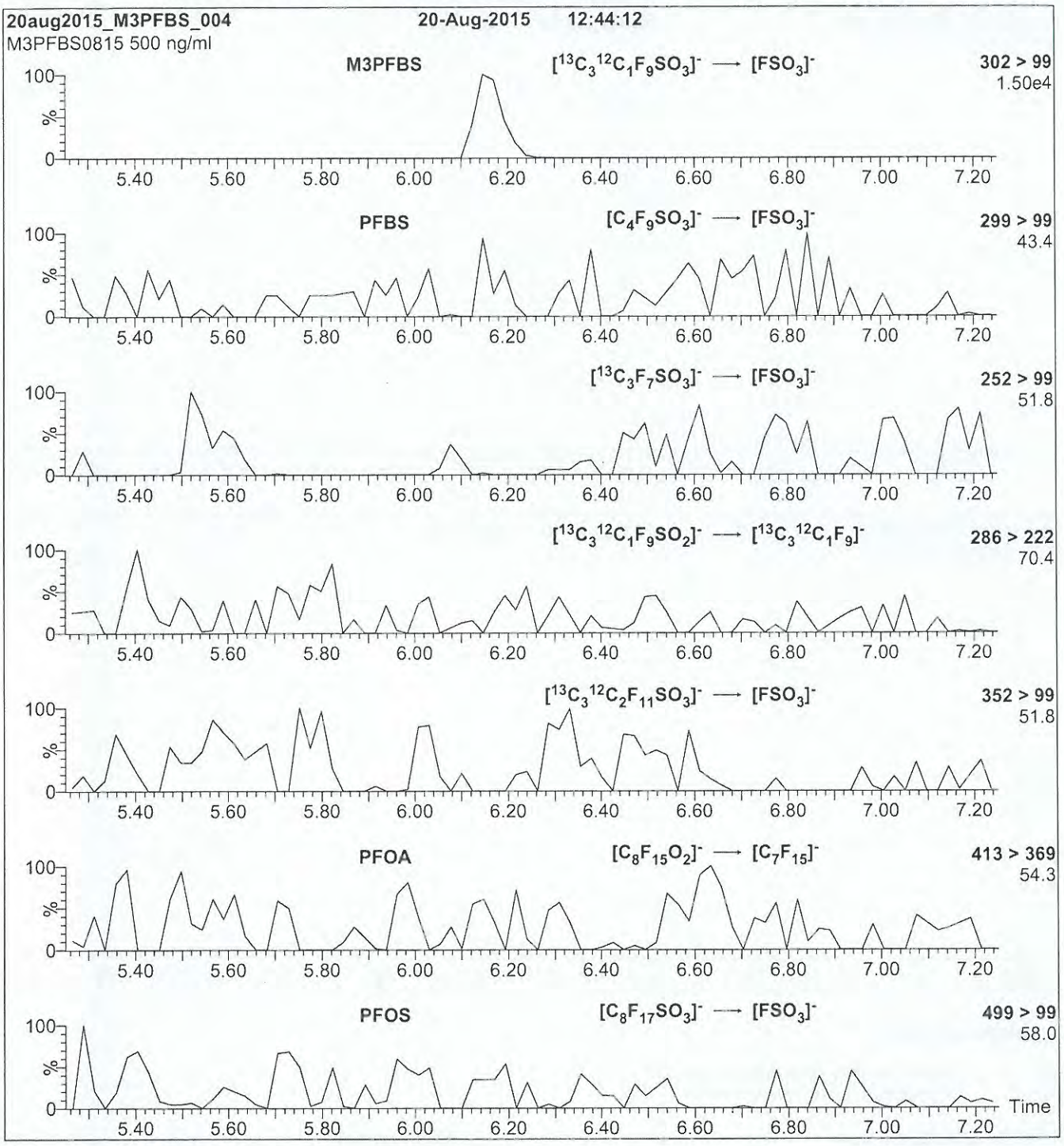
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2324

Figure 2: **M3PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

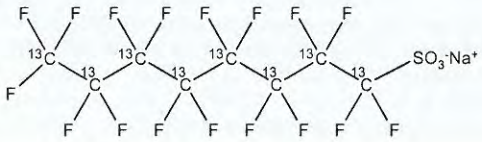
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

17L2325

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOS	**LOT NUMBER:**	M8PFOS1117
COMPOUND:	Sodium perfluoro-1-[$^{13}C_8$]octanesulfonate		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_8F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	530.05
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (M8PFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	11/08/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/08/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-[$^{13}C_7$]heptanesulfonate ($^{13}C_7$-PFHpS) and ~ 0.8% of sodium perfluoro-1-[$^{13}C_4$]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/22/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2325

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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CALA

ANAB ACCREDITED

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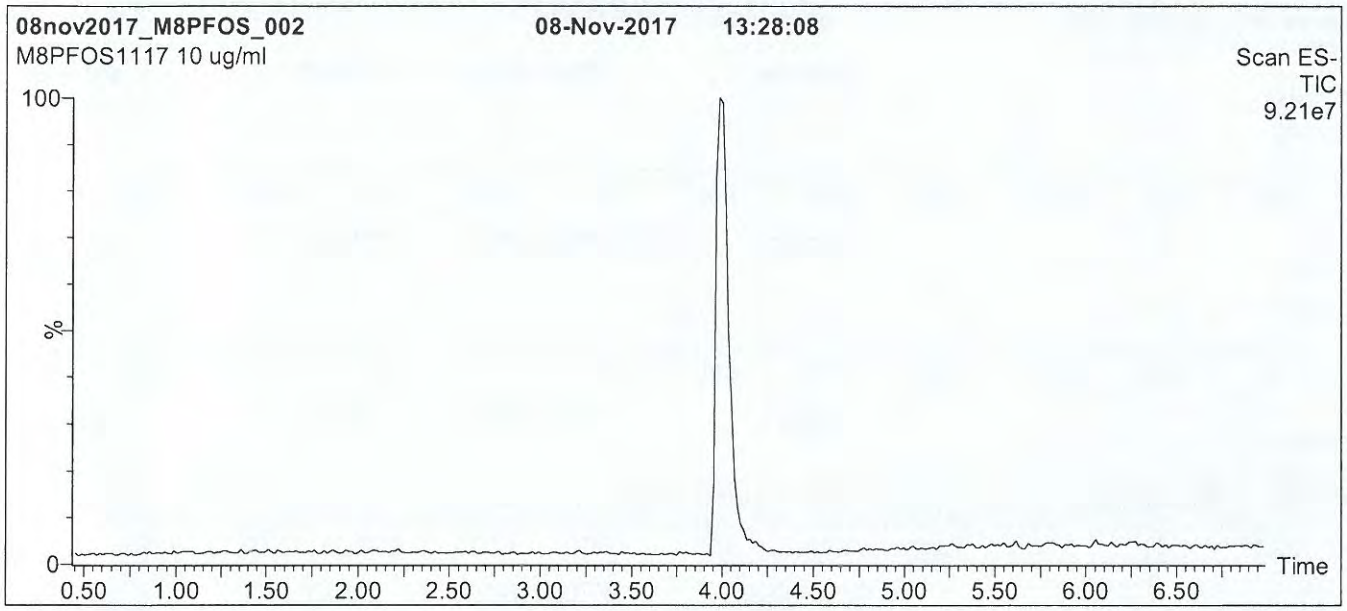
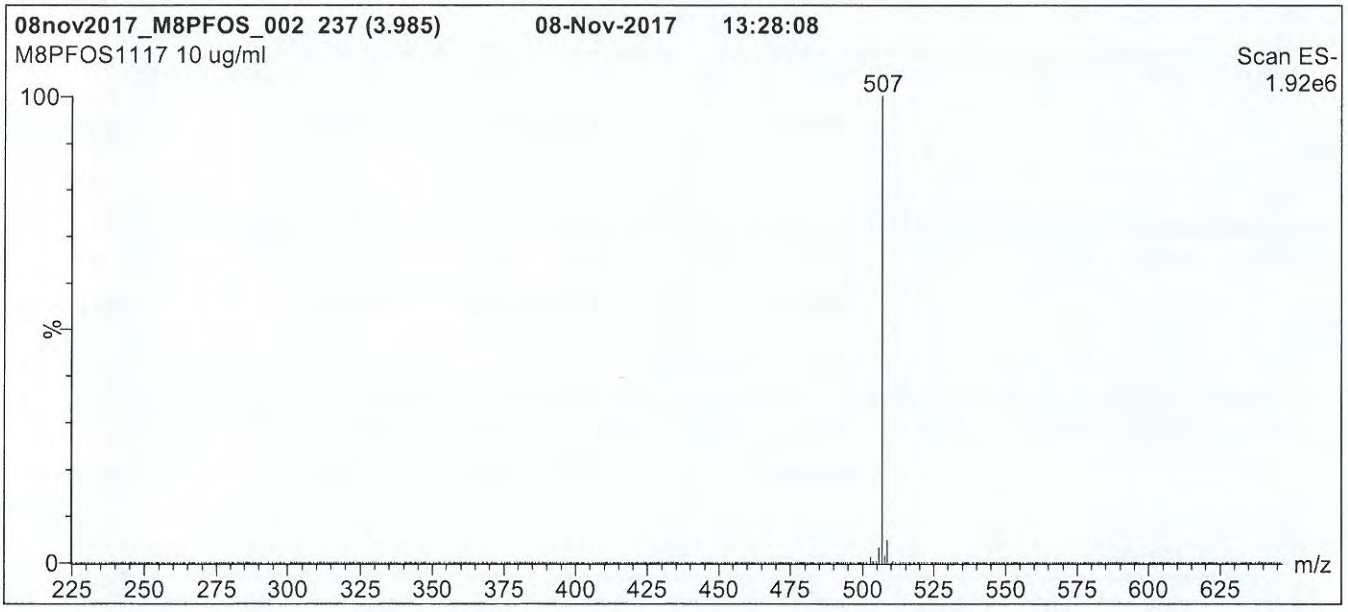
1712325

Figure 1: **M8PFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

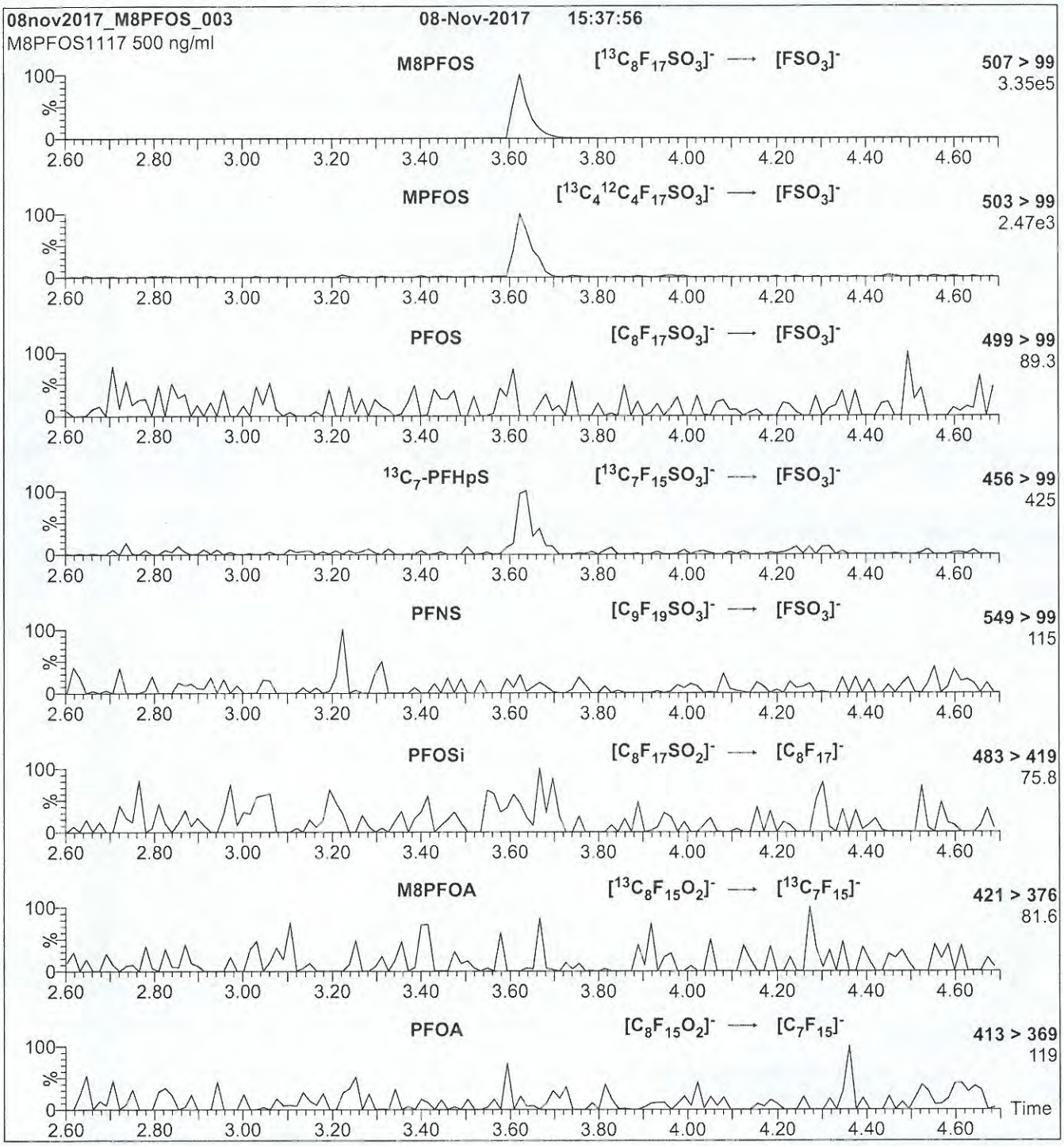
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1712325

Figure 2: **M8PFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M8PFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

17L2326

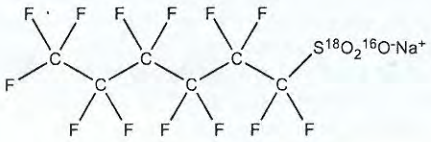
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS
COMPOUND: Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate
LOT NUMBER: MPFHxS0217

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$C_6F_{13}S^{18}O_2{}^{16}ONa$	**MOLECULAR WEIGHT:**	426.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (MPFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>94% ($^{18}O_2$)
LAST TESTED: (mm/dd/yyyy)	02/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	02/17/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS ($C_6F_{13}S^{18}O_2{}^{16}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{16}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 1.0% of sodium perfluoro-1-octane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFOS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 03/02/2017 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2326

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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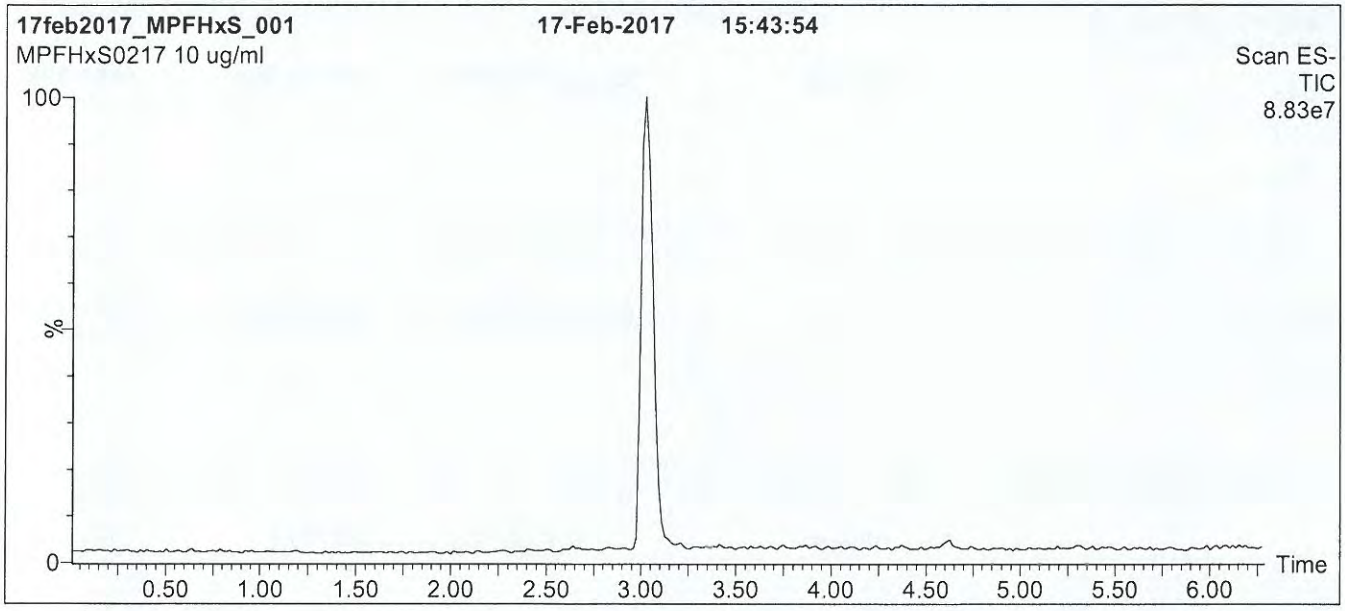
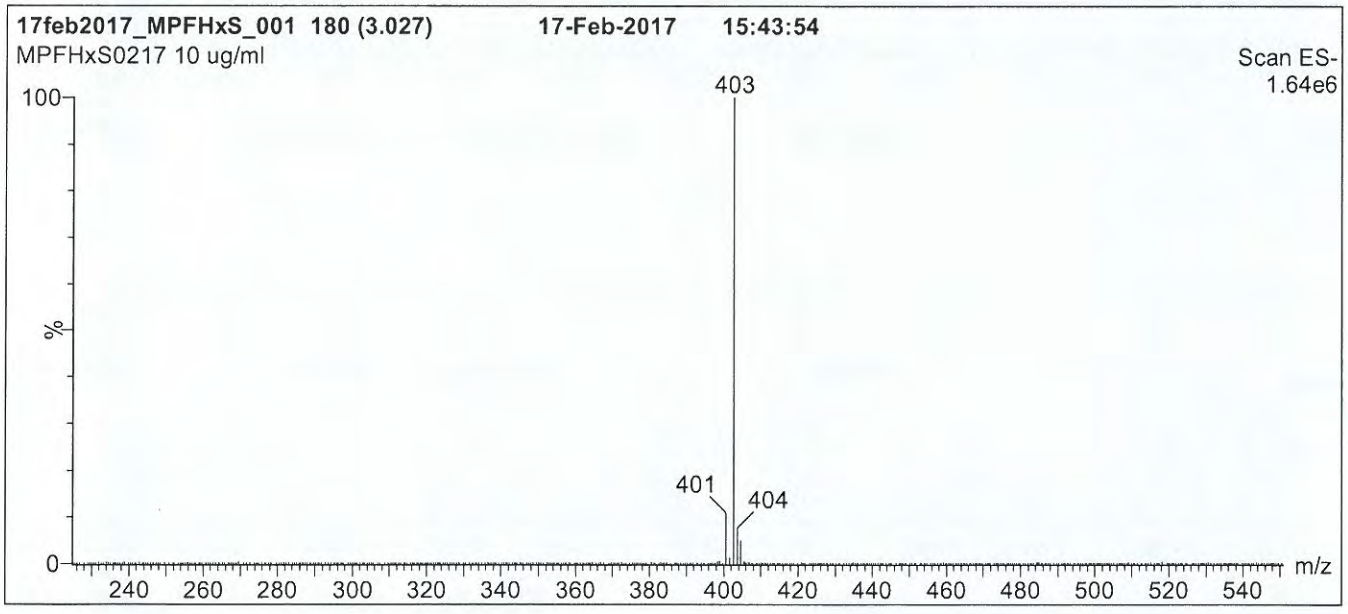
17L2326

Figure 1: **MPFHxS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

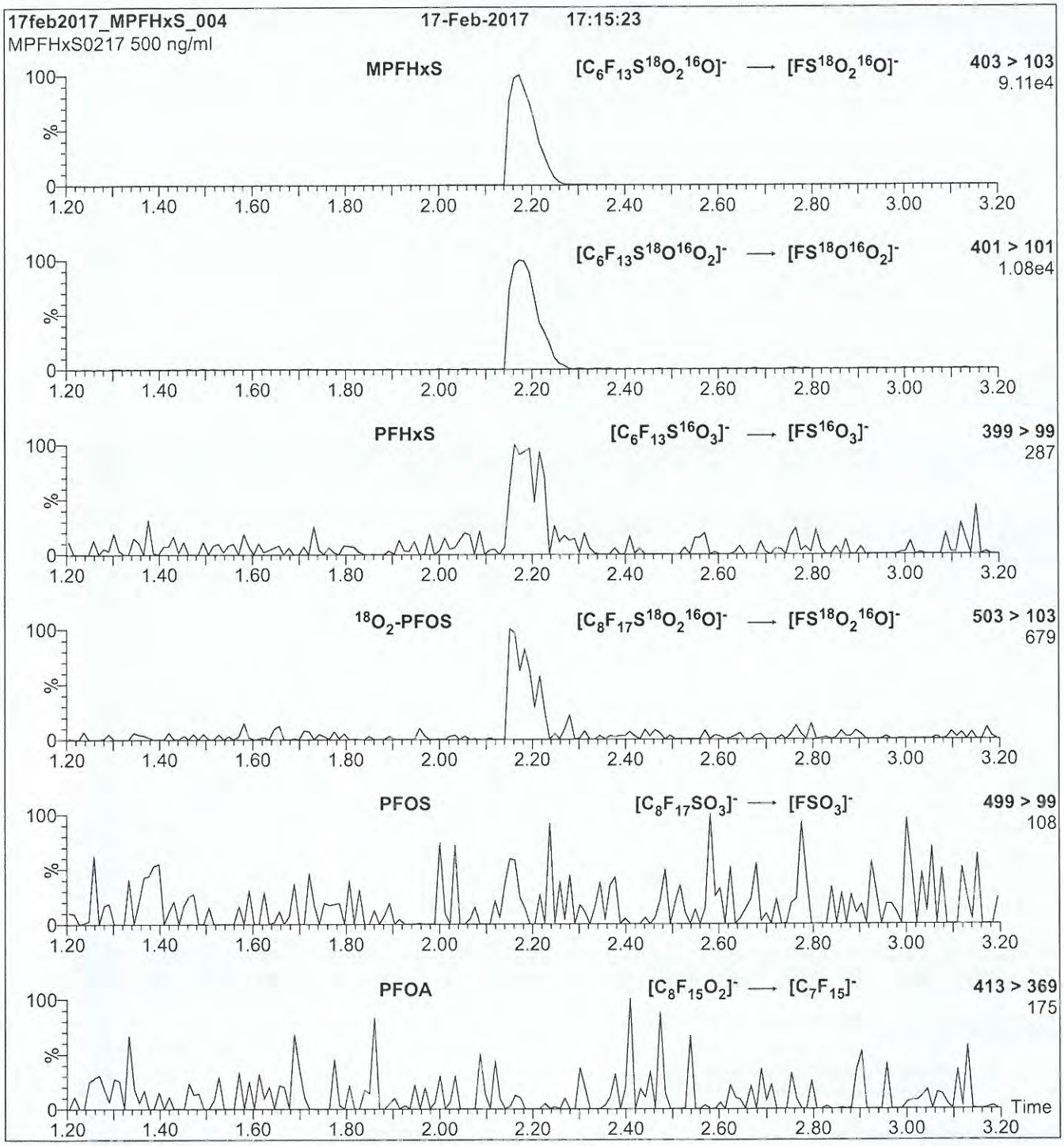
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2326

Figure 2: **MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

1712327

WELLINGTON LABORATORIES

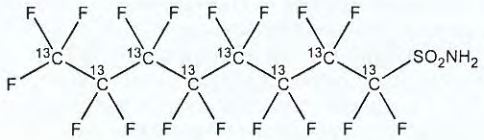
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-[$^{13}C_8$]octanesulfonamide

LOT NUMBER: M8FOSA1017I

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	507.09
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	10/11/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.1% of perfluoro-1-[$^{13}C_4$]octanesulfonamide and ~ 0.01% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2327

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

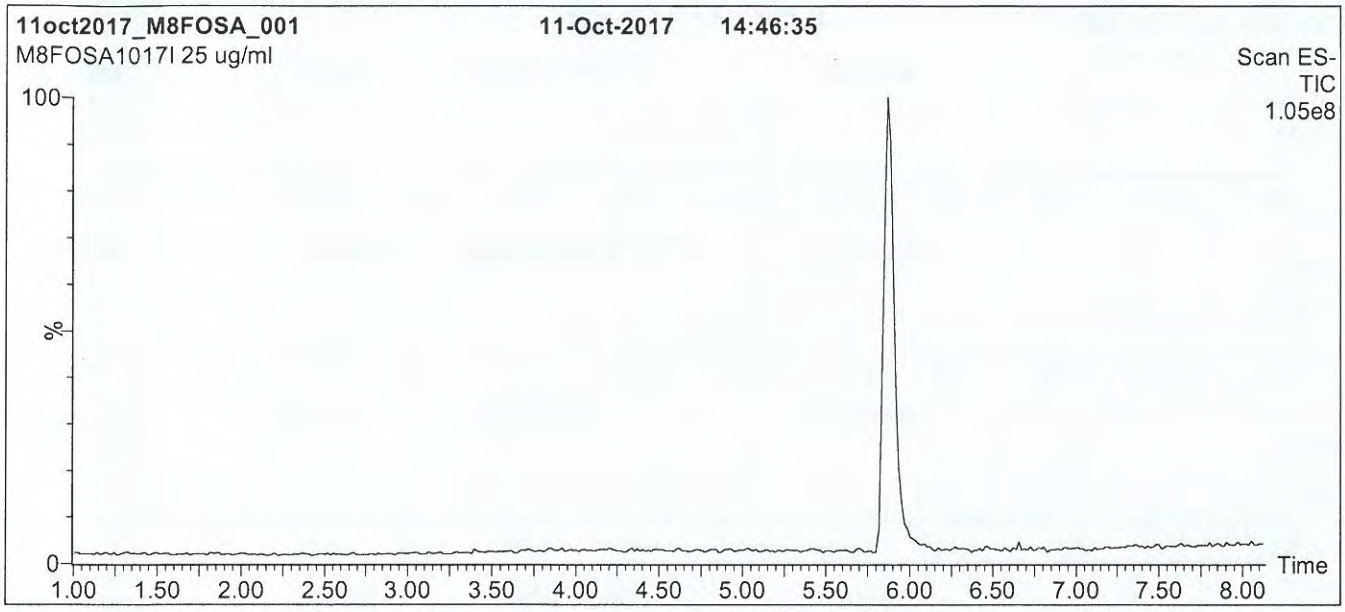
CALA

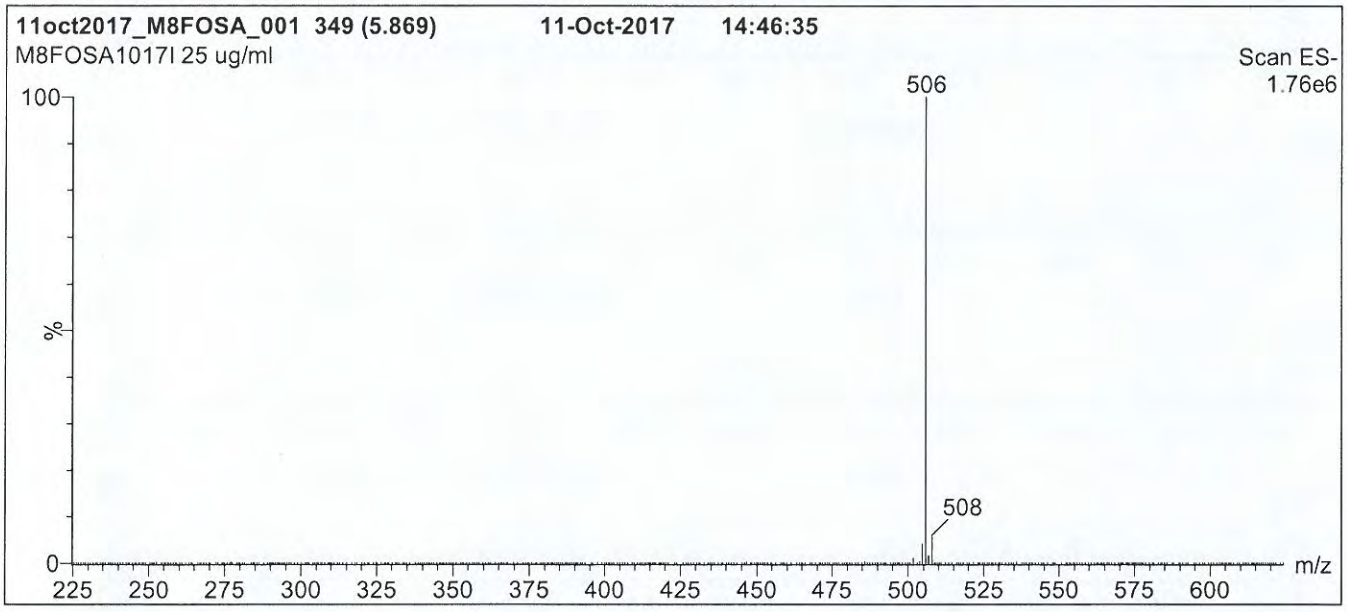
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

INJ 12/22/17 17L2327

Figure 1: **M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

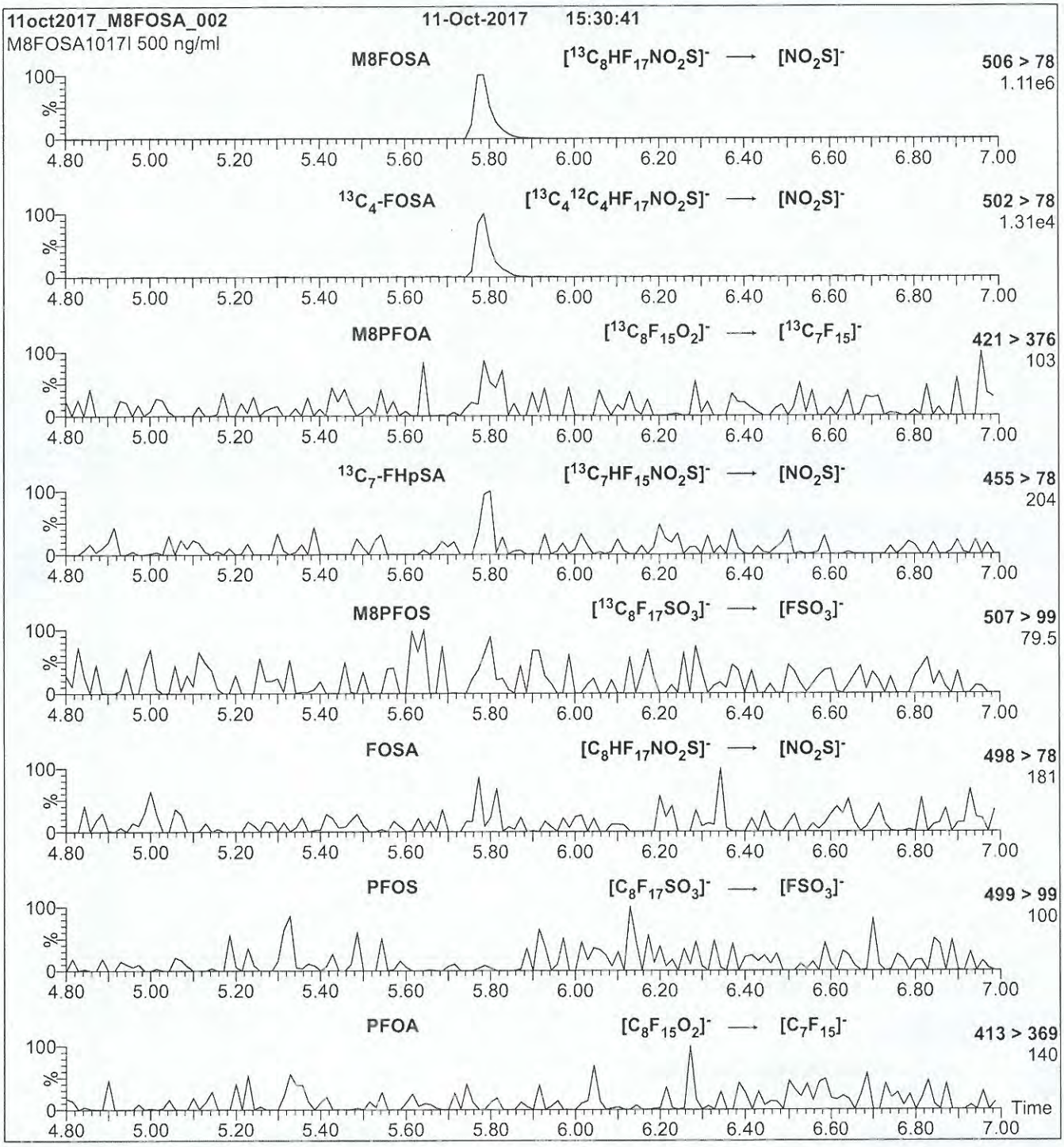
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2327

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M8FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

17L2328

WELLINGTON LABORATORIES

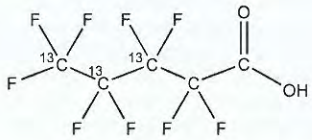
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFPeA
COMPOUND: Perfluoro-n-[3,4,5-$^{13}C_3$]pentanoic acid

LOT NUMBER: M3PFPeA0417

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_2HF_9O_2$	**MOLECULAR WEIGHT:**	267.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($3,4,5$-$^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	04/20/2017		
EXPIRY DATE: (mm/dd/yyyy)	04/20/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.95% of perfluoro-n-[$^{13}C_3$]butanoic acid and 0.05% of perfluoro-1-pentanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/24/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2328

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

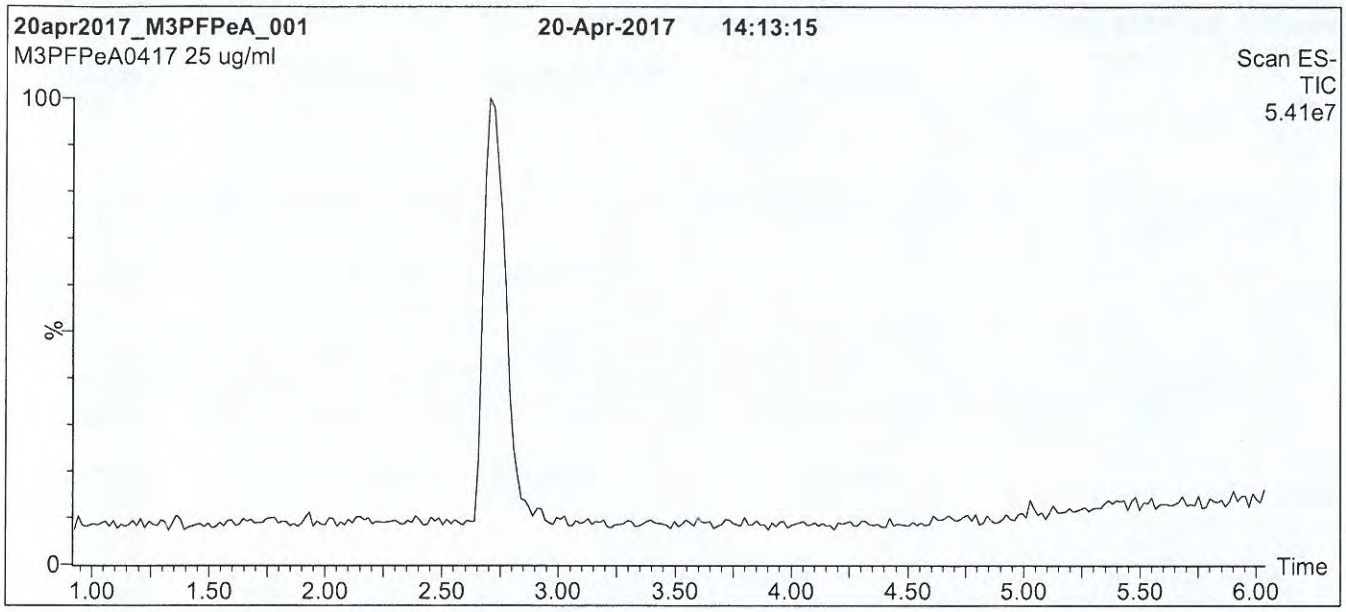
CALA

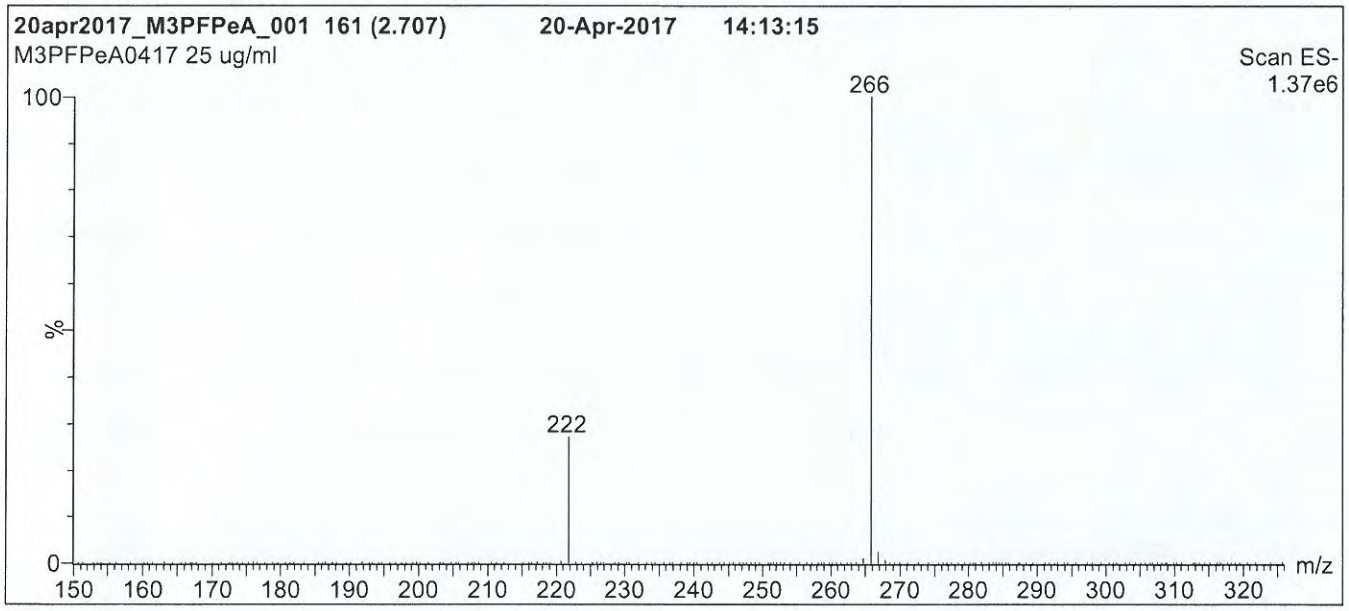
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2328

Figure 1: **M3PFPeA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

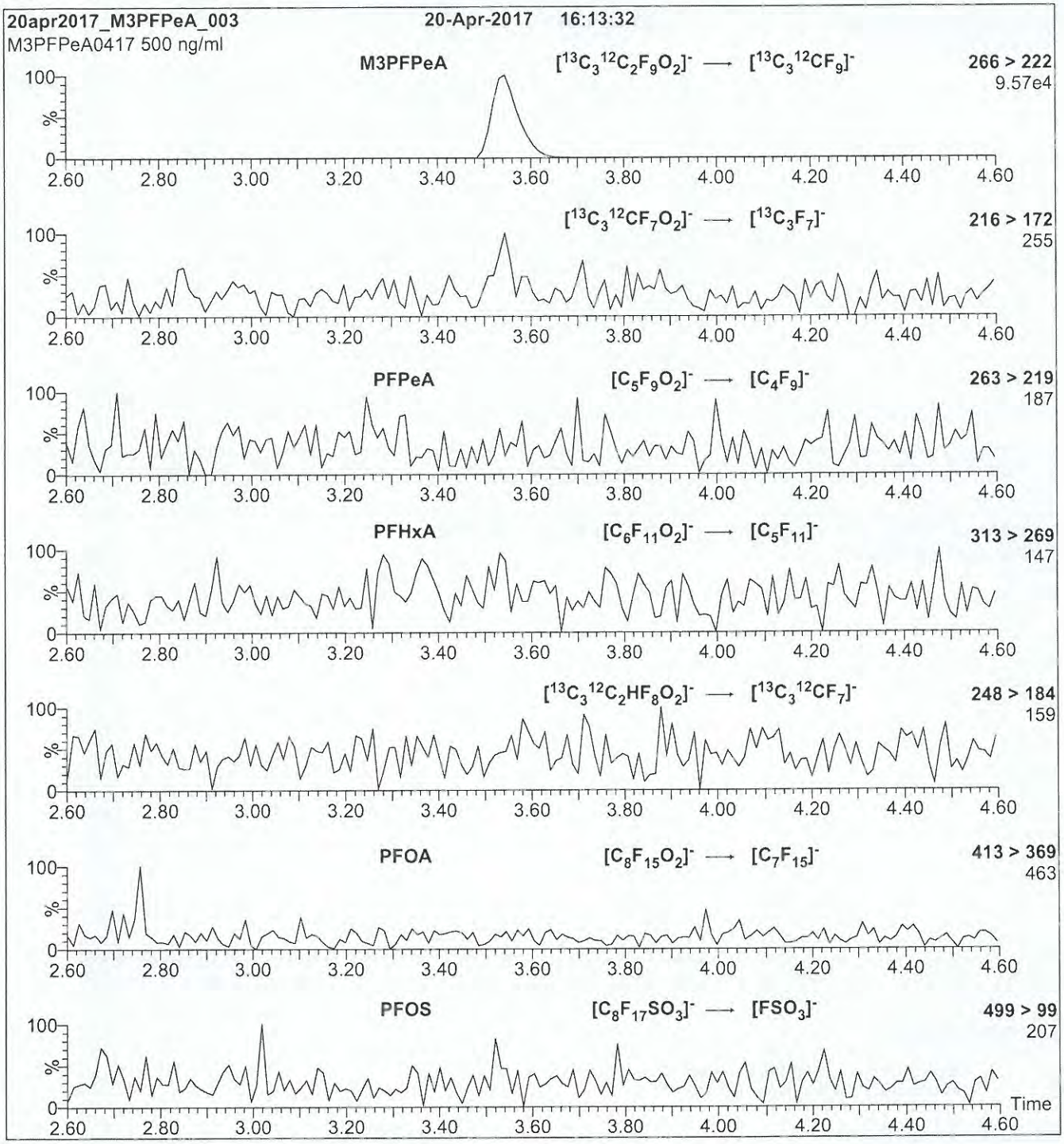
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2328

Figure 2: **M3PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

17L2329

WELLINGTON LABORATORIES

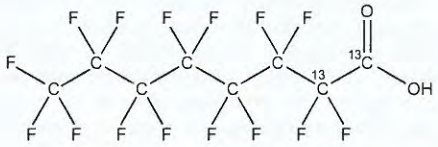
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid

LOT NUMBER: M2PFOA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6HF_{15}O_2$	**MOLECULAR WEIGHT:**	416.05
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/26/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/26/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1712329

INTENDED USE:

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UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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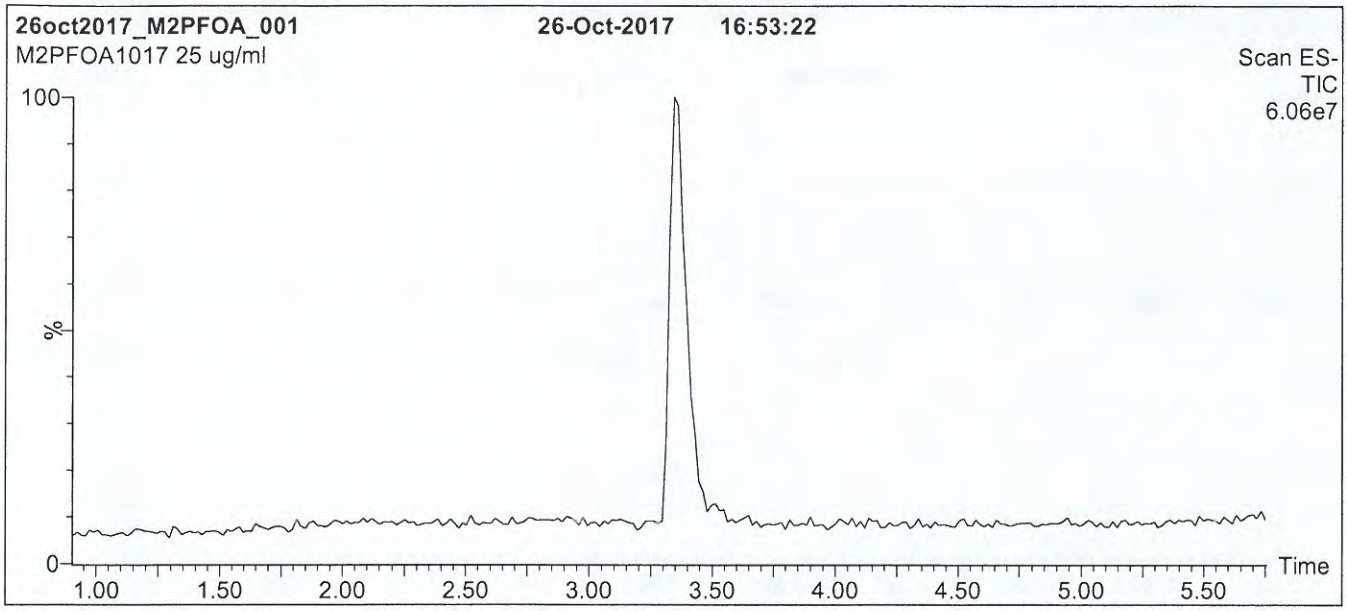
CALA Testing

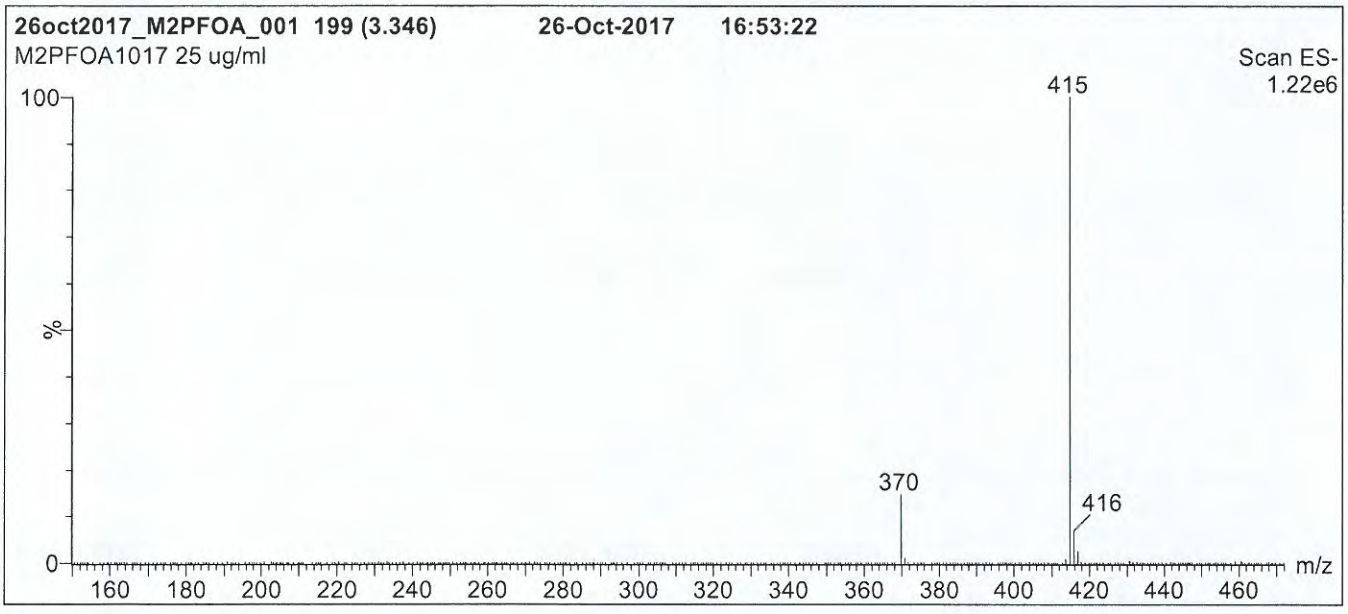
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2329

Figure 1: **M2PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

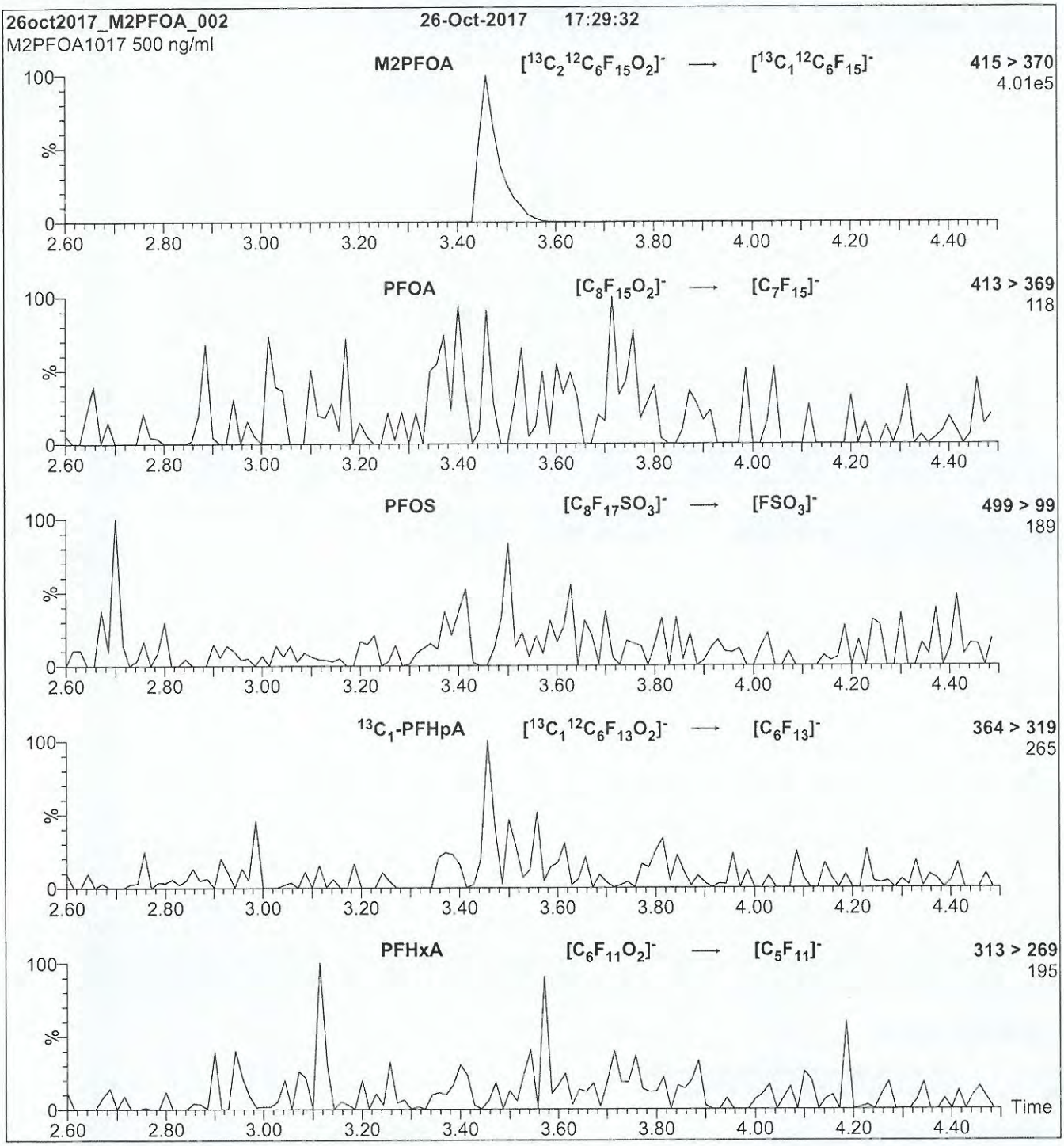
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2329

Figure 2: **M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M2PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
16G1221	br-PFOSK anion	12-Jul-16	** Vendor **	14-Oct-20	0.431
16I3002	N-MeFOSAA	30-Sep-16	** Vendor **	20-Jan-21	0.4
16I3003	N-EtFOSAA	30-Sep-16	** Vendor **	20-Jan-21	0.4
17D2615	br-PFHxSK	26-Apr-17	** Vendor **	04-Jan-22	0.44
17D2620	L-PFDS	26-Apr-17	** Vendor **	17-Feb-22	0.415
17G1313	PFTrDA	13-Jul-17	** Vendor **	02-May-22	0.4
17G1326	L-PFHpS	13-Jul-17	** Vendor **	18-Oct-21	0.42
17G1809	PFBA	18-Jul-17	** Vendor **	29-May-22	0.4
17H0820	PFDoA	08-Aug-17	** Vendor **	31-May-21	0.4
17H0821	PFNA	08-Aug-17	** Vendor **	30-Sep-21	0.4
17H0822	PFPeA	08-Aug-17	** Vendor **	14-Jun-22	0.4
17H0823	PFOA	08-Aug-17	** Vendor **	17-Feb-22	0.4
17H0824	PFUdA	08-Aug-17	** Vendor **	18-Oct-21	0.4
17H0825	PFHxDA	08-Aug-17	** Vendor **	25-May-21	0.4
17H0826	PFHpA	08-Aug-17	** Vendor **	02-Dec-21	0.4
17K0815	L-PFPeS	08-Nov-17	** Vendor **	11-Jan-22	0.428
17K0817	L-PFNS	08-Nov-17	** Vendor **	27-Sep-22	0.418
17K0823	4:2 FTS	08-Nov-17	Kyle Byrd-Fisher	12-Dec-21	0.43
17L2008	FOSA-I	20-Dec-17	** Vendor **	01-Sep-22	0.4
17L2009	PFTeDA	20-Dec-17	** Vendor **	21-Sep-22	0.4
17L2013	PFDA	20-Dec-17	** Vendor **	29-May-22	0.4
17L2014	PFHxA	20-Dec-17	** Vendor **	27-Sep-22	0.4
17L2020	PFODA	20-Dec-17	** Vendor **	13-Jul-22	0.4
17L2021	L-PFBS	20-Dec-17	** Vendor **	21-Sep-22	0.454
17L2022	8:2FTS	20-Dec-17	** Vendor **	12-Dec-21	0.418
17L2023	6:2FTS	20-Dec-17	** Vendor **	20-Apr-22	0.422
17L2031	N-EtFOSA-M	20-Dec-17	** Vendor **	05-Jul-22	2
17L2032	N-MeFOSA-M	20-Dec-17	** Vendor **	05-Jul-22	2
17L2033	N-EtFOSE-M	20-Dec-17	** Vendor **	24-Apr-22	2
17L2034	N-MeFOSE-M	20-Dec-17	** Vendor **	24-Apr-22	2

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
L-PFDS		1	ug/mL
L-PFTrDA		1	ug/mL
L-PFTeDA		1	ug/mL
L-PFPeA		1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
L-PFOSA		1	ug/mL
L-PFOS		0.789	ug/mL
L-PFODA		1	ug/mL
L-PFOA		1	ug/mL
L-PFNA		1	ug/mL
L-PFHxS		0.812	ug/mL
L-PFHxDA		1	ug/mL
L-PFHxA		1	ug/mL
4:2 FTS		1	ug/mL
L-PFHpA		1	ug/mL
MeFOSAA	2355-31-9	1	ug/mL
L-PFDoA		1	ug/mL
L-PFDA		1	ug/mL
L-PFBS		1	ug/mL
L-PFBA		1	ug/mL
L-8:2FTS		1	ug/mL
L-6:2 FTS		1	ug/mL
EtFOSE	1691-99-2	5	ug/mL
EtFOSAA	2991-50-6	1	ug/mL
EtFOSA	4151-50-2	5	ug/mL
Br-PFHxS	3871-99-6	0.189	ug/mL
8:2 FTS	39108-34-4	1	ug/mL
6:2 FTS	27619-97-2	1	ug/mL
L-PFHpS		1	ug/mL
PFNA	375-95-1	1	ug/mL
Total PFHxS		1	ug/mL
Total PFHpS		1	ug/mL
Total PFDS		1	ug/mL
Total 6:2 FTS		1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFTeDA	376-06-7	1	ug/mL
PFPeS	630402-22-1	1	ug/mL
PFPeA	2706-90-3	1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
PFOSA	754-91-6	1	ug/mL
PFOS	1763-23-1	1	ug/mL
PFODA	16517-11-6	1	ug/mL
L-PFUnA		1	ug/mL
PFNS	98789-57-2	1	ug/mL
MeFOSA	31506-32-8	5	ug/mL
PFHxS	355-46-4	1	ug/mL
PFHxDA	67905-19-5	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHpS	375-92-8	1	ug/mL
PFHpA	375-85-9	1	ug/mL
PFDS	335-77-3	1	ug/mL
PFDoA	307-55-1	1	ug/mL
PFDA	335-76-2	1	ug/mL
PFBS	375-73-5	1	ug/mL
PFBA	375-22-4	1	ug/mL
MeFOSE	24448-09-7	5	ug/mL
Total PFUnA		1	ug/mL
PFOA	335-67-1	1	ug/mL

1681221

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFOSK
LOT NUMBER:	brPFOSK1015
CONCENTRATION:	50 ± 2.5 µg/ml (total potassium salt)
	46.4 ± 2.3 µg/ml (total PFOS anion)
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	10/13/2015
LAST TESTED: (mm/dd/yyyy)	10/14/2015
EXPIRY DATE: (mm/dd/yyyy)	10/14/2020
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

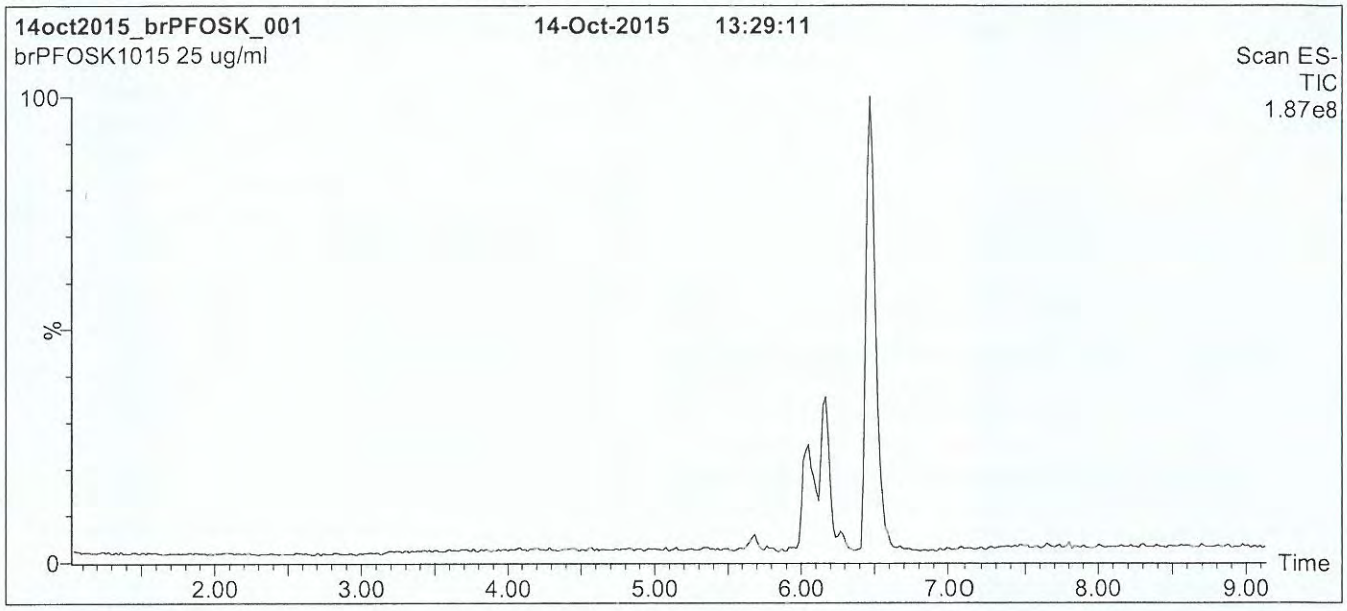
Table A: **br-PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

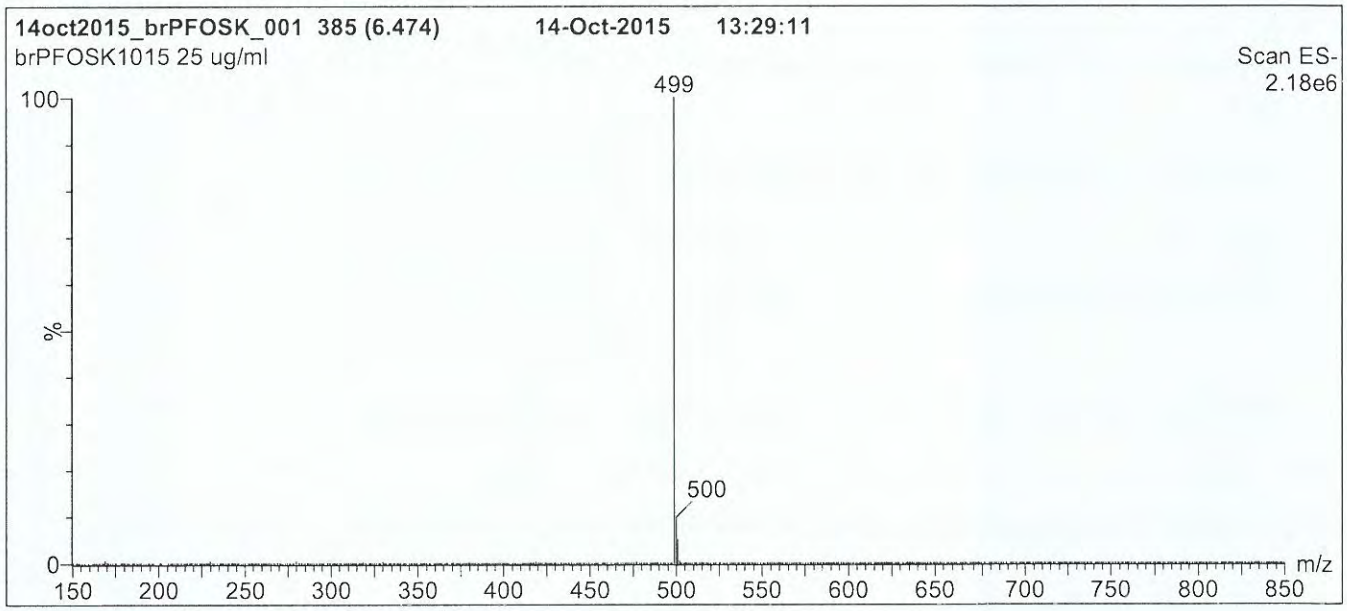
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 10/15/2015
B.G. Chittim (mm/dd/yyyy)

Figure 1: br-PFOSK; LC/MS Data (TIC and Mass Spectrum)





Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 12 min and hold for 2 min.
Return to initial conditions over 0.5 min.
Time: 16 min

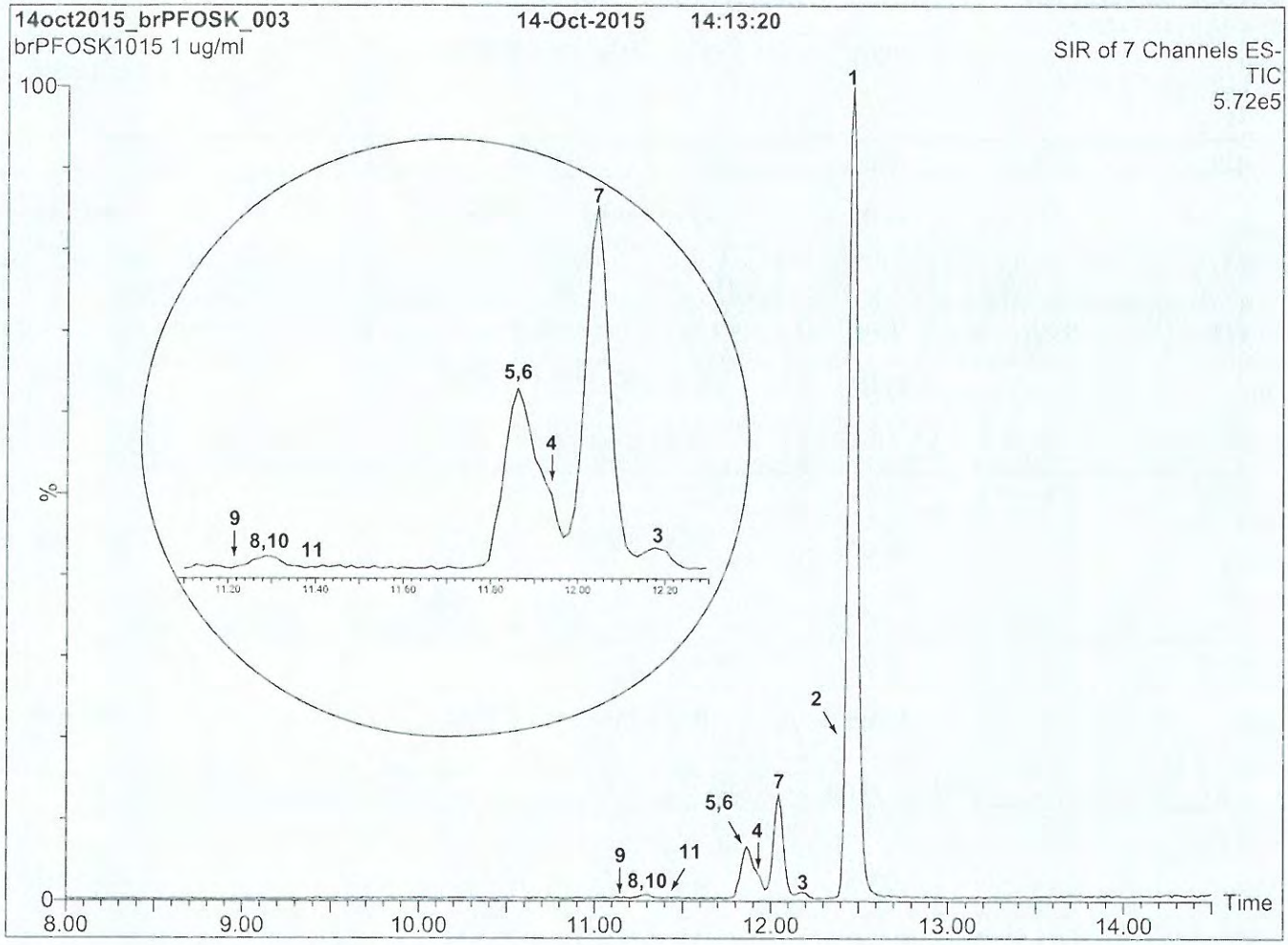
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-PFOSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18} (1.7 µm, 2.1 x 100 mm)

Injection: 1.0 µg/ml of br-PFOSK

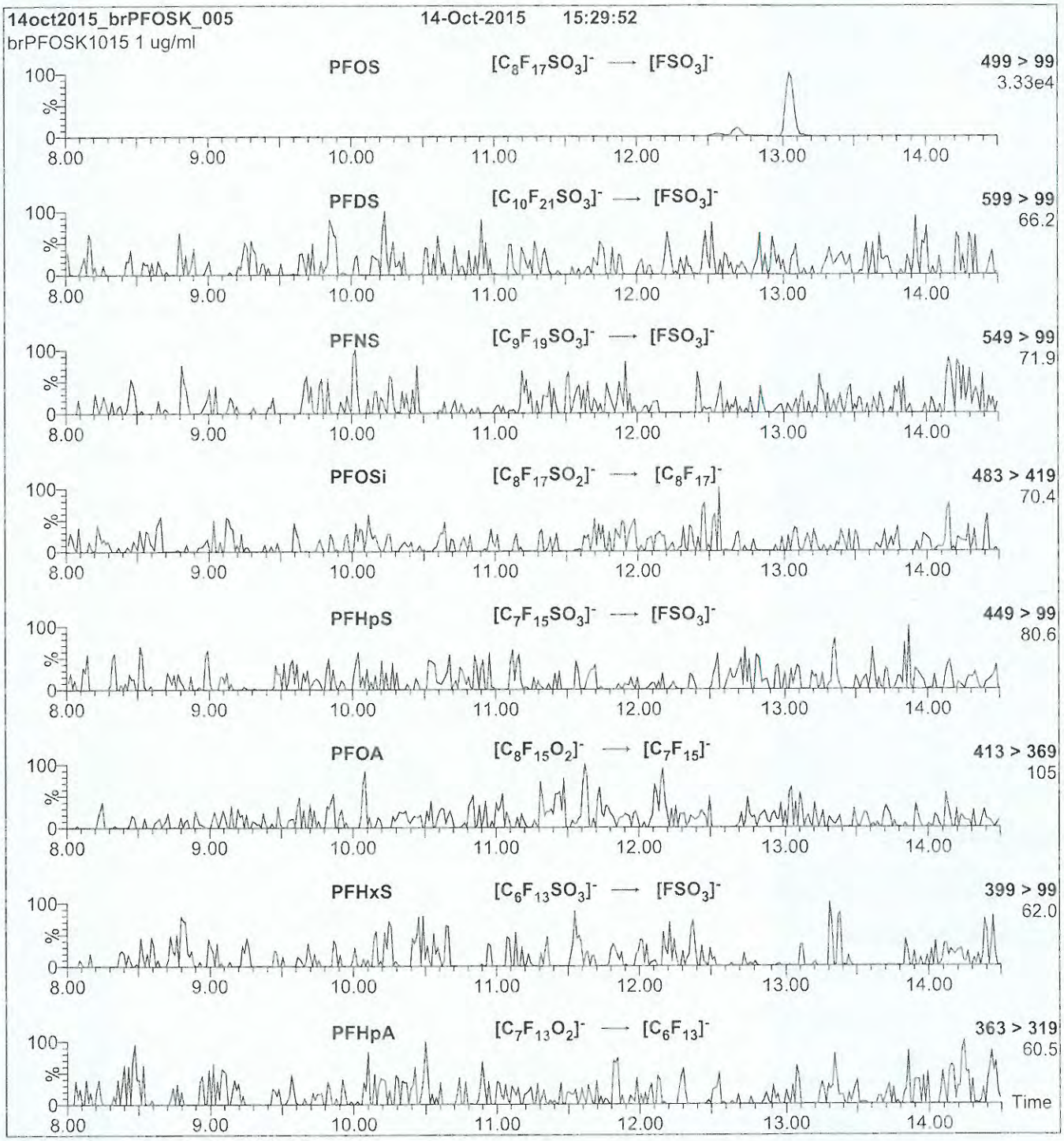
Mobile Phase: Gradient
45% (80:20 MeOH:ACN) / 55% H_2O (both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 15 min and hold for 3 min.
Return to initial conditions over 1 min.
Time: 20 min

Flow: 300 µl/min

MS Conditions:

SIR (ES^-)
Source = 110 °C
Desolvation = 325 °C
Cone Voltage = 60V

Figure 3: **br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.06e-3
Collision Energy (eV) = 11-50 (variable)

IGI3002

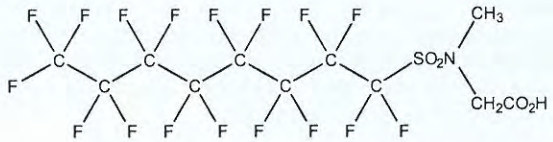
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSAA **LOT NUMBER:** NMeFOSAA0116

COMPOUND: N-methylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 2355-31-9



MOLECULAR FORMULA: $C_{11}H_6F_{17}NO_4S$ **MOLECULAR WEIGHT:** 571.21

CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 01/20/2016

EXPIRY DATE: (mm/dd/yyyy) 01/20/2021

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 01/21/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

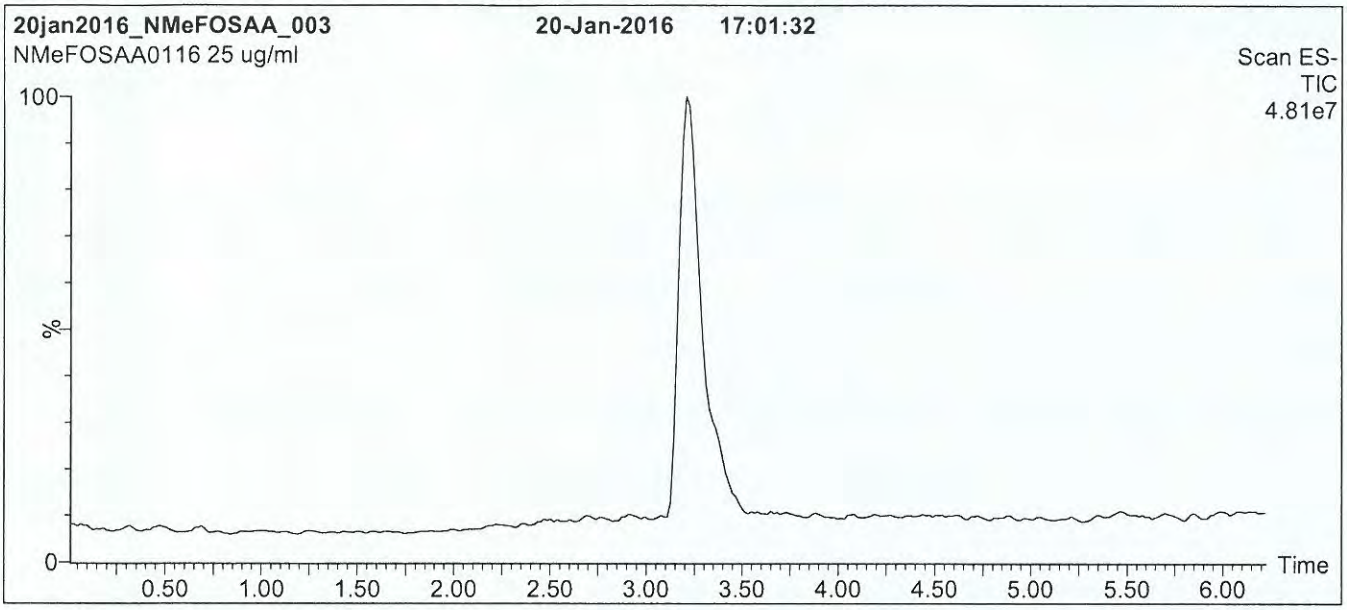
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

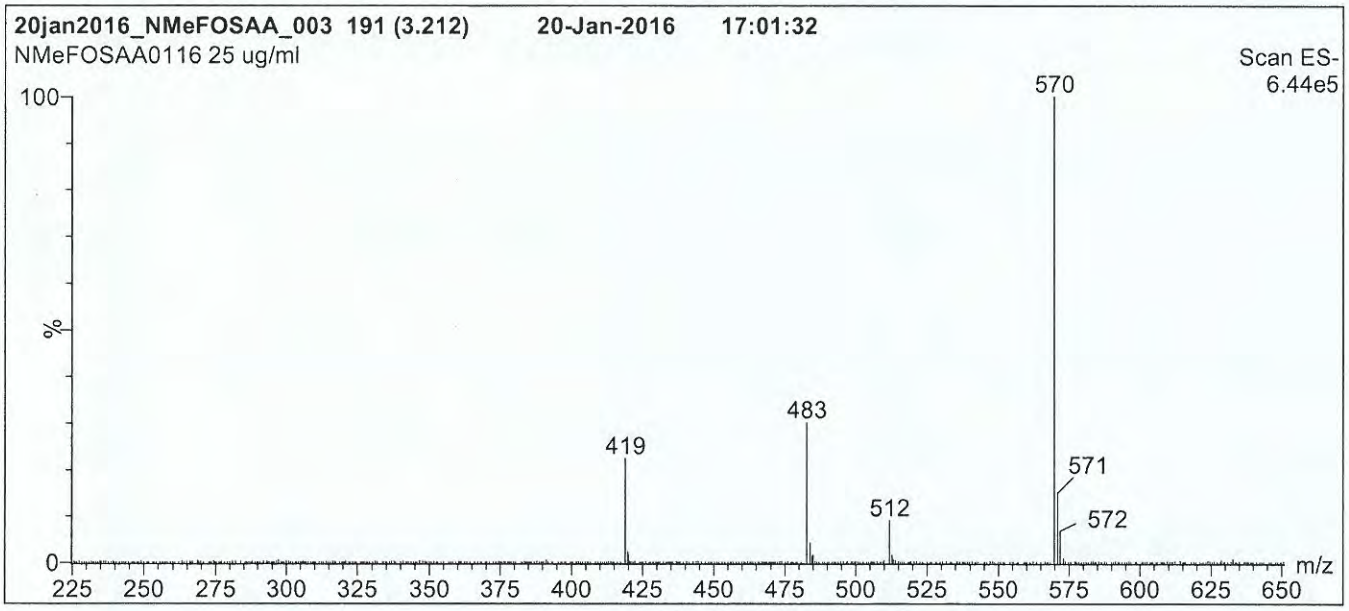
CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

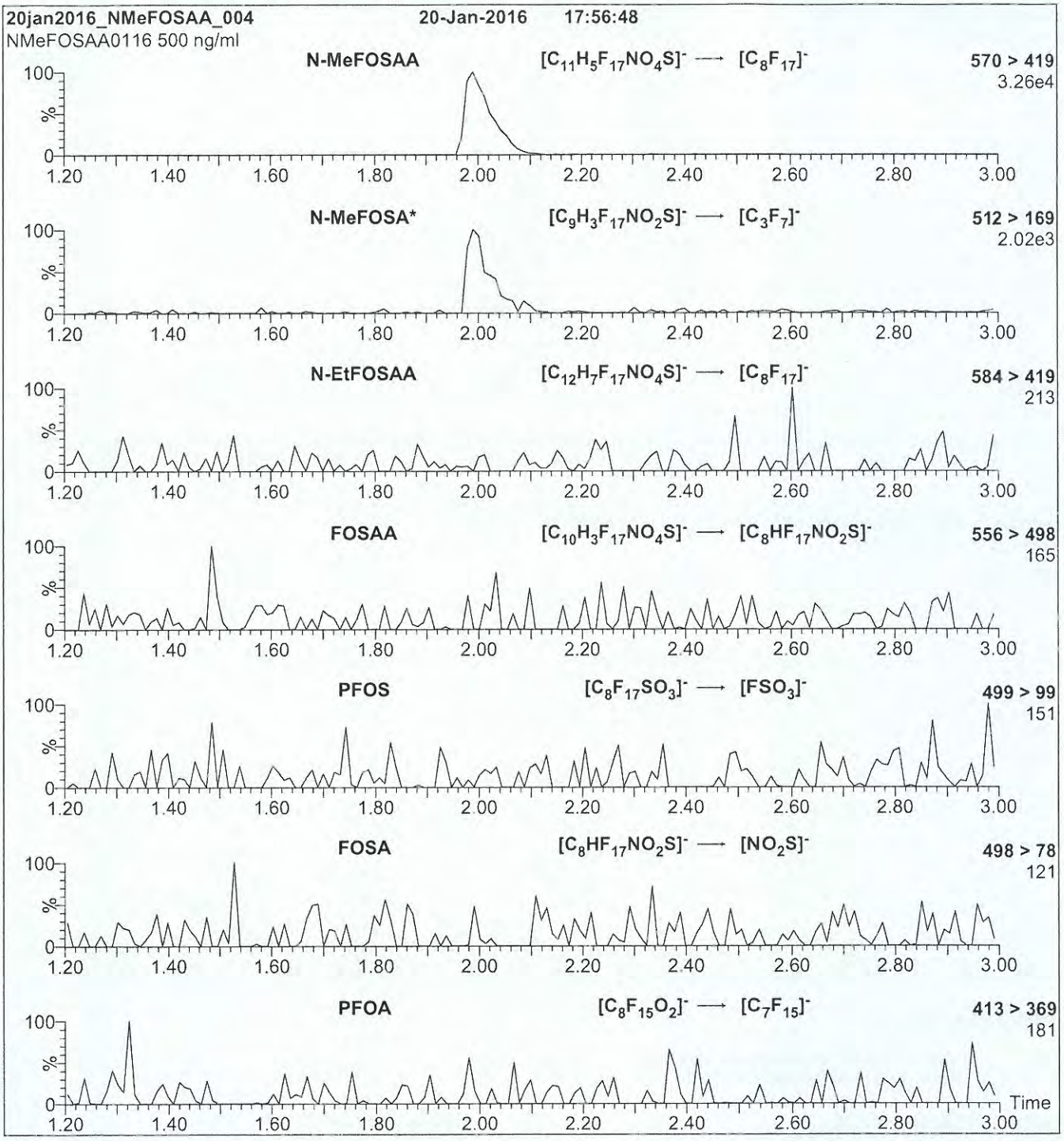
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



*__Note__: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

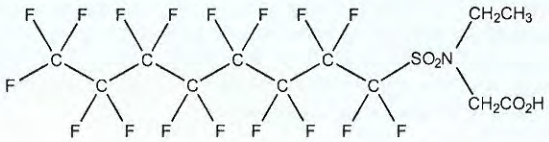
1GI3003

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSAA **LOT NUMBER:** NEtFOSAA0116
COMPOUND: N-ethylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 2991-50-6



MOLECULAR FORMULA: $C_{12}H_8F_{17}NO_4S$ **MOLECULAR WEIGHT:** 585.23
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/20/2016
EXPIRY DATE: (mm/dd/yyyy) 01/20/2021
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 01/21/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

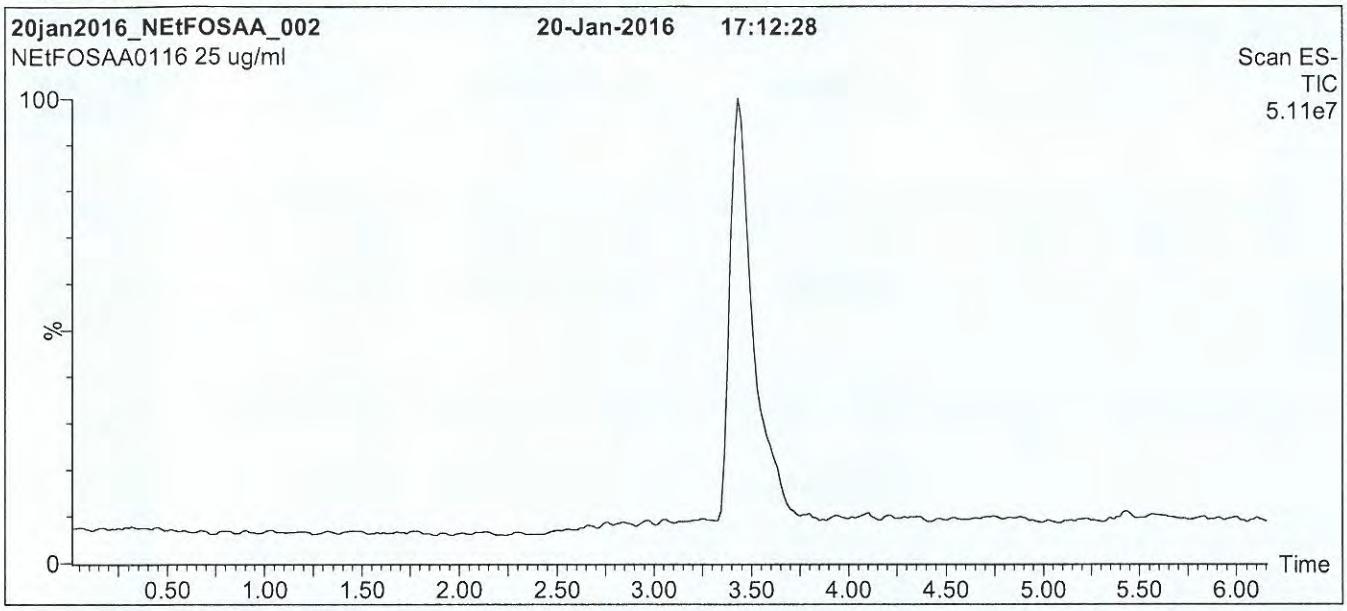
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

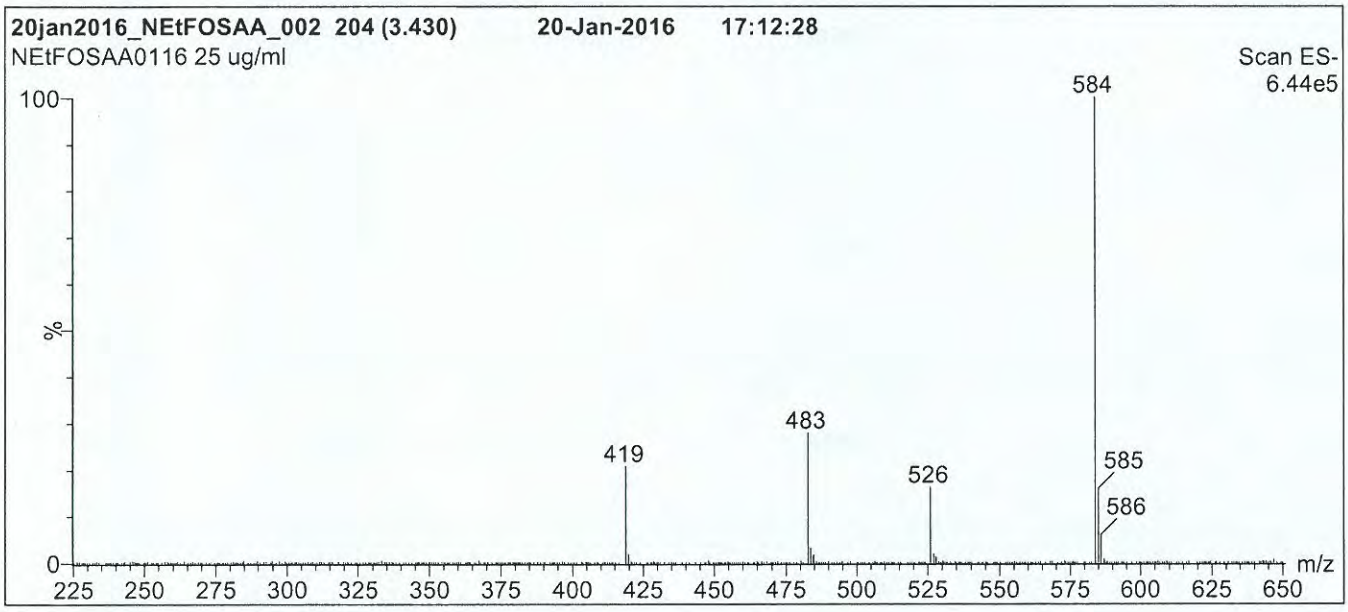
CALA Testing Accreditation No. A 1226

ANAB ACCREDITED Reference Material Producer

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

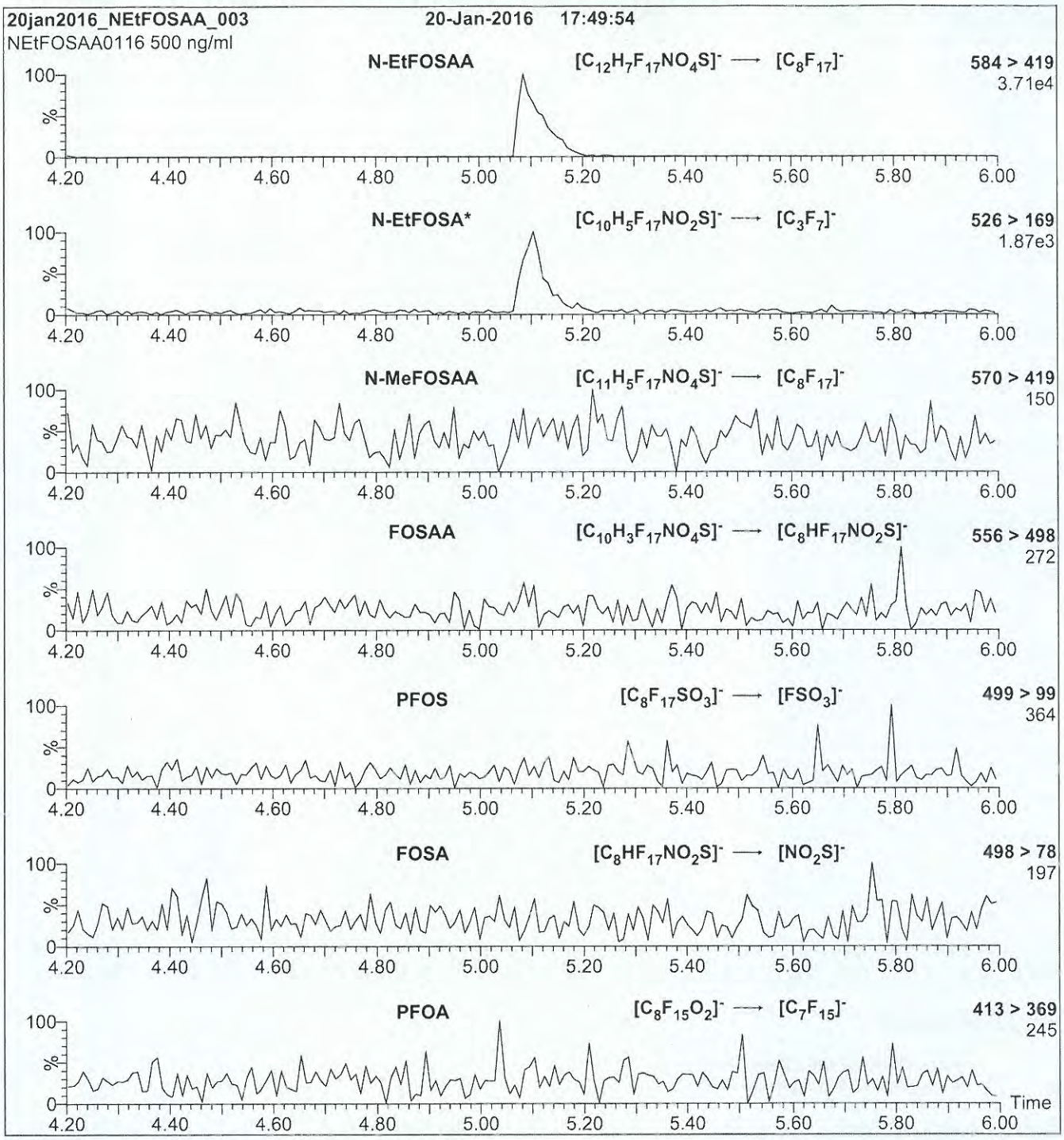
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Note: N-EtFOSA is formed by fragmentation of N-EtFOSAA.

Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

1702615

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFHxSK
LOT NUMBER:	brPFHxSK0117
CONCENTRATION:	50.0 ± 2.5 µg/ml (total potassium salt)
	45.5 ± 2.3 µg/ml (total PFHxS anion)
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	01/03/2017
LAST TESTED: (mm/dd/yyyy)	01/04/2017
EXPIRY DATE: (mm/dd/yyyy)	01/04/2022
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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INTENDED USE:

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

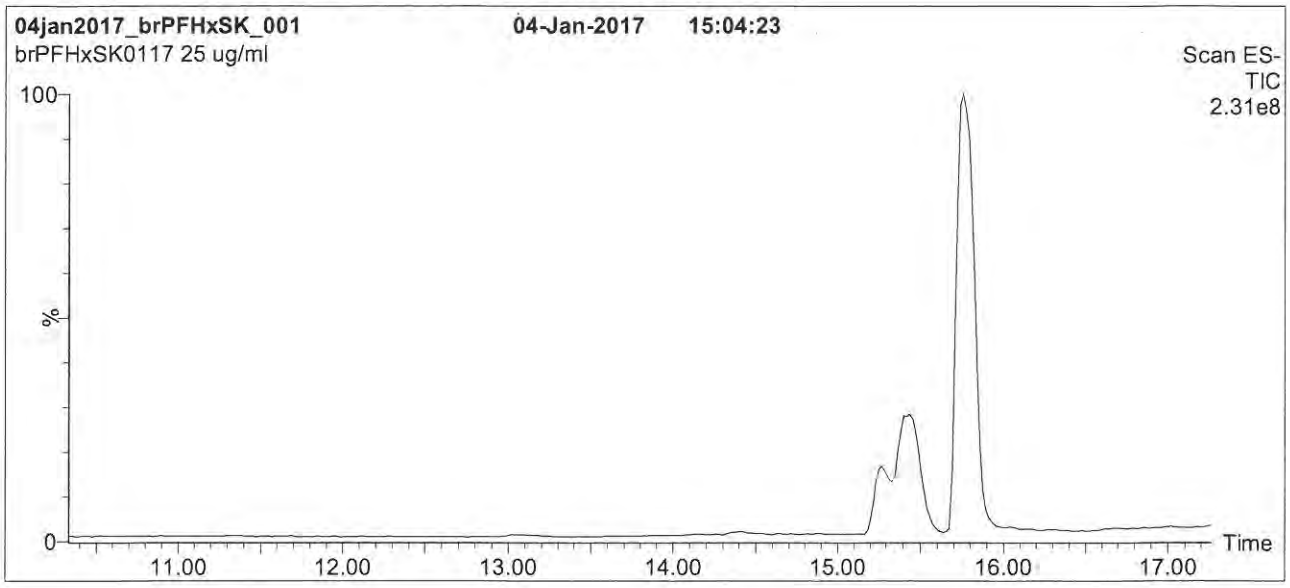
Table A: **br-PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

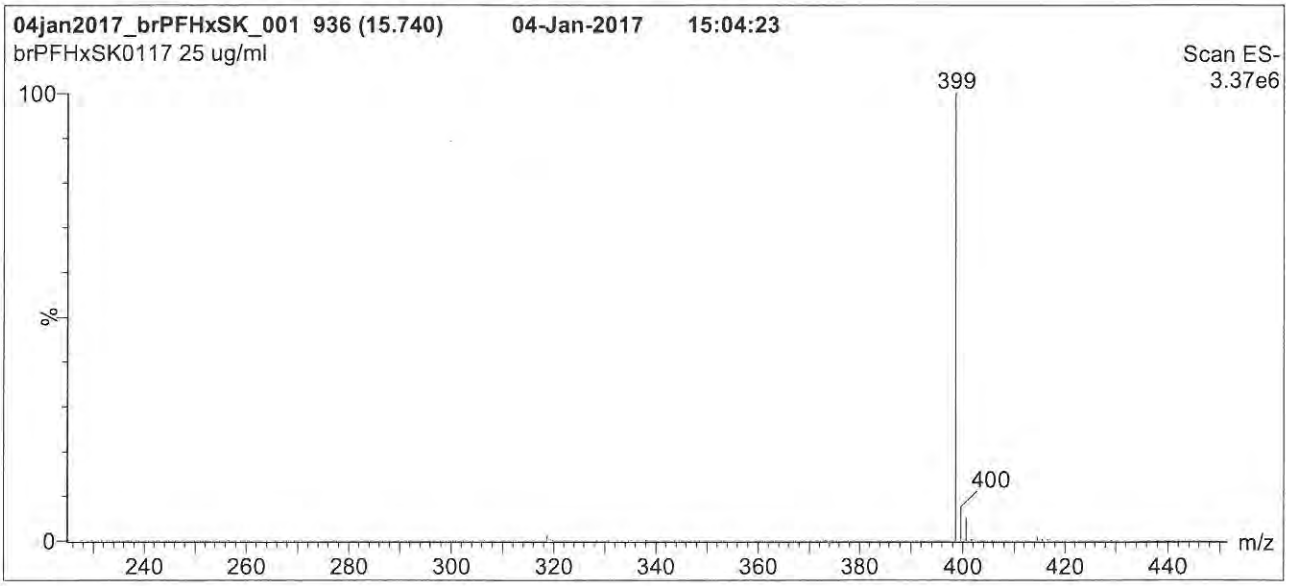
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)CF_2CF_2SO_3^-K^+$	0.2
7	Other Unidentified Isomers		0.5

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By: B.G. Chittim **Date:** 01/20/2017 (mm/dd/yyyy)

Figure 1: **br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 14 min. Ramp to
90% organic over 3 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 20 min

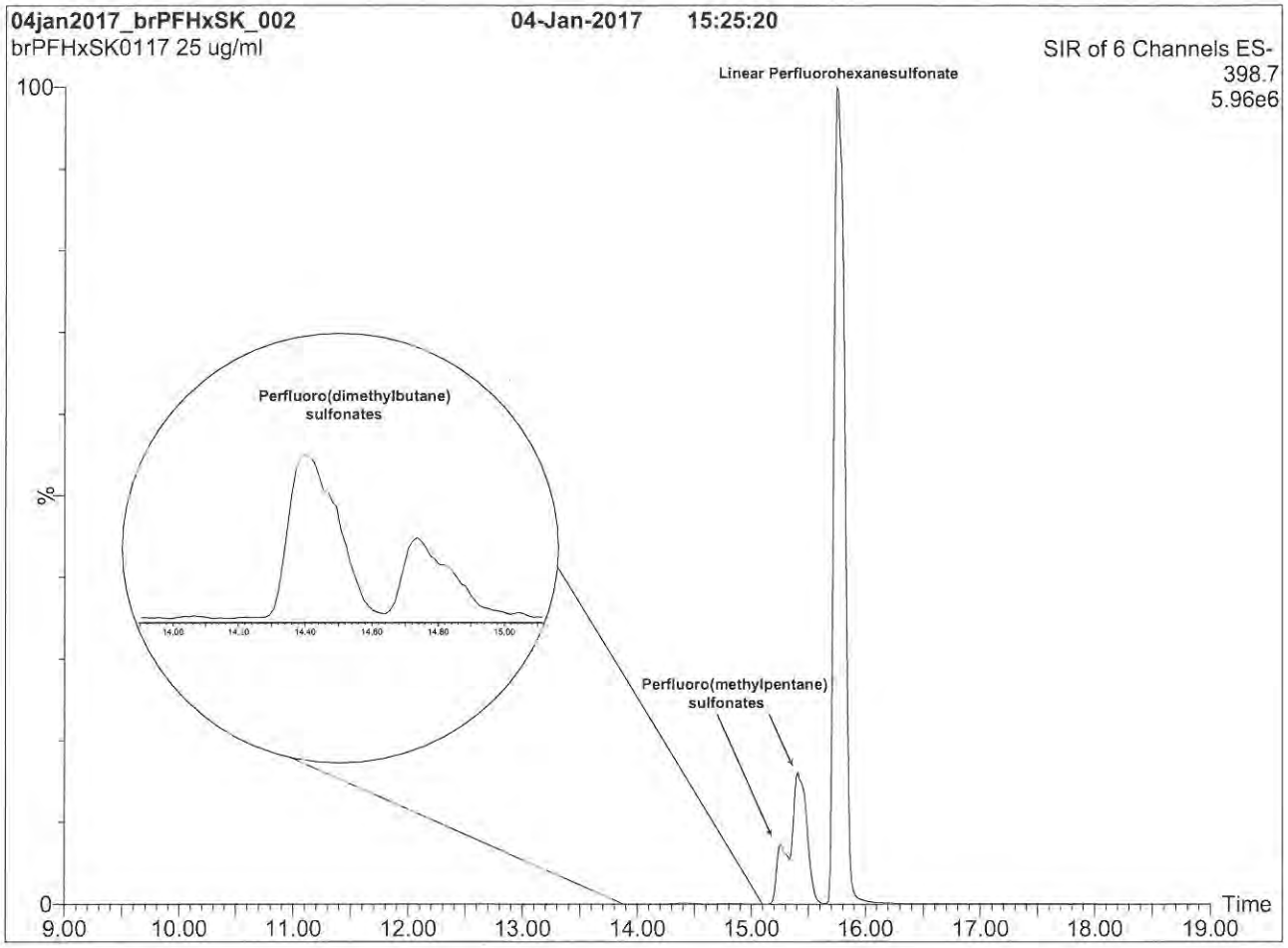
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-PFHxSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 14 min. Ramp to 90% organic over 3 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 20 min

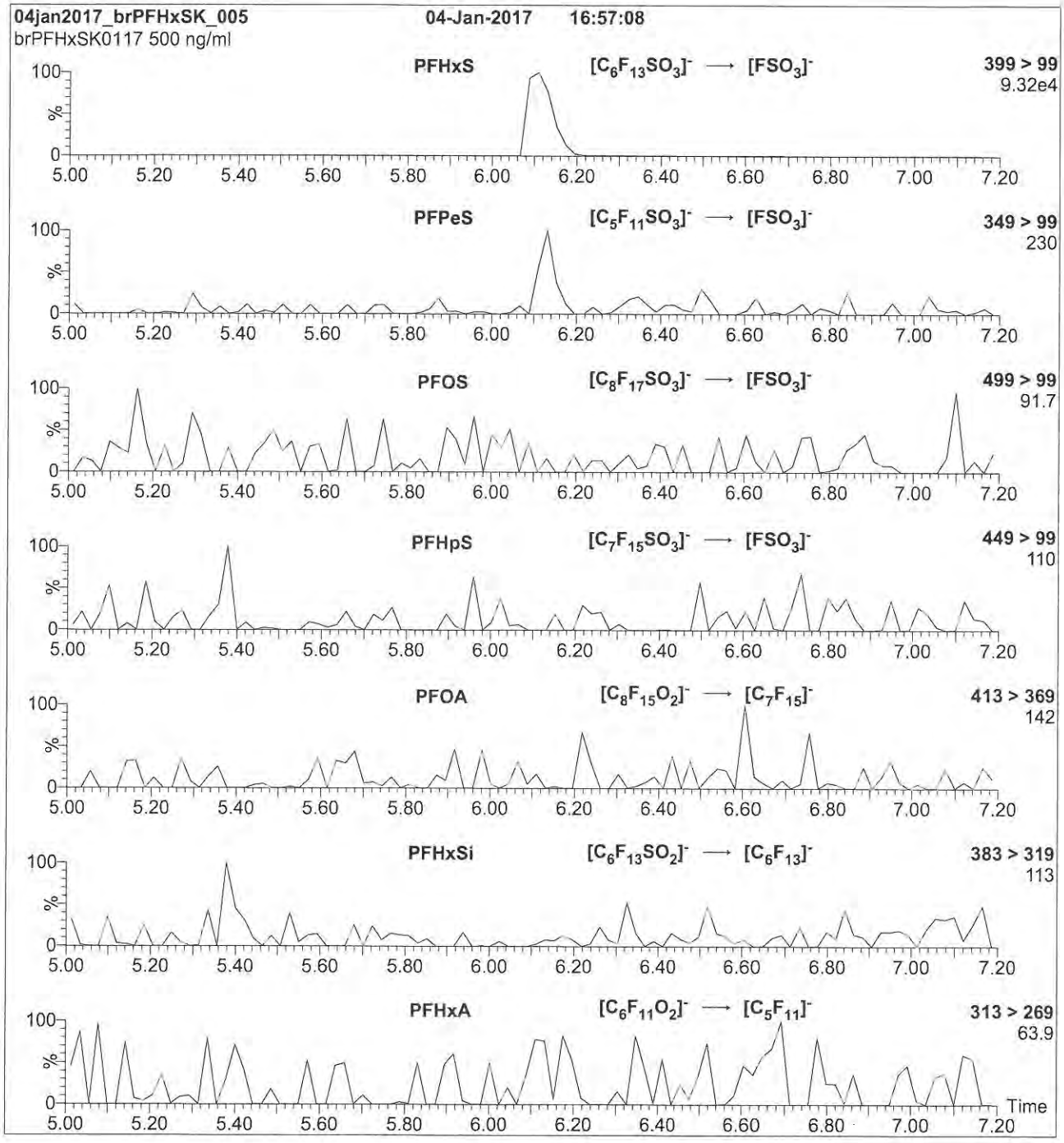
Flow: 300 µl/min

MS Parameters

Experiment: SIR (6 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = variable (15-62)
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 3: **br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

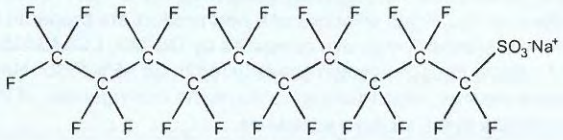
17D2620

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFDS
LOT NUMBER: LPFDS0217
COMPOUND: Sodium perfluoro-1-decanesulfonate

STRUCTURE:
CAS #: 2806-15-7



MOLECULAR FORMULA: $C_{10}F_{21}SO_3Na$
MOLECULAR WEIGHT: 622.13
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
48.2 ± 2.4 µg/ml (PFDS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/17/2017
EXPIRY DATE: (mm/dd/yyyy) 02/17/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 02/22/2017 (mm/dd/yyyy)

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17G1313

WELLINGTON LABORATORIES

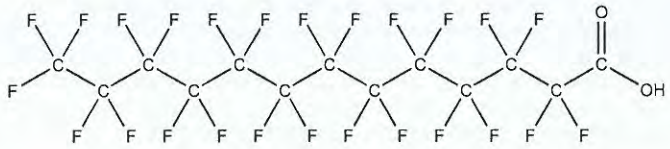
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFTrDA
COMPOUND: Perfluoro-n-tridecanoic acid

LOT NUMBER: PFTrDA0517

STRUCTURE:

CAS #: 72629-94-8



MOLECULAR FORMULA: $C_{13}HF_{25}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 664.11
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/02/2017
EXPIRY DATE: (mm/dd/yyyy) 05/02/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDoA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA ($C_{14}HF_{27}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 05/04/2017 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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INTENDED USE:

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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CALA

ANAB ACCREDITED

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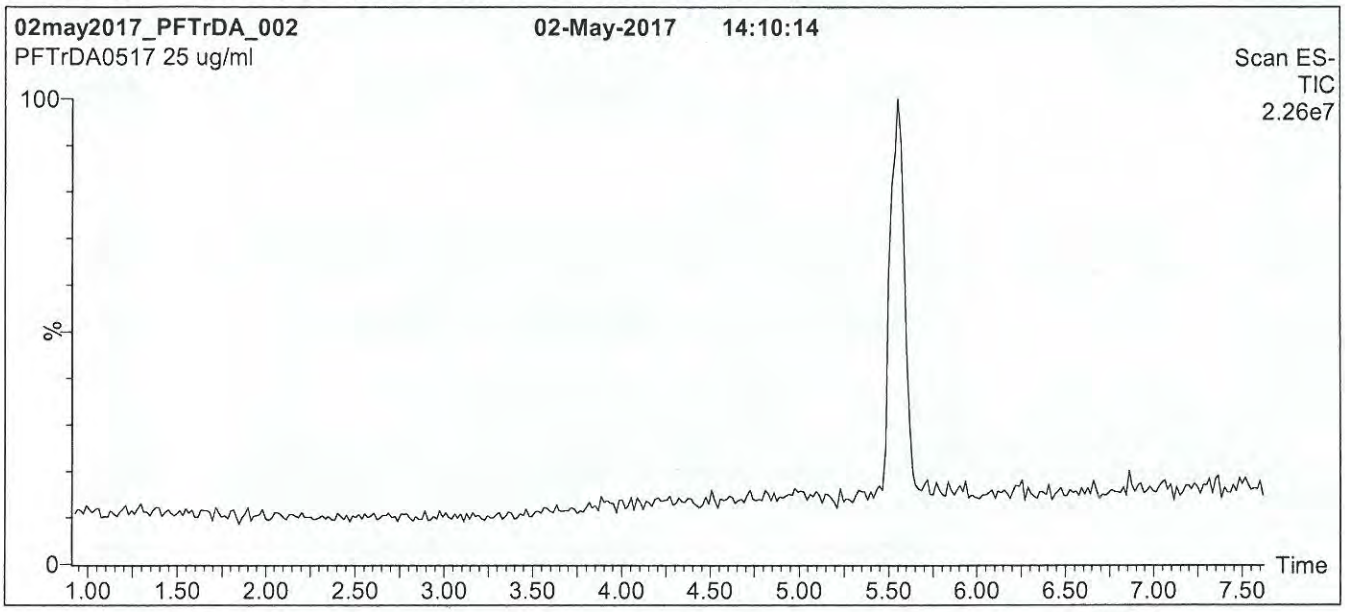
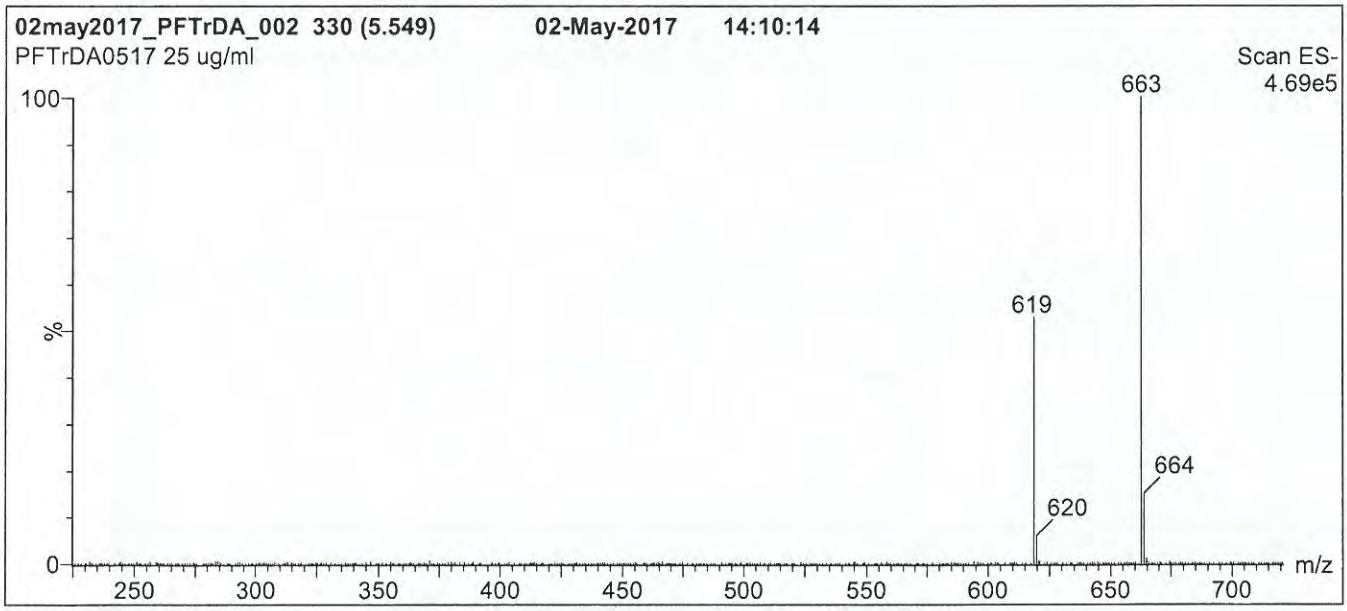
17G1313

Figure 1: **PFTrDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

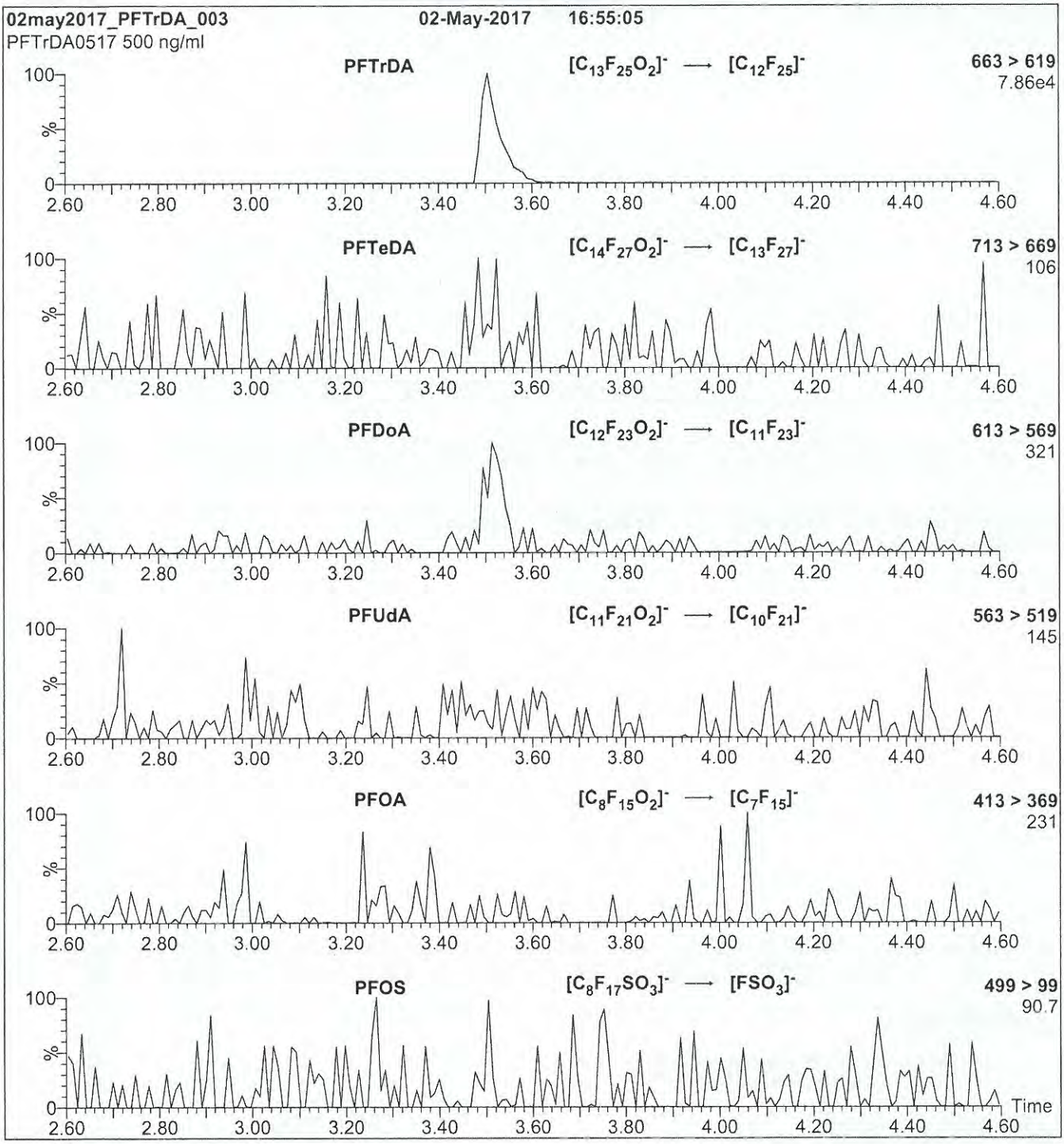
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 22.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 650

17G1313

Figure 2: **PFTrDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 15

17G1326

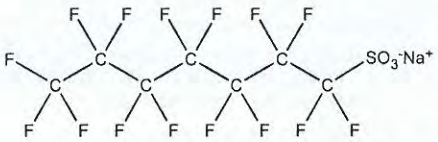
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate

LOT NUMBER: LPFHpS1016

STRUCTURE:



CAS #: Not available

MOLECULAR FORMULA:	$C_7F_{15}SO_3Na$
MOLECULAR WEIGHT:	472.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.6 ± 2.4 µg/ml (PFHpS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	10/18/2016
EXPIRY DATE: (mm/dd/yyyy)	10/18/2021
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of L-PFHxS ($C_6F_{13}SO_3Na$) and ~ 0.1% of L-PFOS ($C_8F_{17}SO_3Na$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 10/20/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17G1326

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

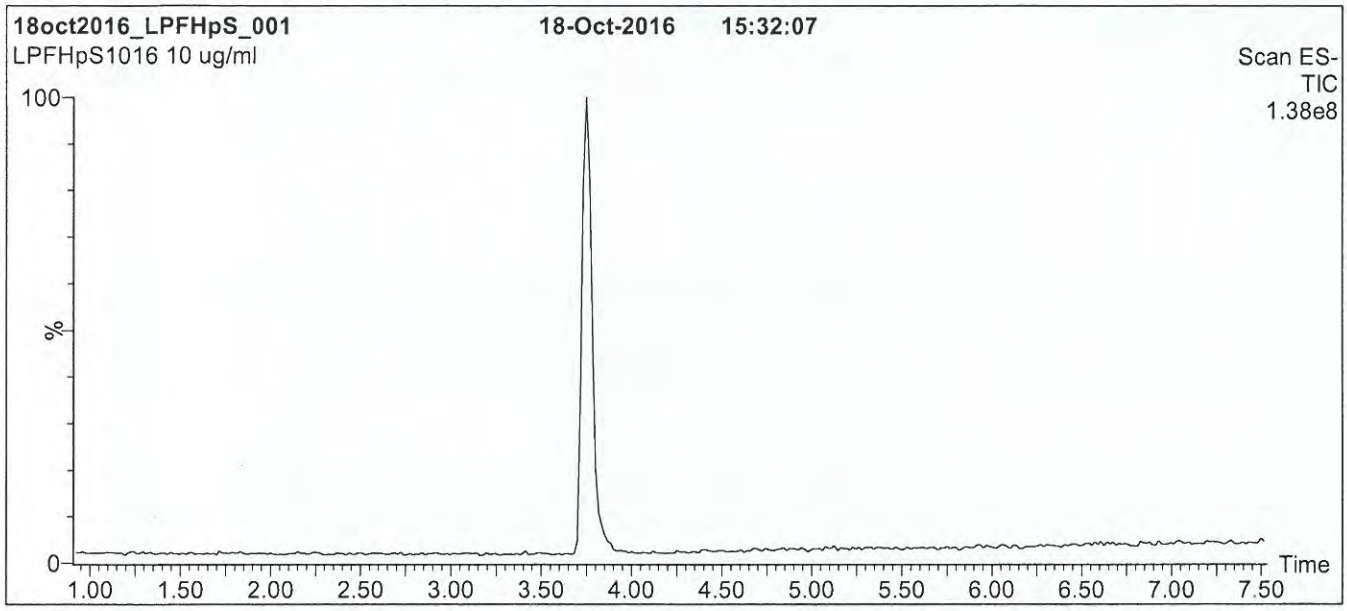
CALA

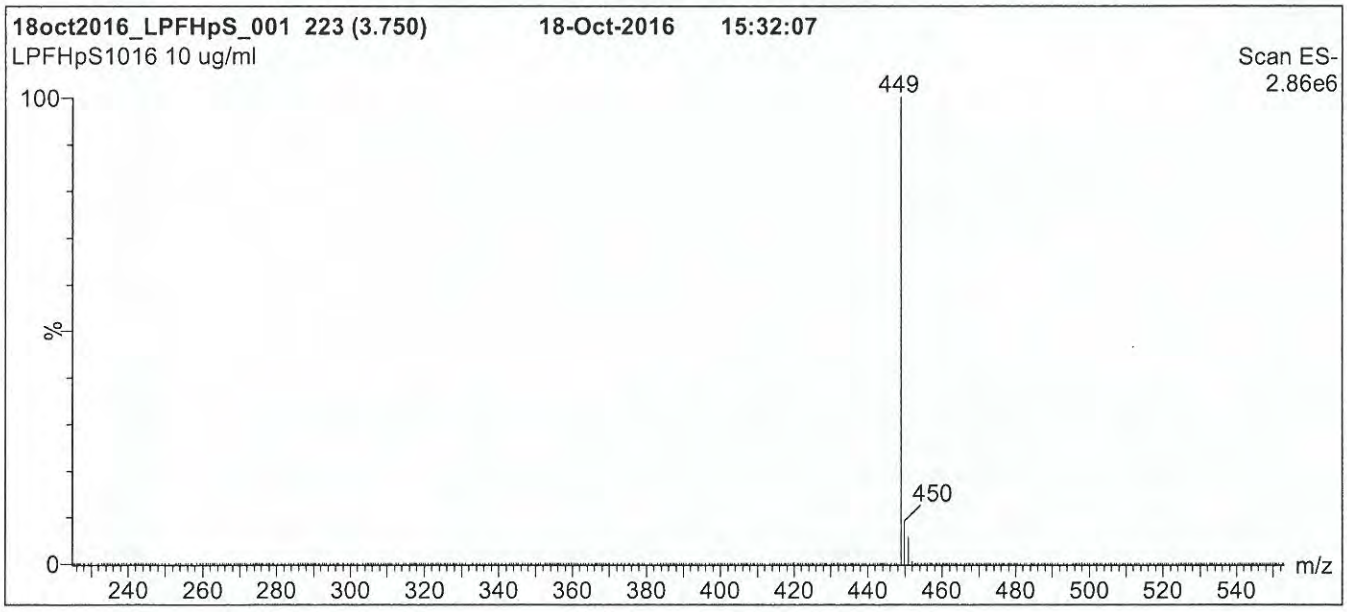
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17G1326

Figure 1: **L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold
for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

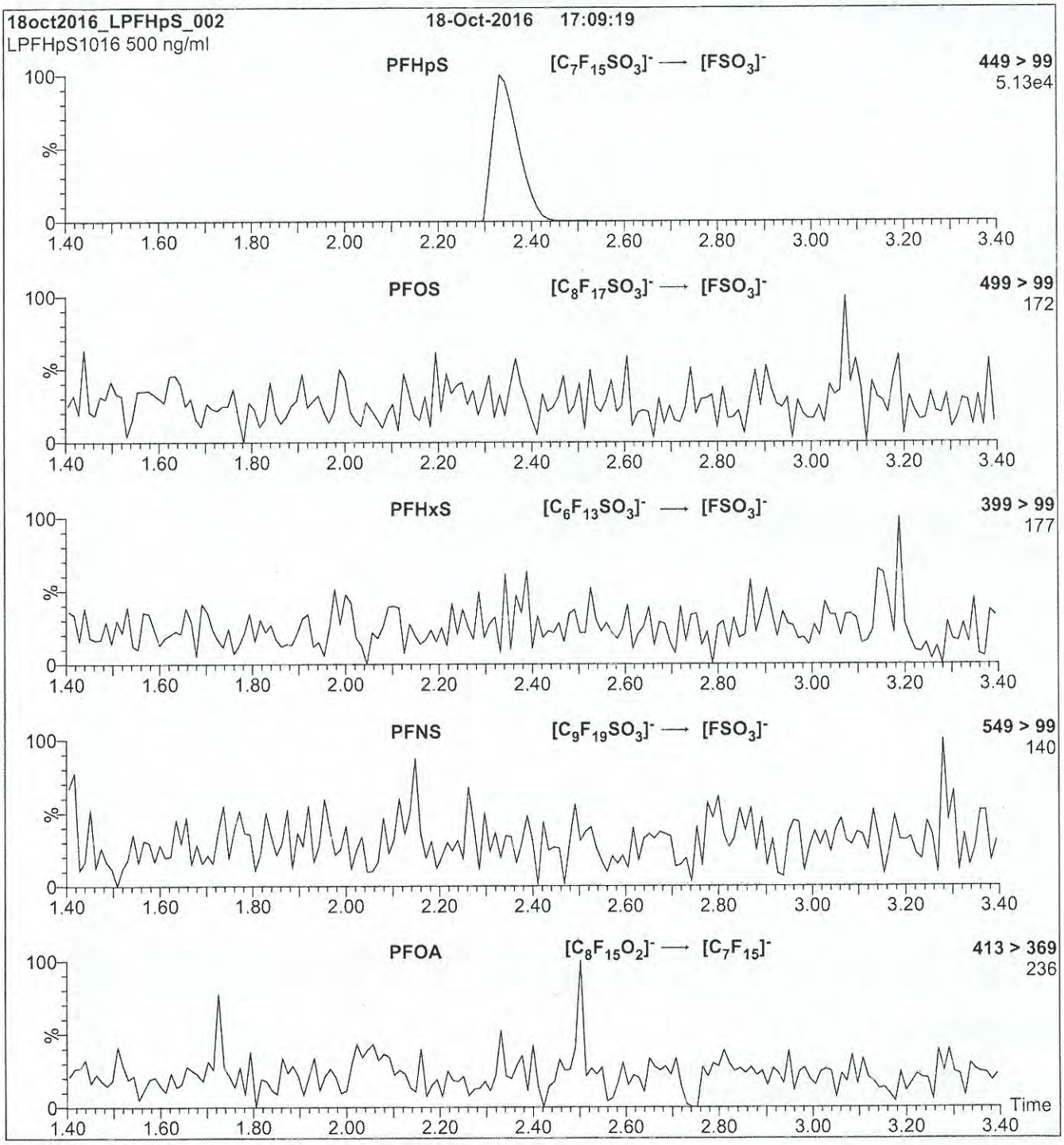
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17G1326

Figure 2: **L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 35

17G1809

WELLINGTON LABORATORIES

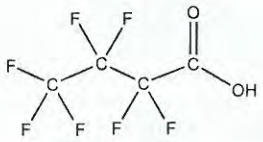
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanoic acid

LOT NUMBER: PFBA0517

STRUCTURE:

CAS #: 375-22-4



MOLECULAR FORMULA: $C_4HF_7O_2$
MOLECULAR WEIGHT: 214.04
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/29/2017
EXPIRY DATE: (mm/dd/yyyy) 05/29/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17G1809

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

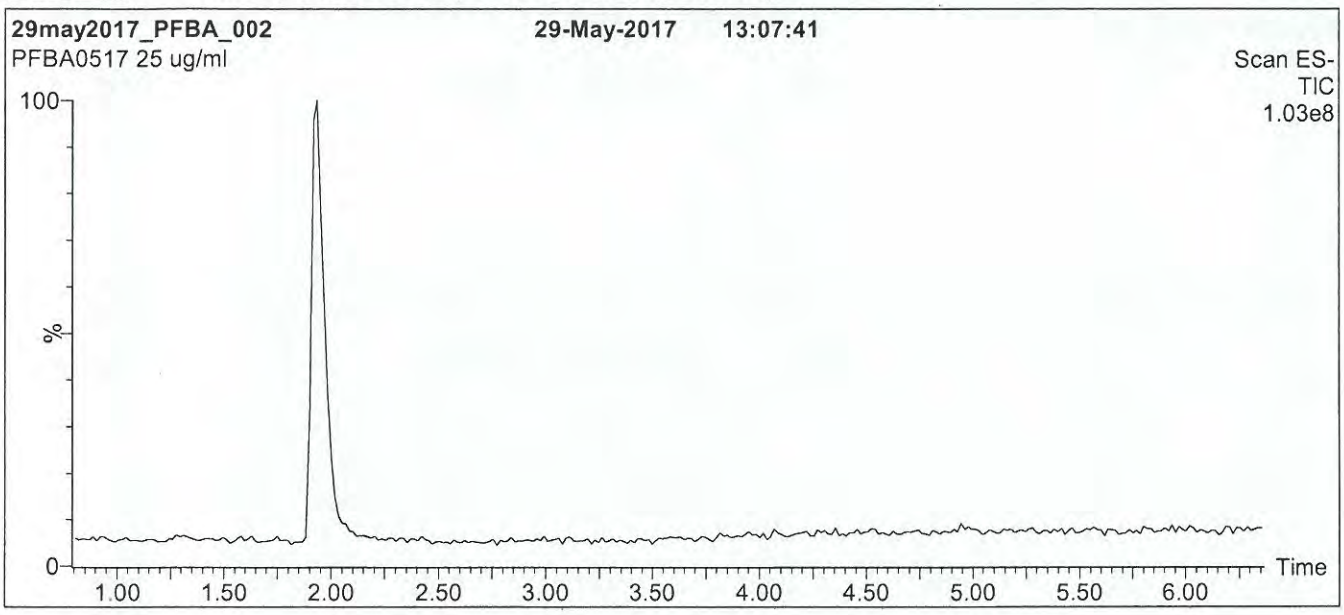
CALA

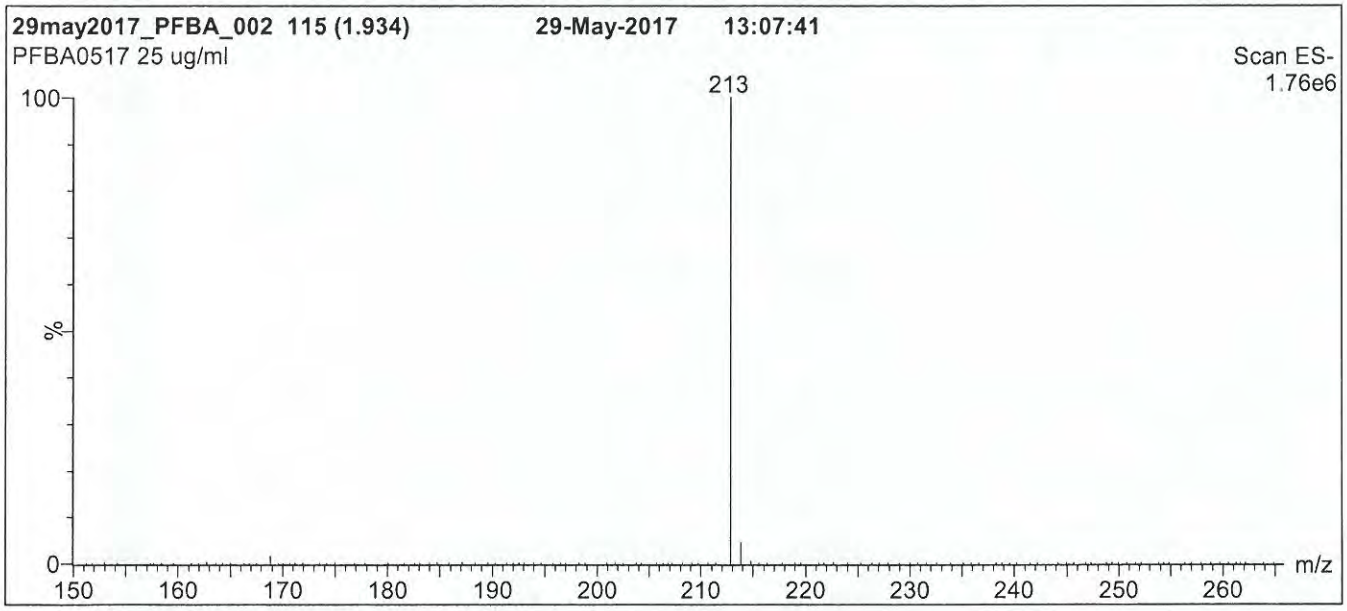
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17G1809

Figure 1: **PFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

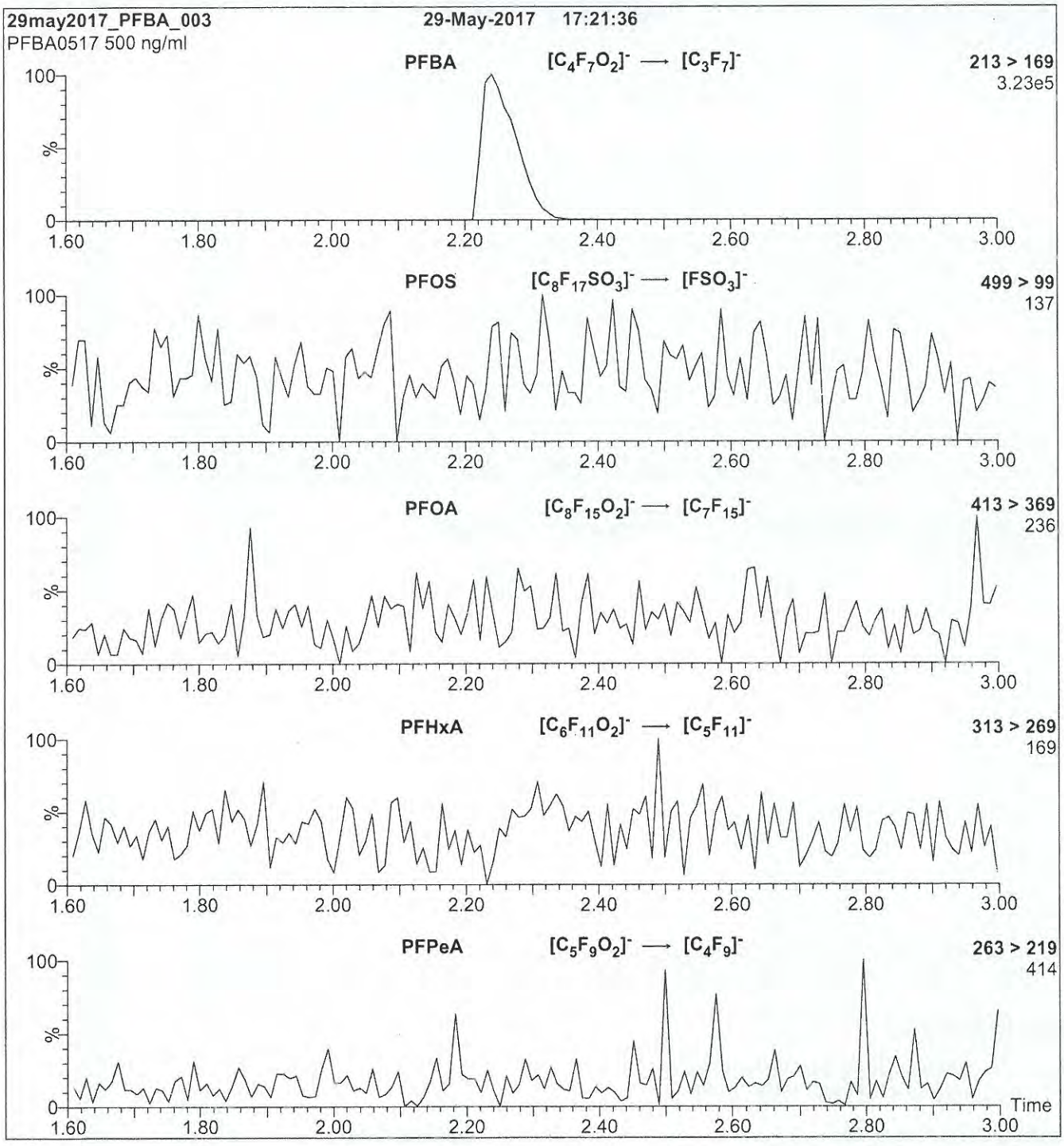
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17G1809

Figure 2: **PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

1710820

WELLINGTON LABORATORIES

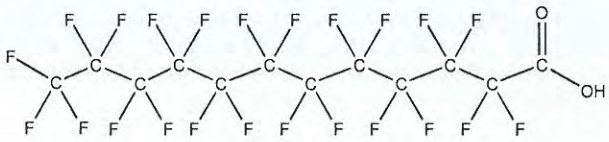
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFDoA
COMPOUND: Perfluoro-n-dodecanoic acid

LOT NUMBER: PFDoA0516

STRUCTURE:

CAS #: 307-55-1



MOLECULAR FORMULA: $C_{12}HF_{23}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 614.10
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/31/2016
EXPIRY DATE: (mm/dd/yyyy) 05/31/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 06/02/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HAZARDS:

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UNCERTAINTY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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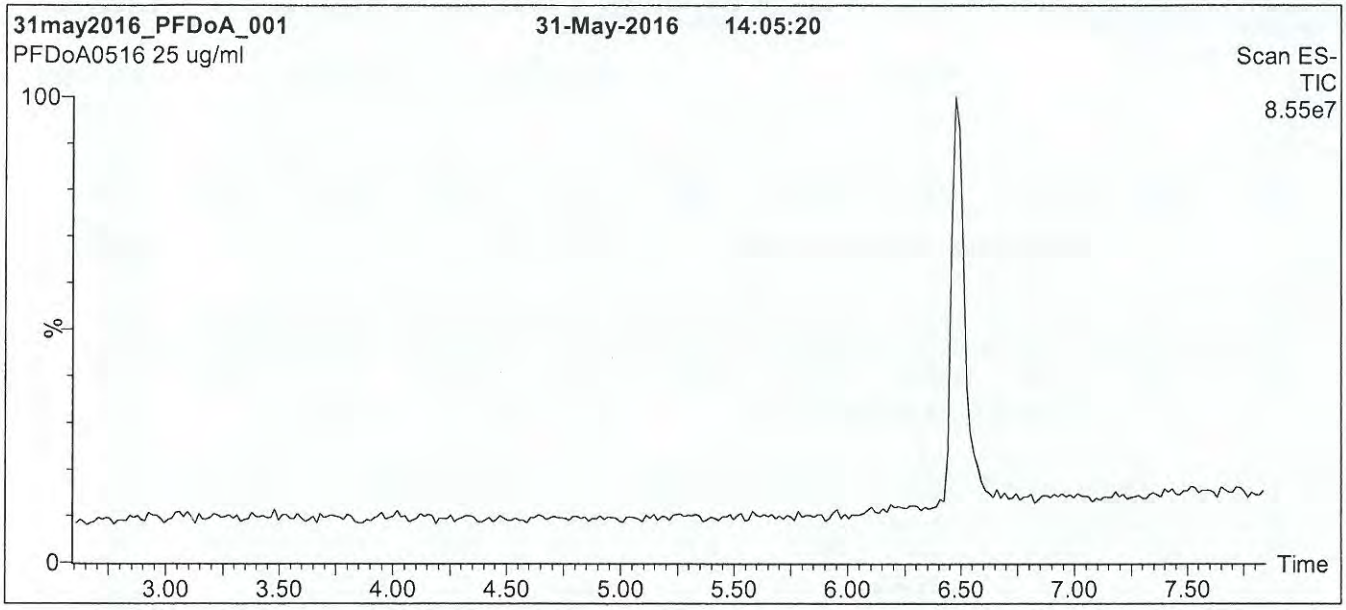
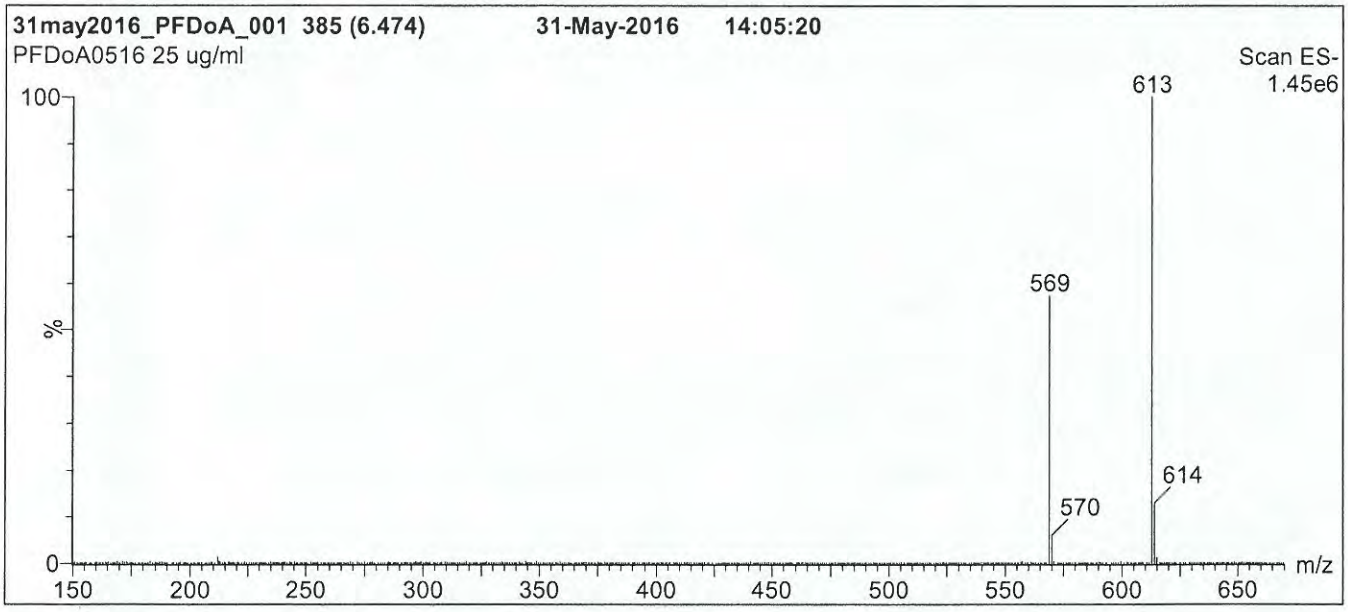
CALA

ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFDoA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

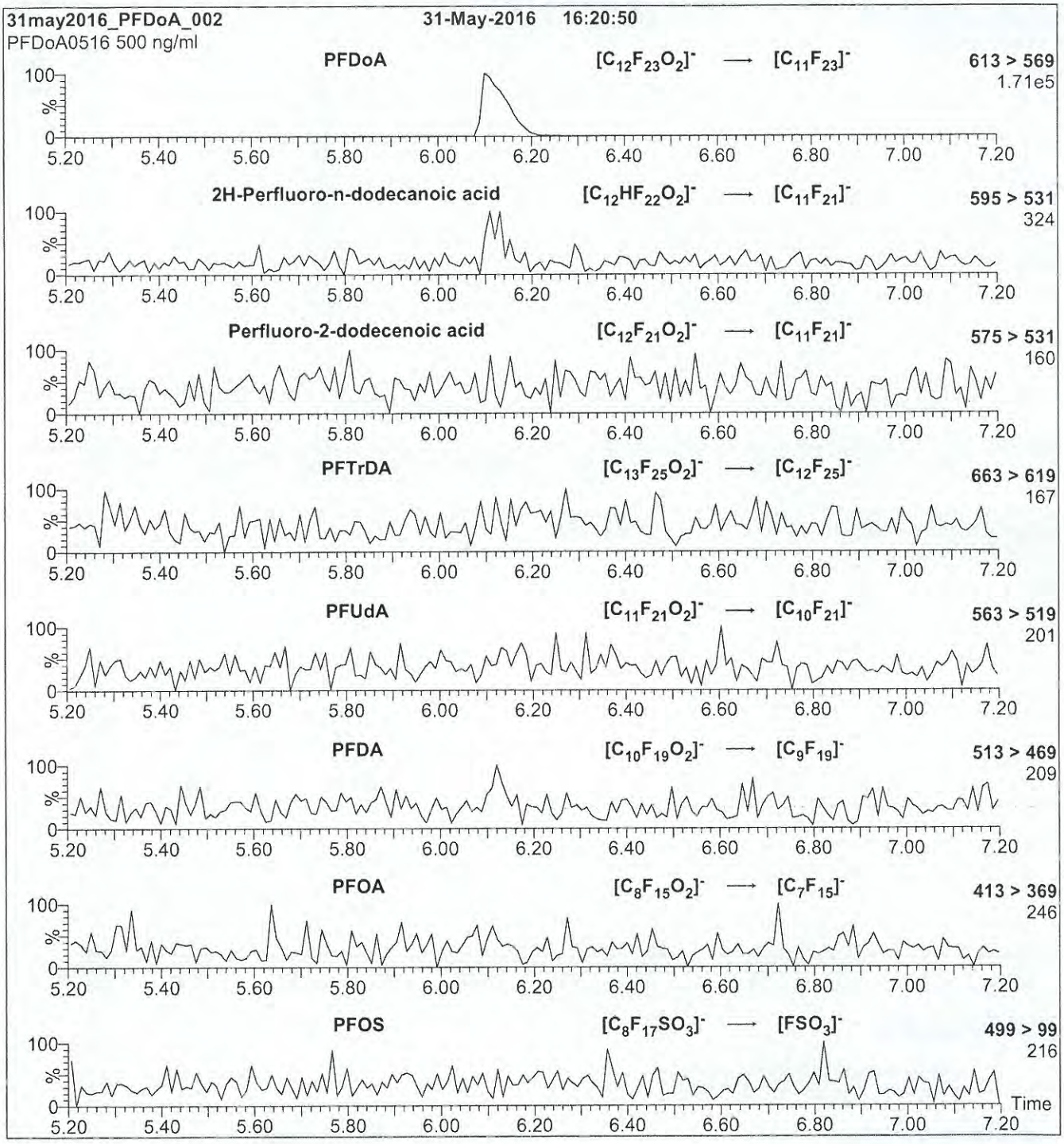
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 13

17H0821

WELLINGTON LABORATORIES

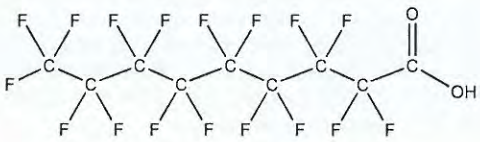
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFNA
COMPOUND: Perfluoro-n-nonanoic acid

LOT NUMBER: PFNA0916

STRUCTURE:

CAS #: 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$
MOLECULAR WEIGHT: 464.08
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/30/2016
EXPIRY DATE: (mm/dd/yyyy) 09/30/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA) and < 0.1% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 10/11/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

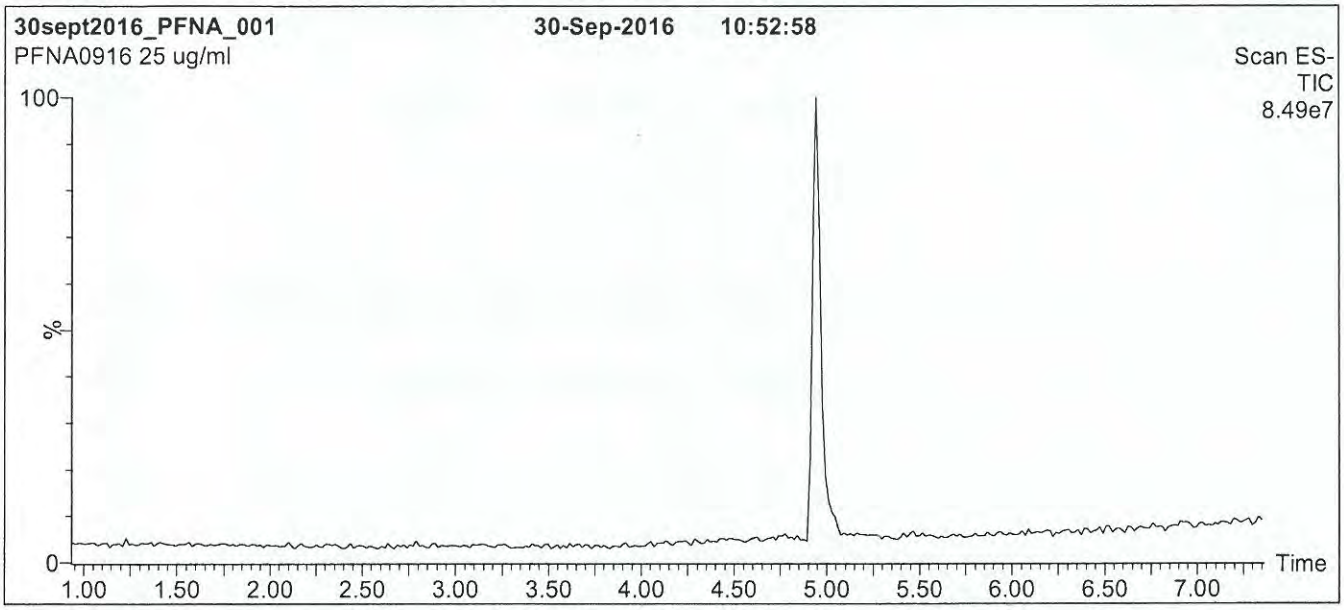
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

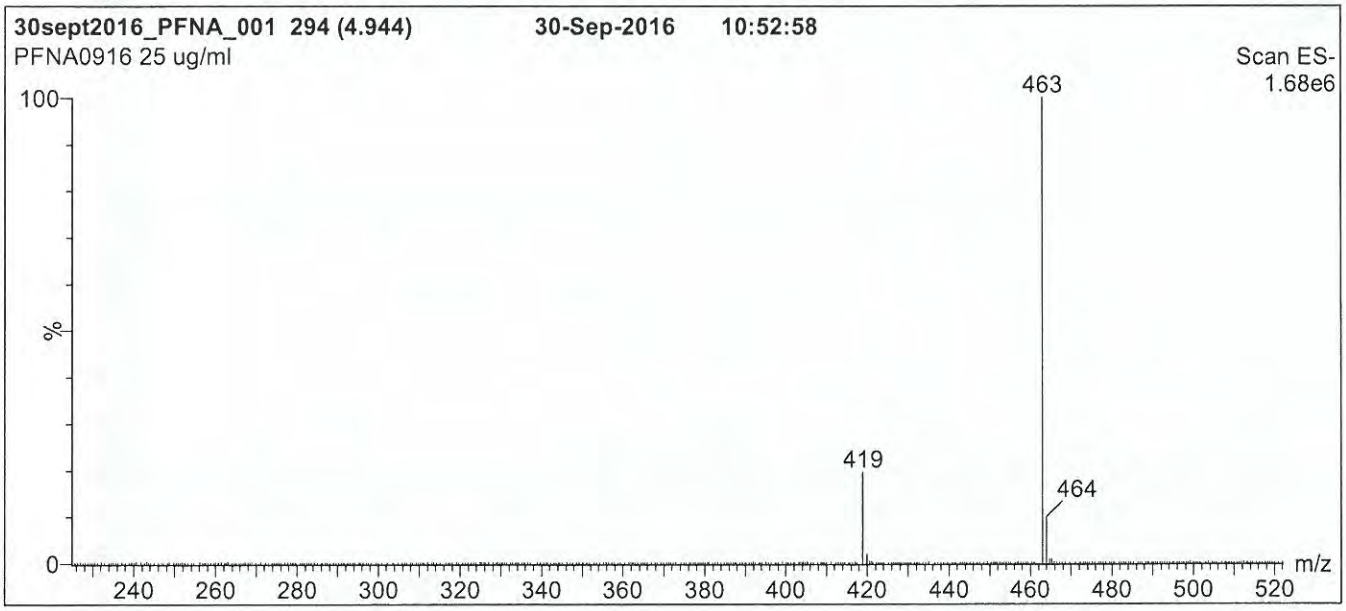
CALA

ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

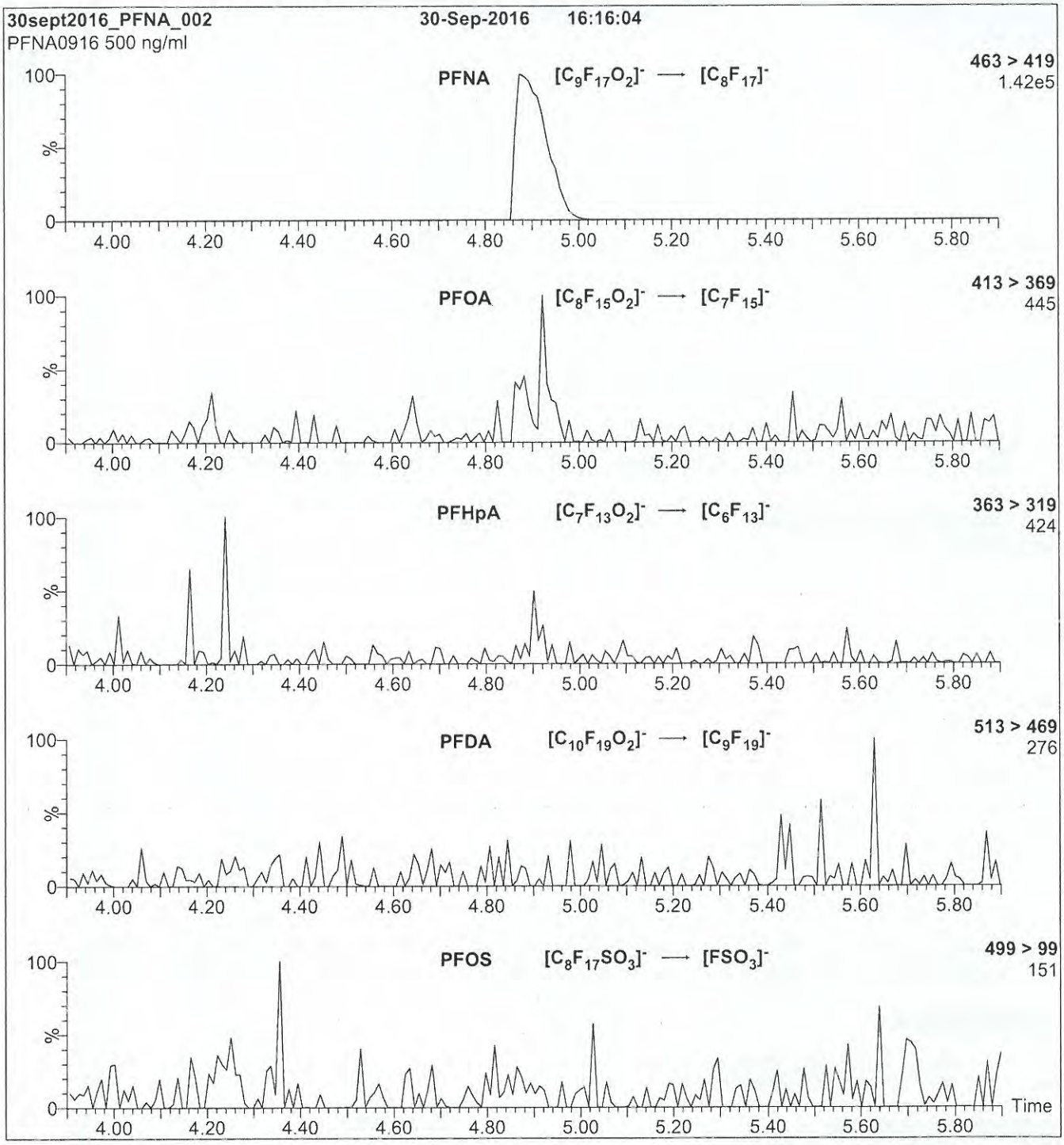
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 11

17H0822

WELLINGTON LABORATORIES

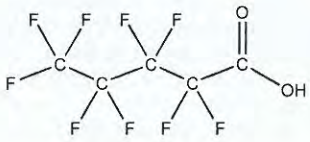
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFPeA
COMPOUND: Perfluoro-n-pentanoic acid

LOT NUMBER: PFPeA0617

STRUCTURE:

CAS #: 2706-90-3



MOLECULAR FORMULA: $C_5HF_9O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 264.05
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 06/14/2017
EXPIRY DATE: (mm/dd/yyyy) 06/14/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of $C_5H_2F_8O_2$ (hydrido - derivative) as measured by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/16/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

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ANAB ACCREDITED

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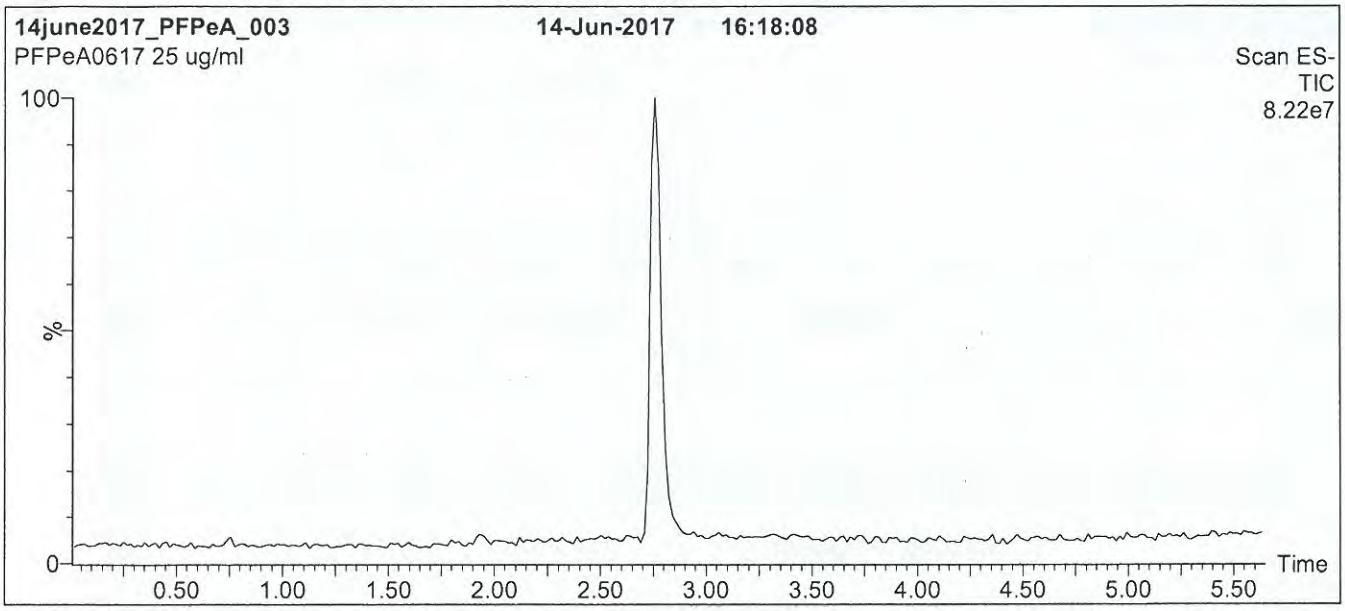
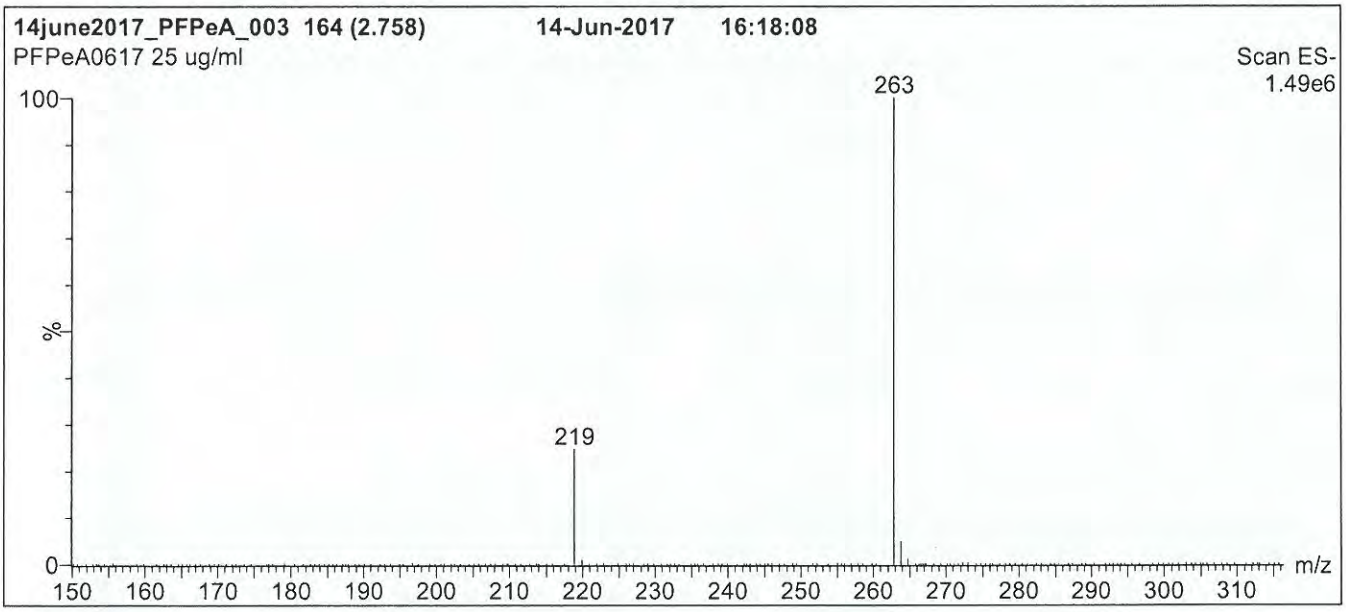
Figure 1: **PFPeA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

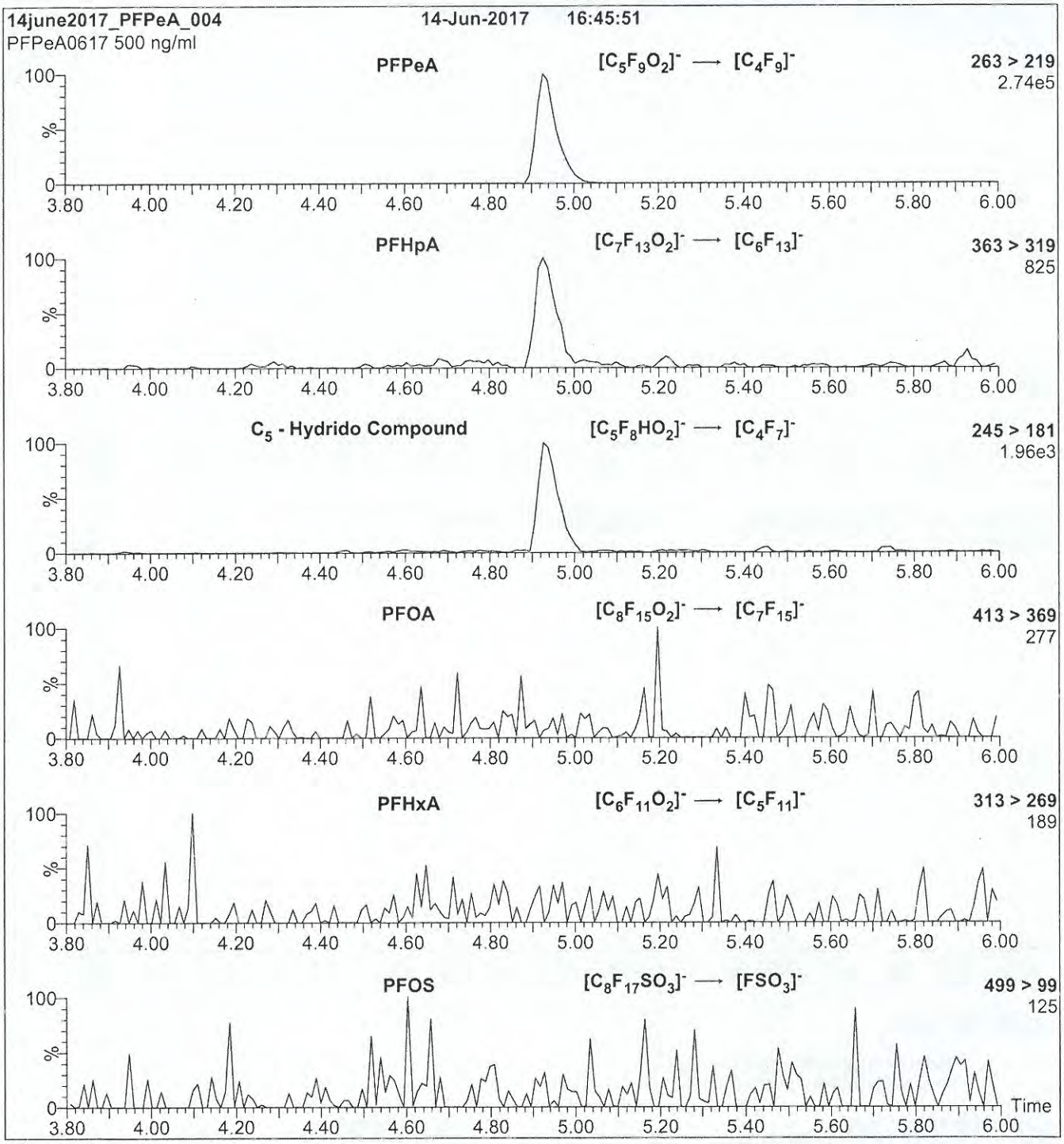
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 9

17H0823

WELLINGTON LABORATORIES

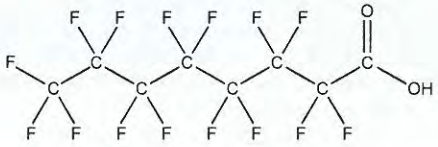
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFOA
COMPOUND: Perfluoro-n-octanoic acid

LOT NUMBER: PFOA0217

STRUCTURE:

CAS #: 335-67-1



MOLECULAR FORMULA: $C_8HF_{15}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 414.07
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/17/2017
EXPIRY DATE: (mm/dd/yyyy) 02/17/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 02/22/2017 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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CALA

ANAB ACCREDITED

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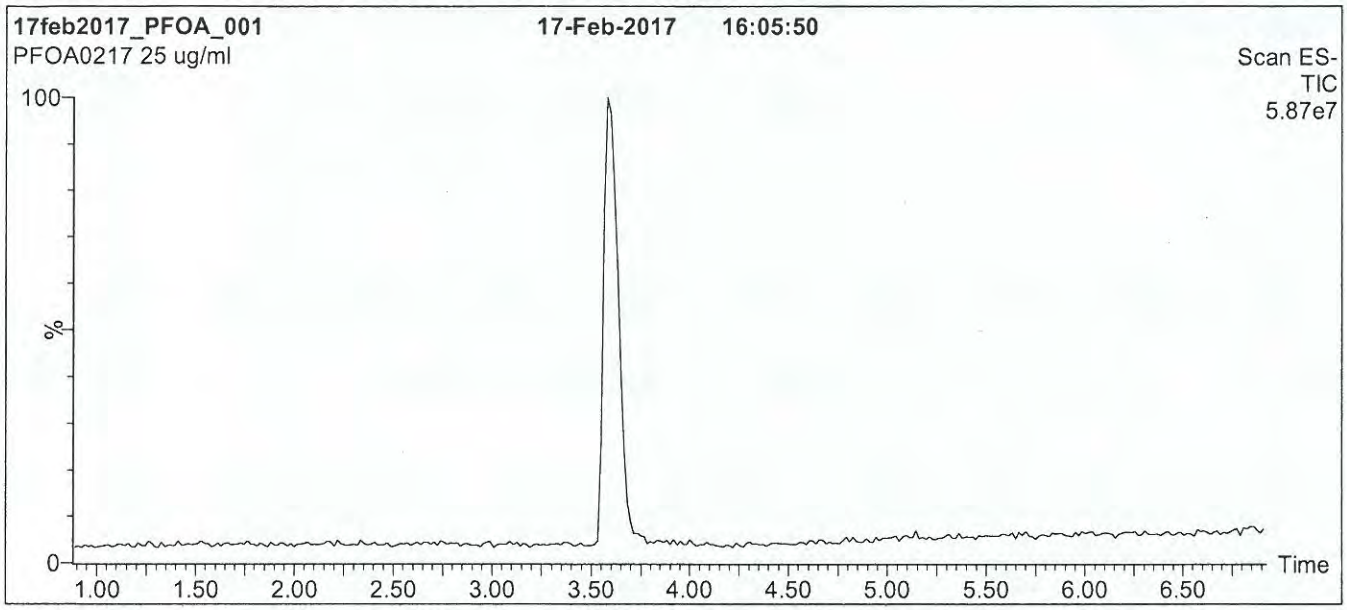
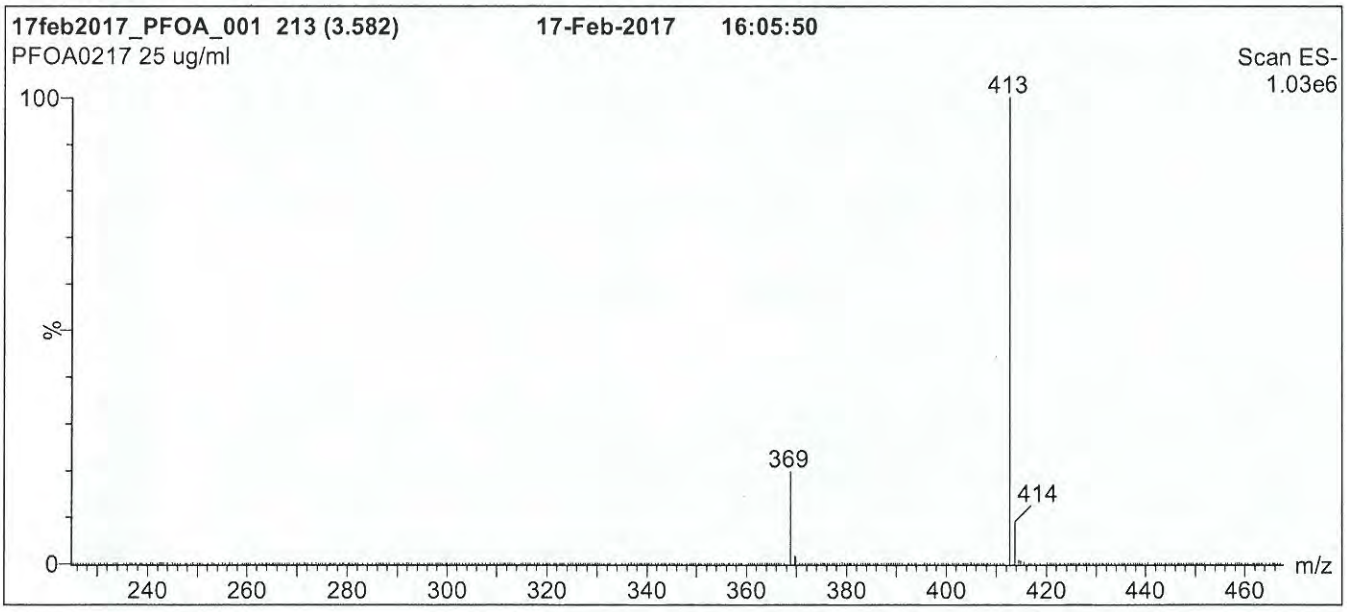
Figure 1: **PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
1 min before returning to initial conditions in 0.5 min.
Time: 10 min

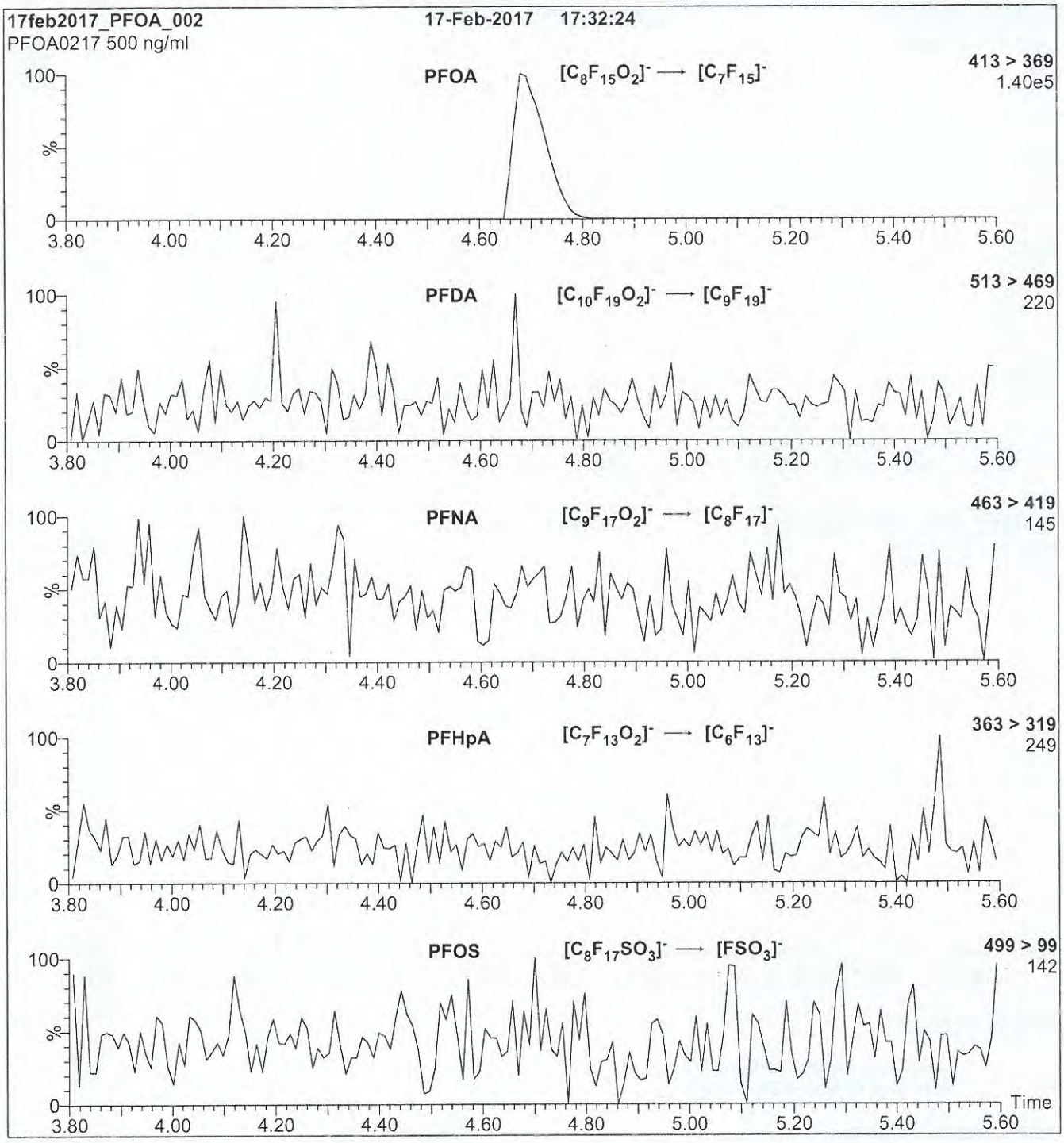
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

17H0824

WELLINGTON LABORATORIES

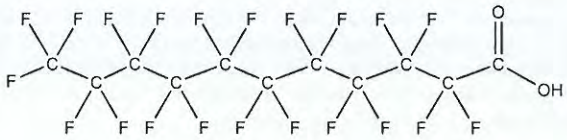
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA
COMPOUND: Perfluoro-n-undecanoic acid

LOT NUMBER: PFUdA1016

STRUCTURE:

CAS #: 2058-94-8



MOLECULAR FORMULA: $C_{11}HF_{21}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 564.09
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/18/2016
EXPIRY DATE: (mm/dd/yyyy) 10/18/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: B.G. Chittim **Date:** 10/19/2016 (mm/dd/yyyy)

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QUALITY MANAGEMENT:

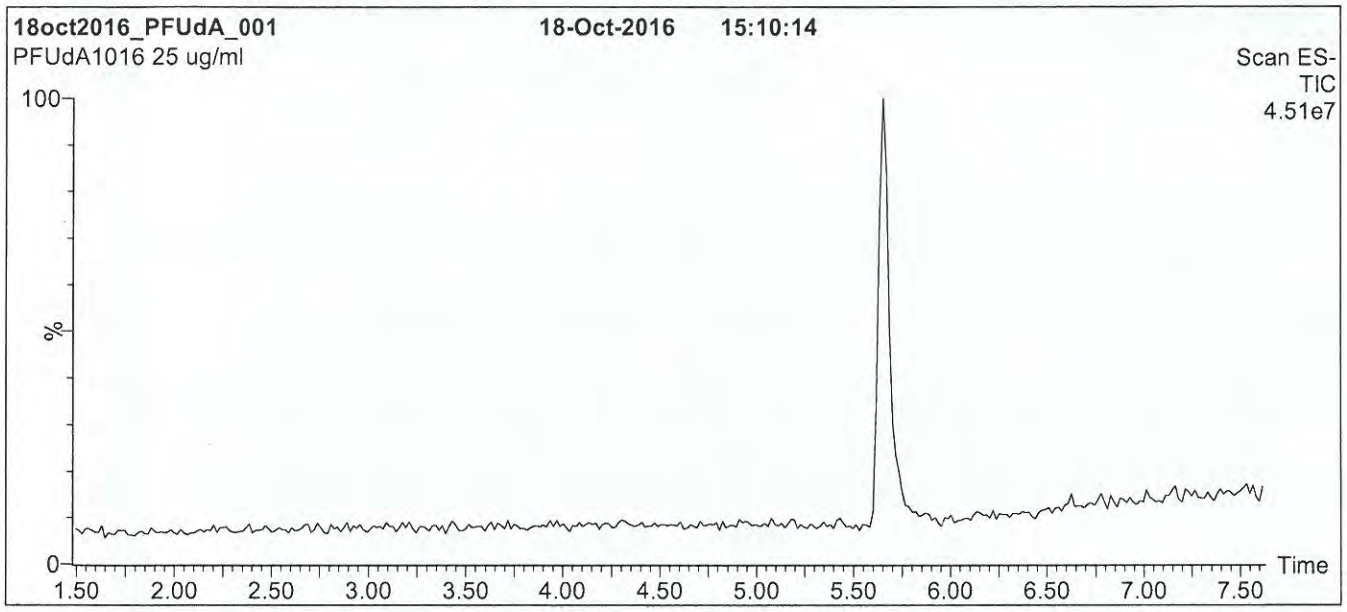
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

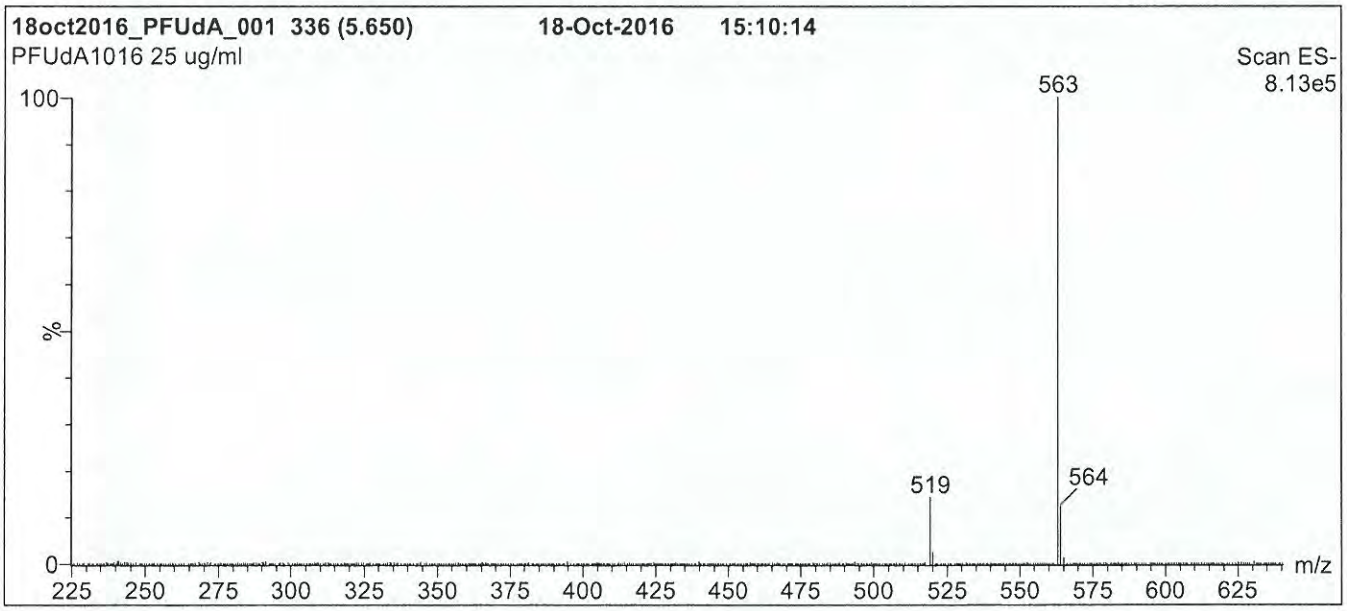
CALA

ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

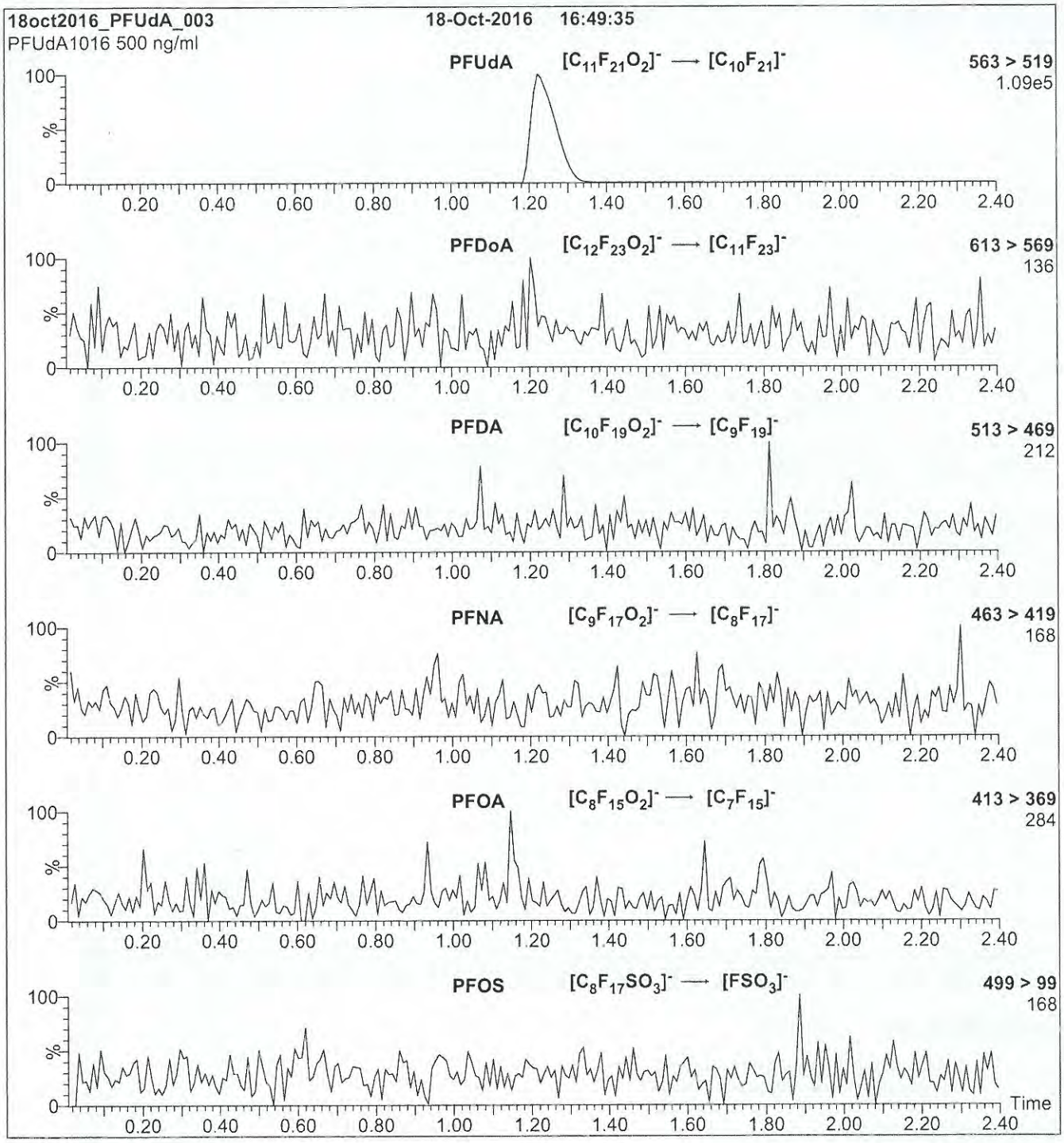
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection:	Direct loop injection 10 µl (500 ng/ml PFUdA)
Mobile phase:	Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O (both with 10 mM NH_4OAc buffer)
Flow:	300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 11

17H0825

WELLINGTON LABORATORIES

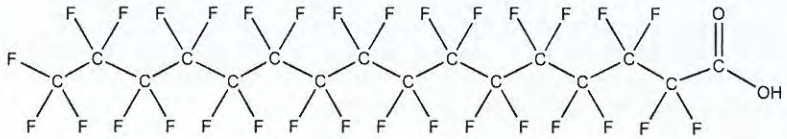
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxDA ✓
COMPOUND: Perfluoro-n-hexadecanoic acid

LOT NUMBER: PFHxDA0516

STRUCTURE:

CAS #: 67905-19-5



MOLECULAR FORMULA: $C_{16}HF_{31}O_2$
MOLECULAR WEIGHT: 814.13
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/25/2016
EXPIRY DATE: (mm/dd/yyyy) 05/25/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.4% of PFODA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 05/27/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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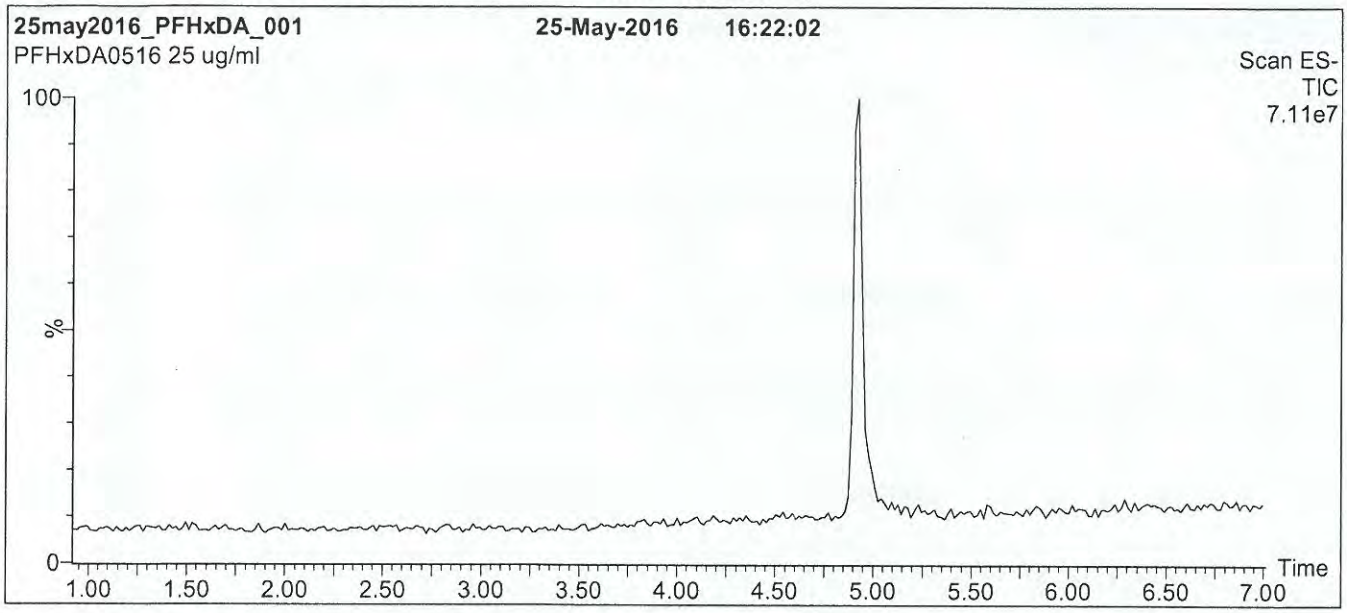
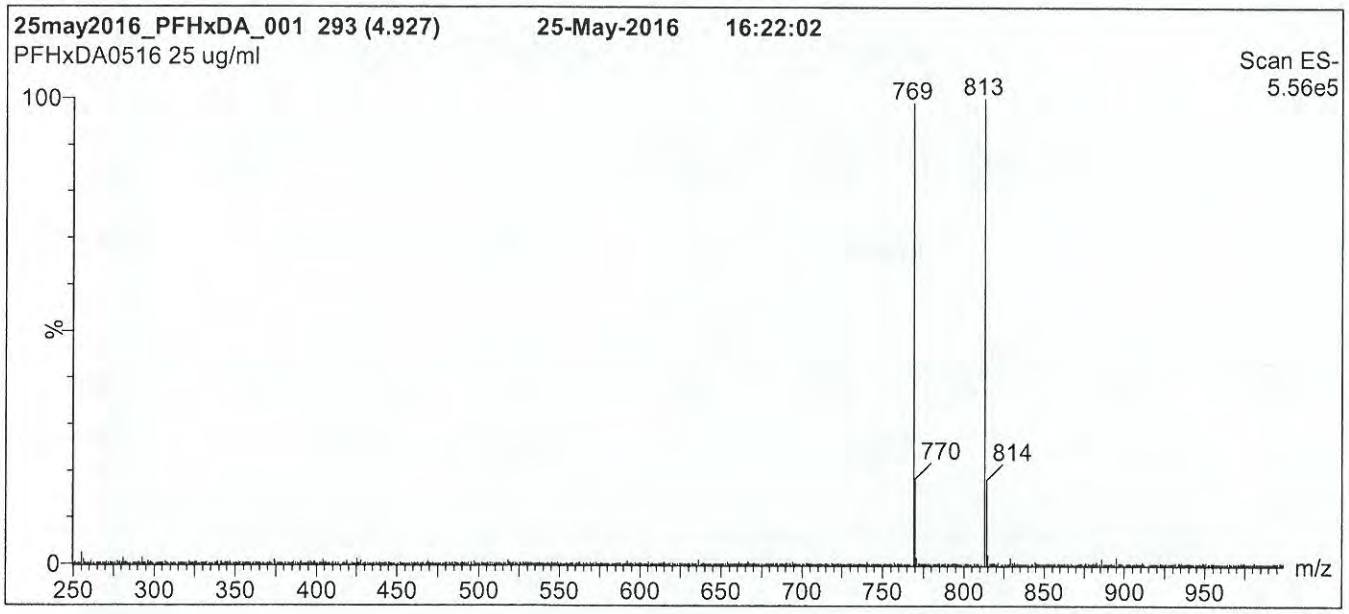
CALA Testing

ANAB ACCREDITED Reference Material Producer

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFHxDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 70% (80:20 MeOH:ACN) / 30% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 95% organic over 6 min and hold for 2.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

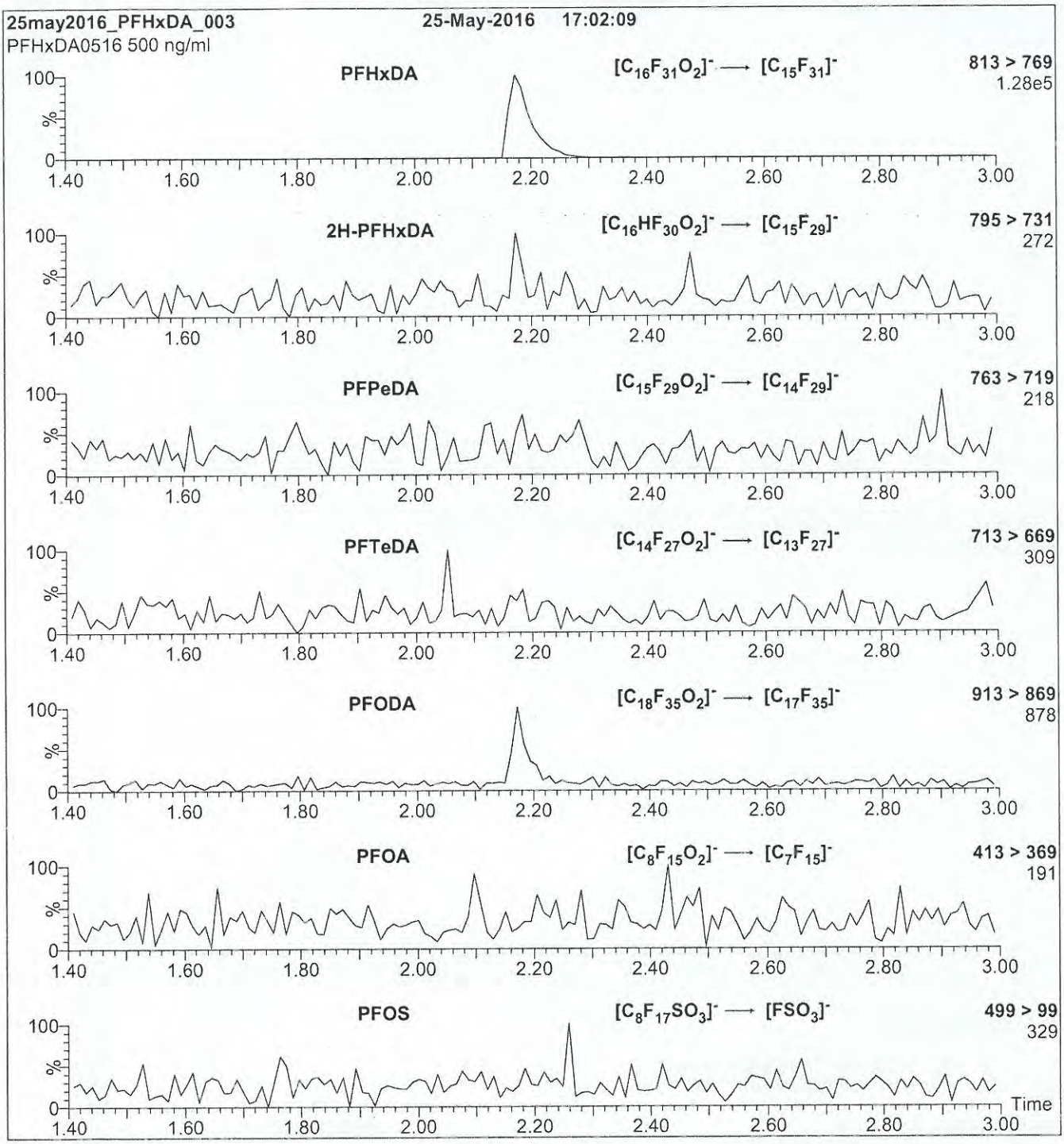
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 15

17H0826

WELLINGTON LABORATORIES

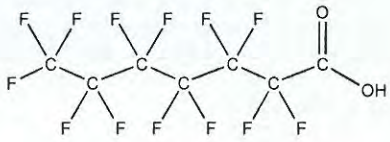
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA ✓
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA1216

STRUCTURE:

CAS #: 375-85-9



MOLECULAR FORMULA: $C_7HF_{13}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 364.06
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/02/2016
EXPIRY DATE: (mm/dd/yyyy) 12/02/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 12/12/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HAZARDS:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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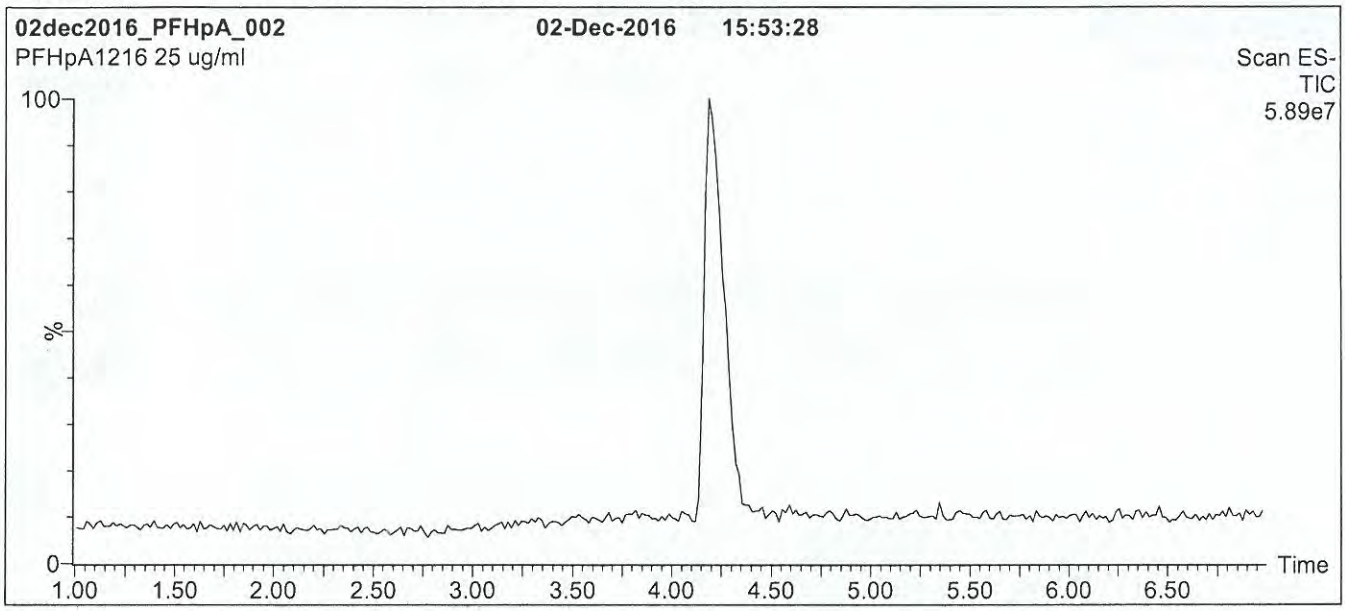
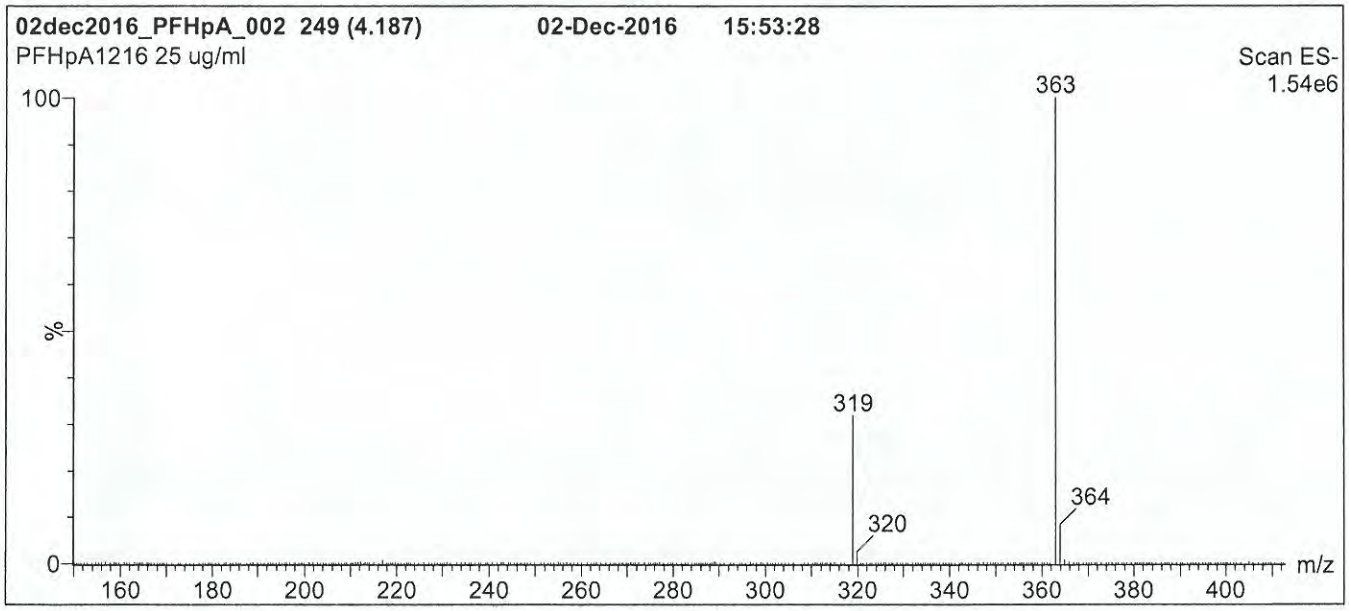
Figure 1: **PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

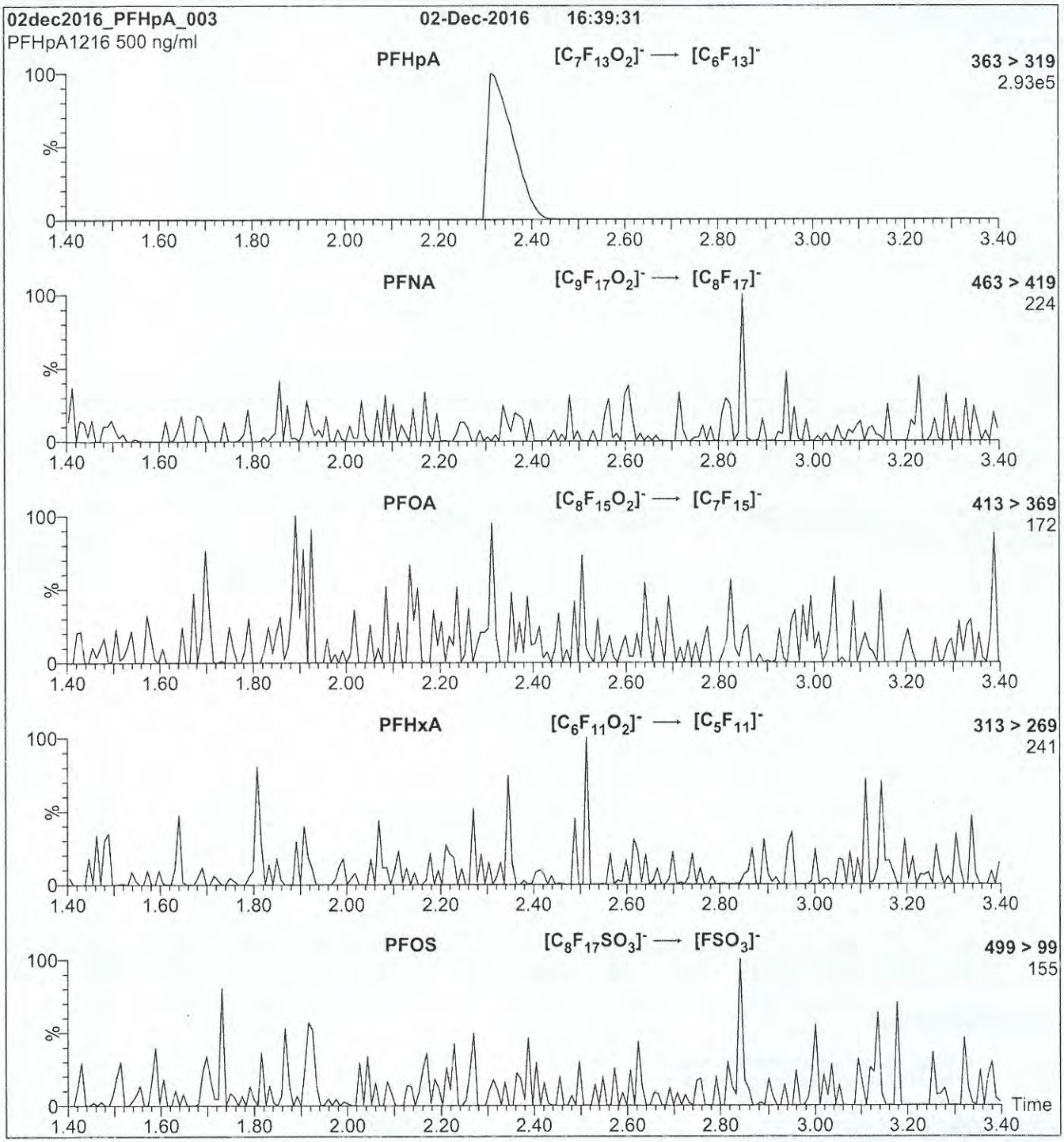
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 11

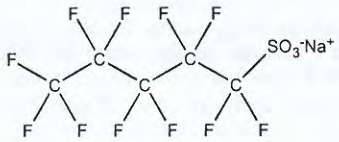
17K0815

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPeS
COMPOUND: Sodium perfluoro-1-pentanesulfonate
LOT NUMBER: LPFPeS0117

STRUCTURE:
CAS #: 630402-22-1



MOLECULAR FORMULA: $C_5F_{11}SO_3Na$
MOLECULAR WEIGHT: 372.09
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
46.9 ± 2.3 µg/ml (PFPeS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/11/2017
EXPIRY DATE: (mm/dd/yyyy) 01/11/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/06/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17K0815

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing

ANAB ACCREDITED Reference Material Producer

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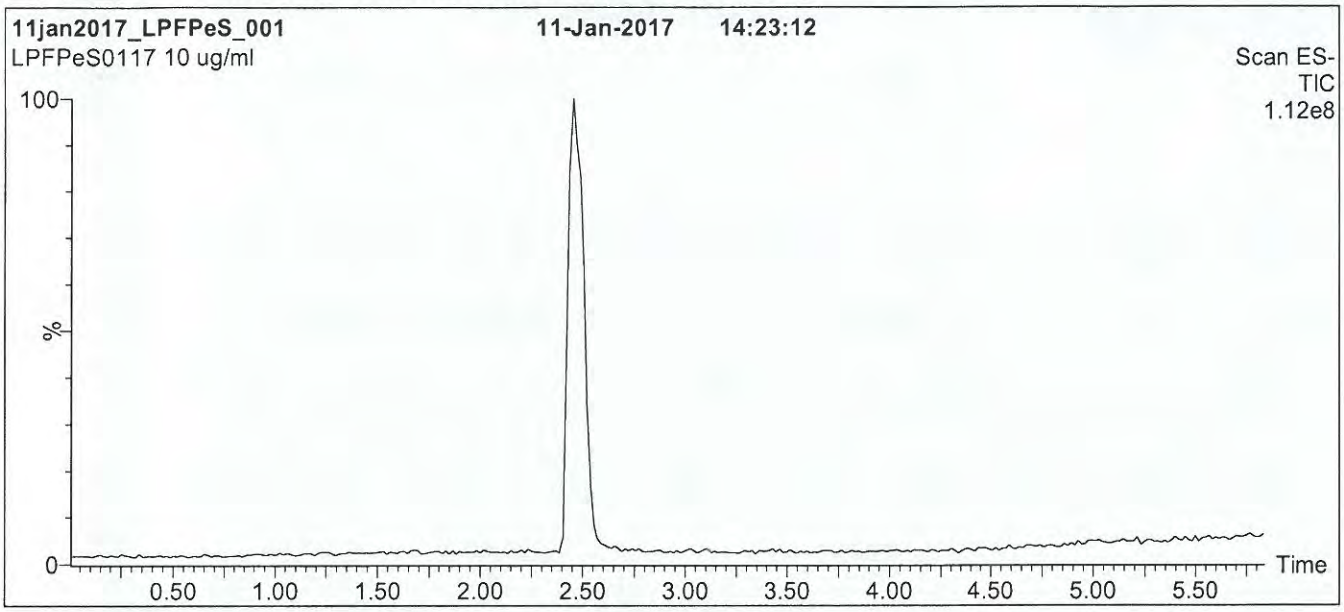
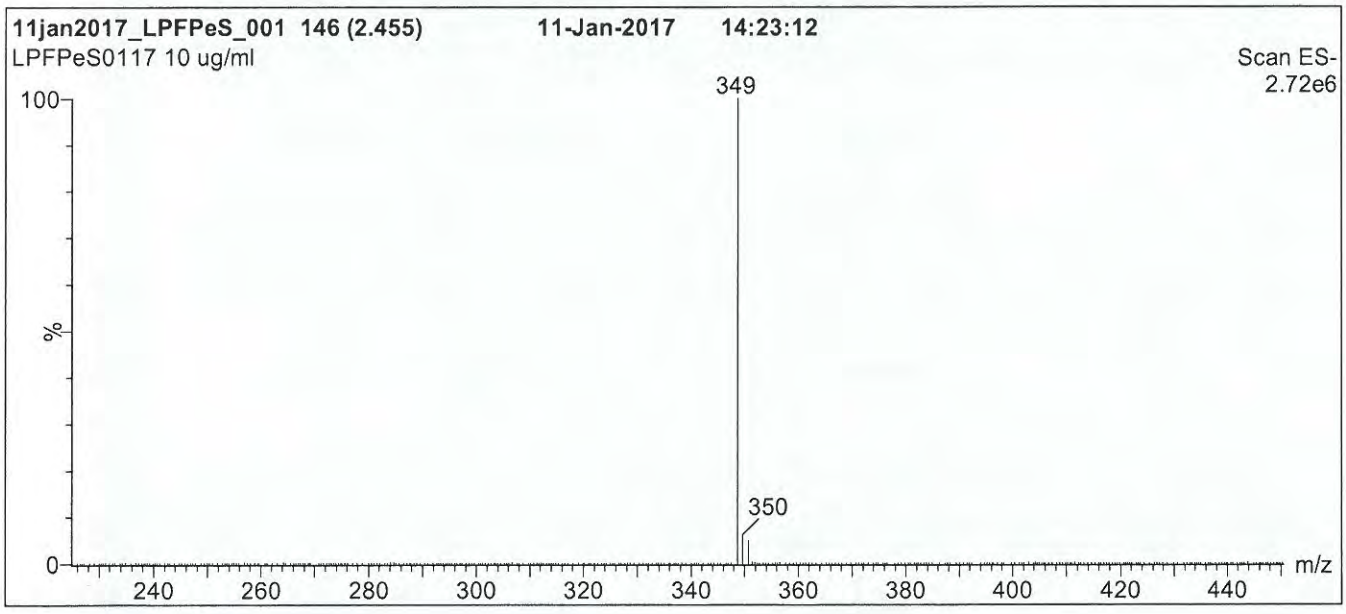
17K0815

Figure 1: **L-PFPeS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions over 0.5 min.
Time: 10 min

Flow: 300 µl/min

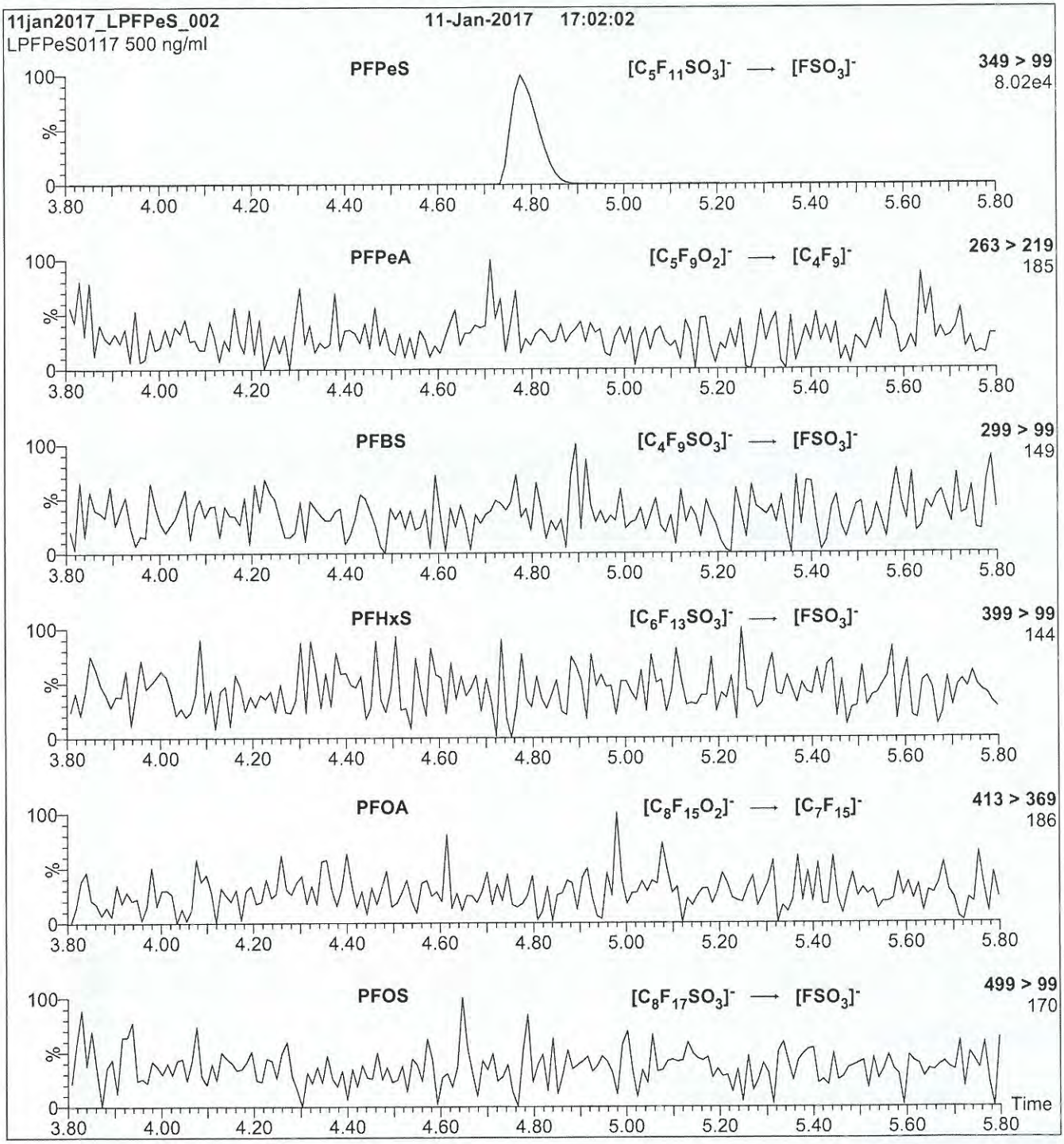
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17K0815

Figure 2: **L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFPeS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 30

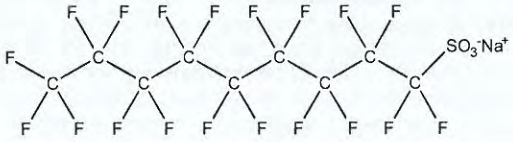
17K0817

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFNS
LOT NUMBER: LPFNS0917
COMPOUND: Sodium perfluoro-1-nonanesulfonate

STRUCTURE:
CAS #: 98789-57-2



MOLECULAR FORMULA: $C_9F_{19}SO_3Na$
MOLECULAR WEIGHT: 572.12
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
48.0 ± 2.4 µg/ml (PFNS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2017
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17K0817

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

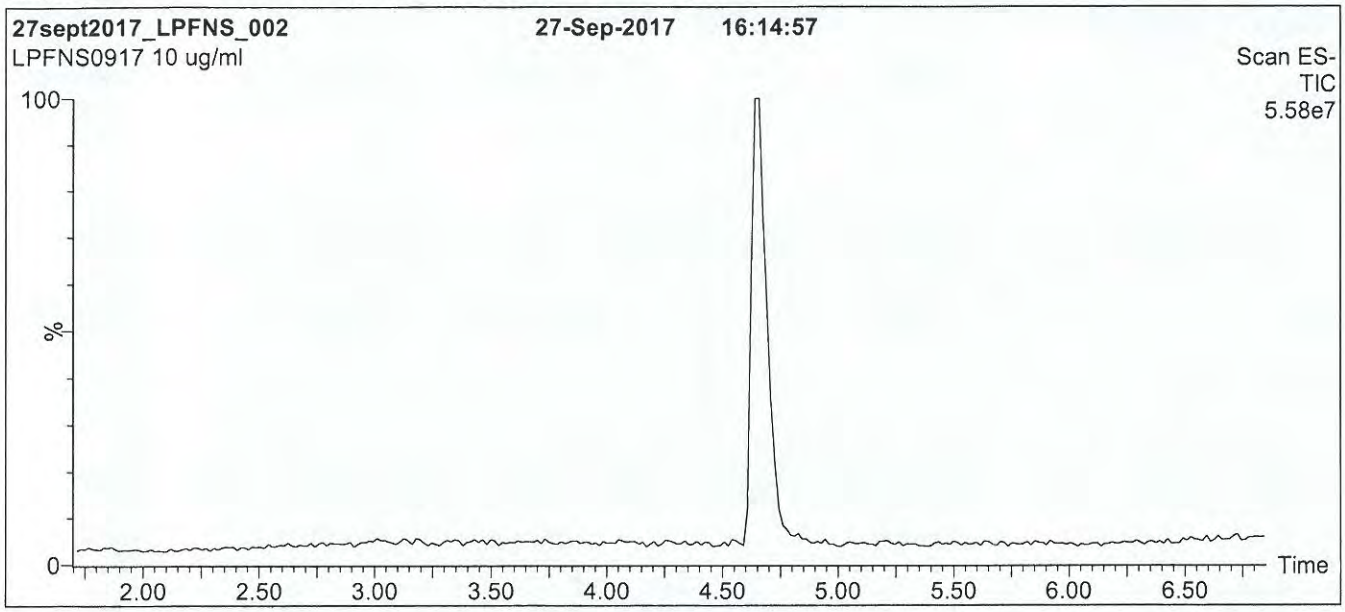
CALA Testing Accreditation No. A 1226

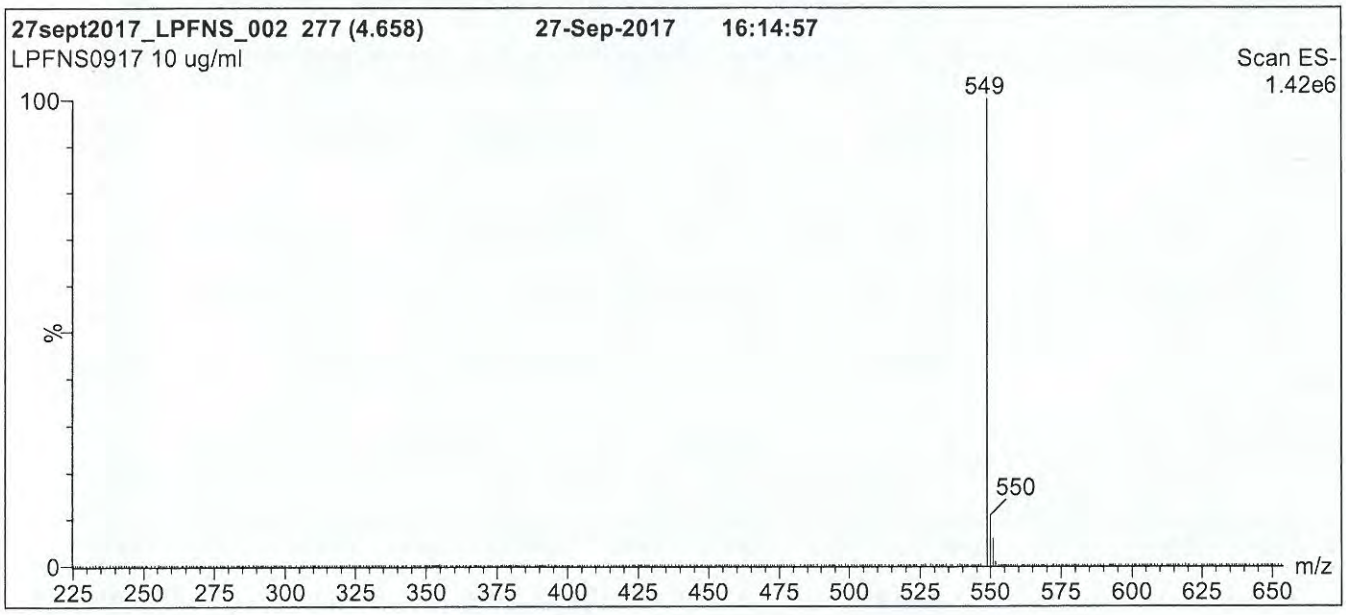
ANAB ACCREDITED Reference Material Producer

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17K0817

Figure 1: **L-PFNS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

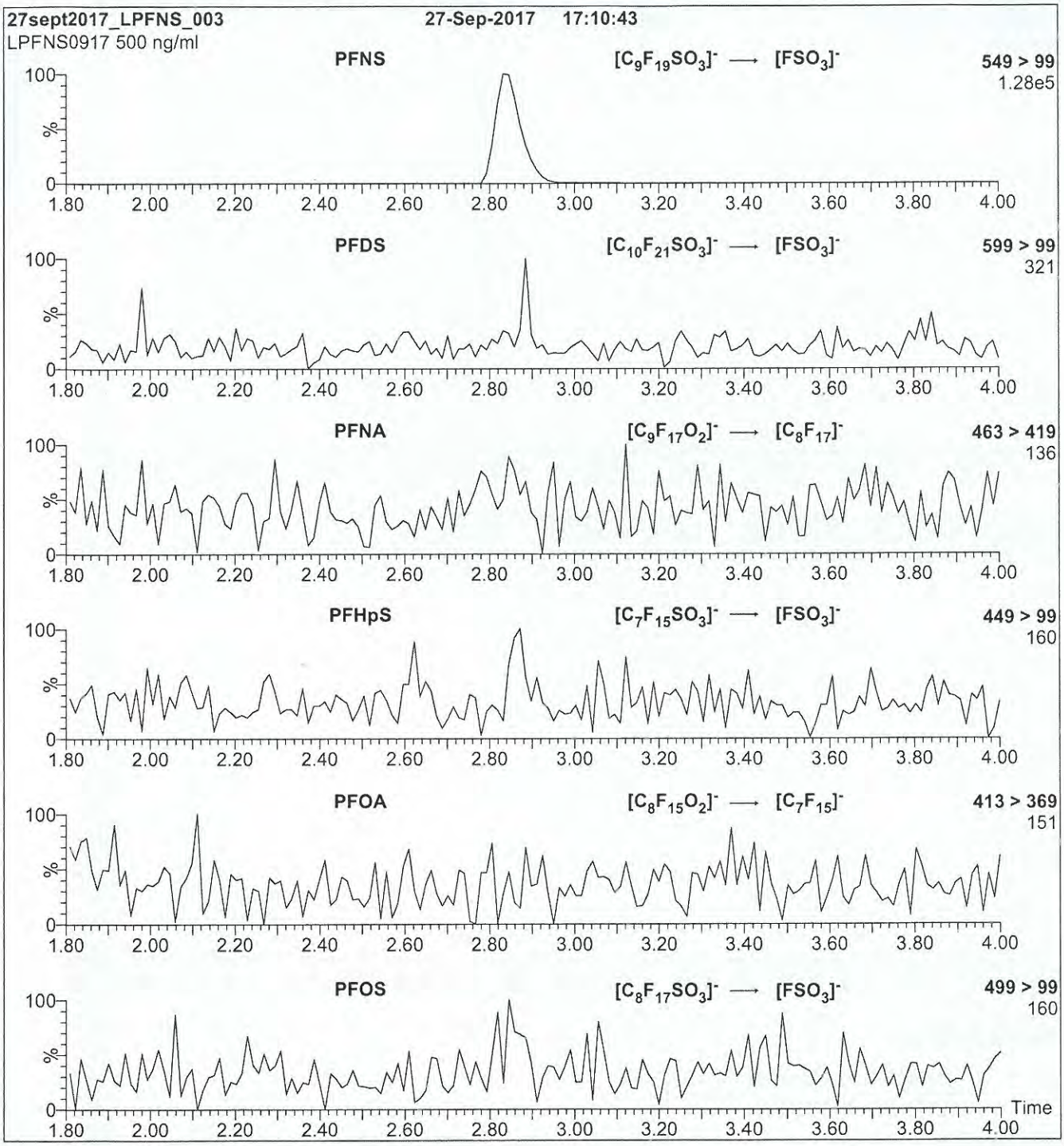
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17K0817

Figure 2: **L-PFNS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFNS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 45

17K0823

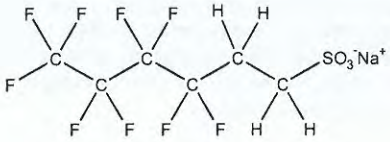
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 4:2FTS **LOT NUMBER:** 42FTS1216

COMPOUND: Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $C_6H_4F_9SO_3Na$ **MOLECULAR WEIGHT:** 350.13

CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol

46.7 ± 2.3 µg/ml (4:2FTS anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 12/12/2016

EXPIRY DATE: (mm/dd/yyyy) 12/12/2021

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 12/21/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17K0823

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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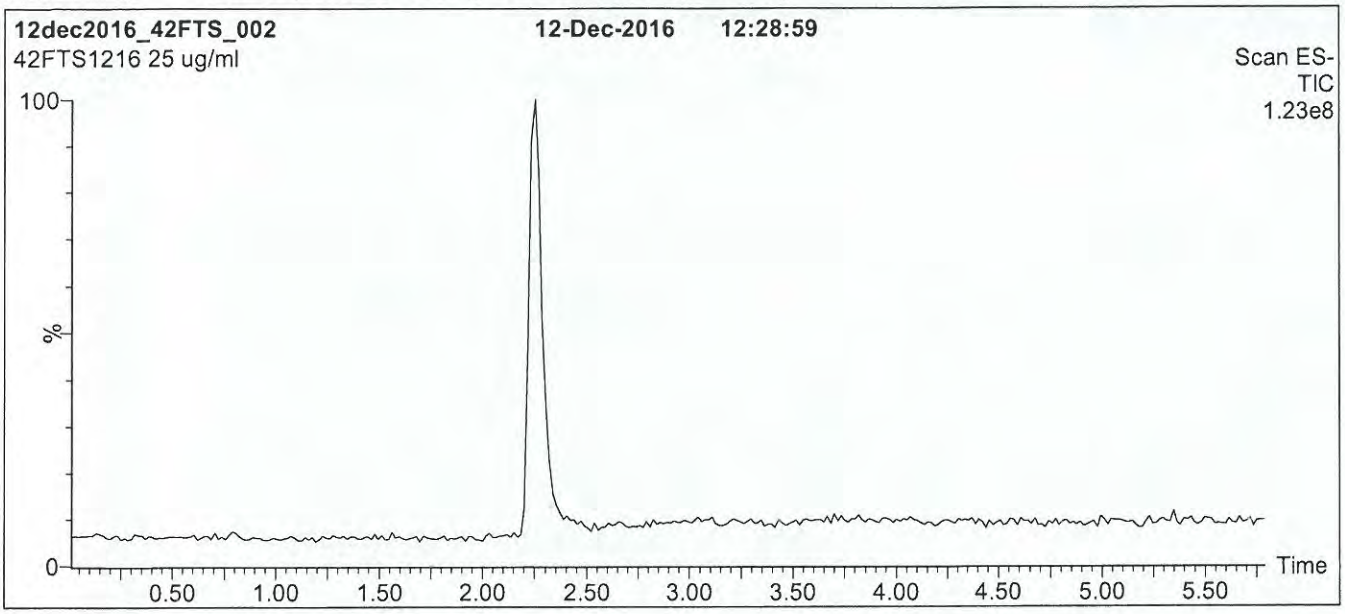
CALA Testing

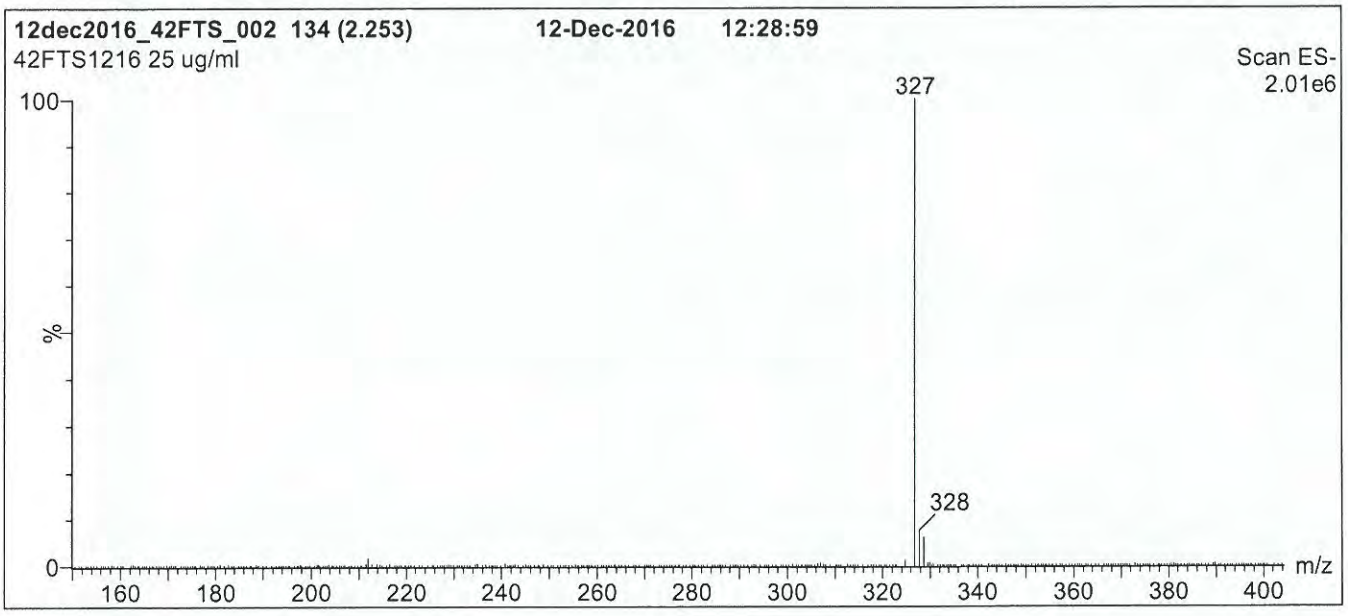
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

~~17K0801~~ ICBF 11/8/17 17K0823

Figure 1: **4:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

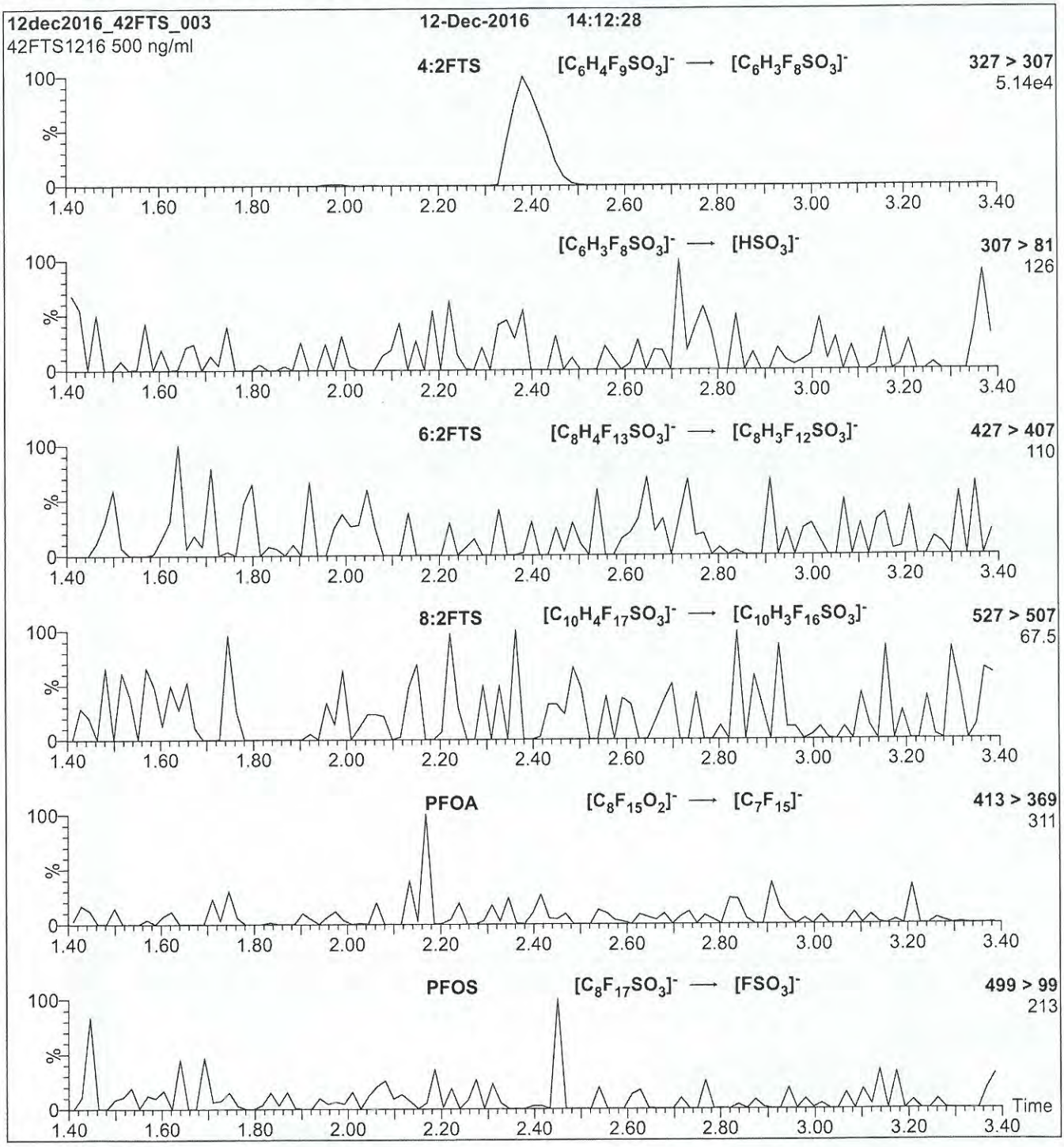
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17K0823

Figure 2: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

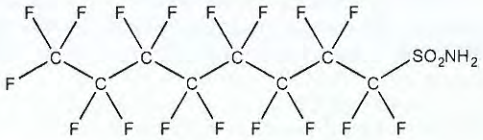
17L2008

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide
LOT NUMBER: FOSA0817I

STRUCTURE:
CAS #: 754-91-6



MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/01/2017		
EXPIRY DATE: (mm/dd/yyyy)	09/01/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2008

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CALA

ANAB ACCREDITED

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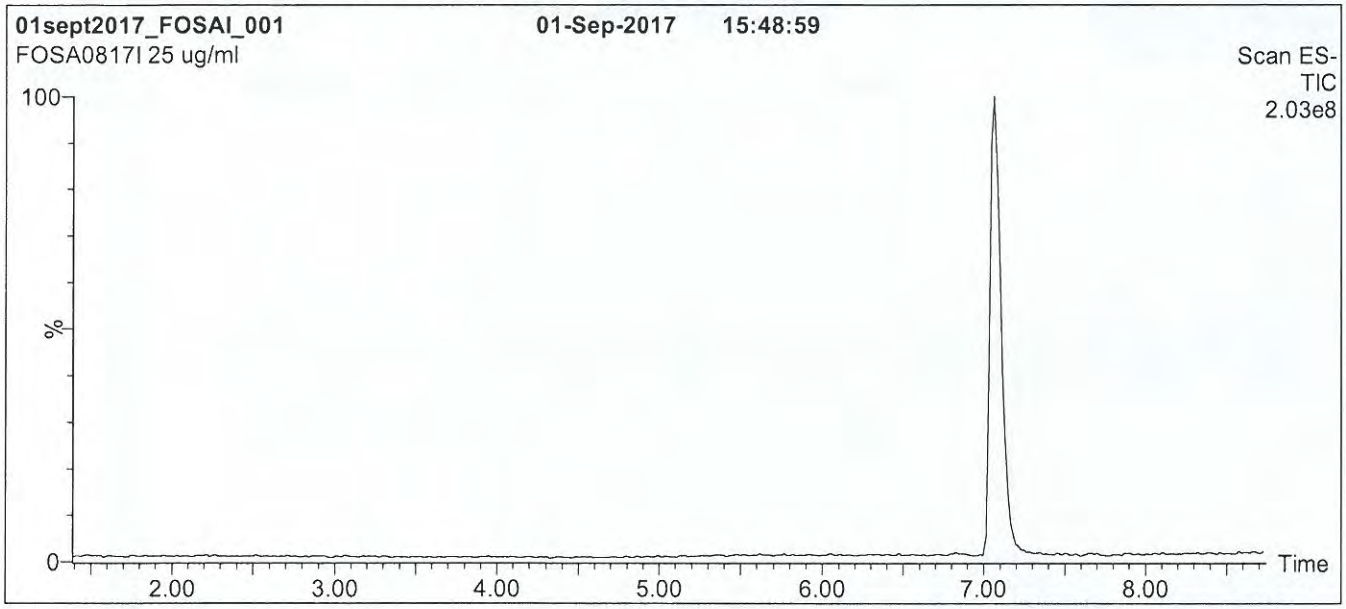
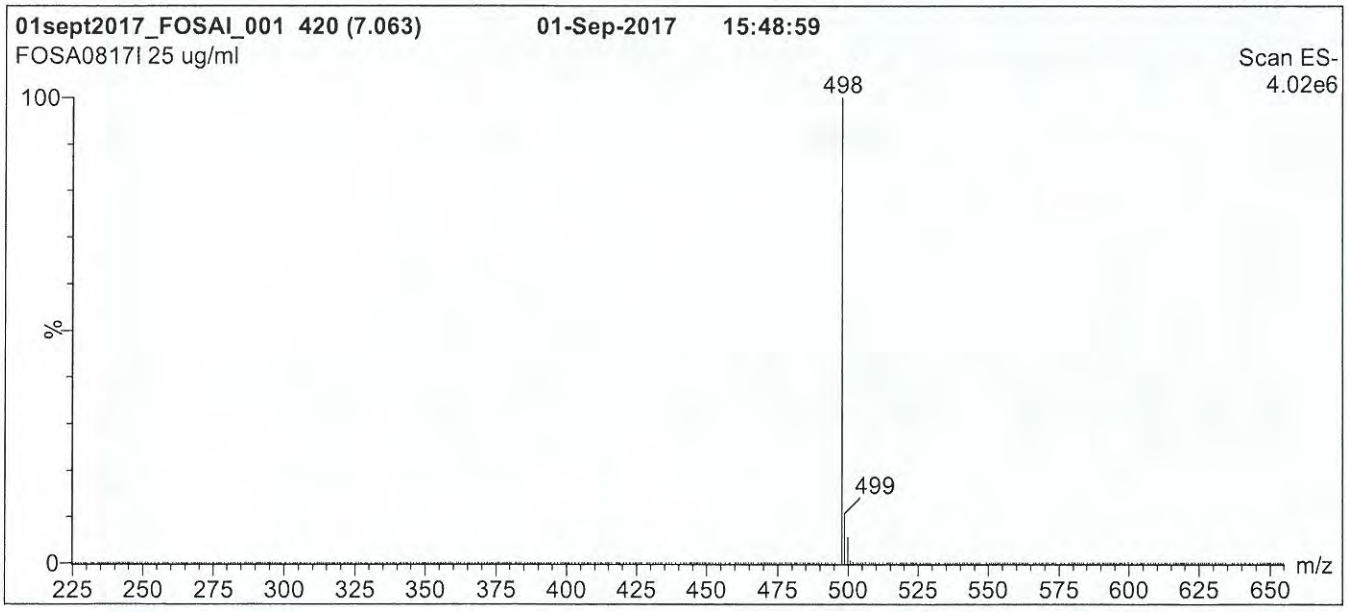
17L2008

Figure 1: **FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

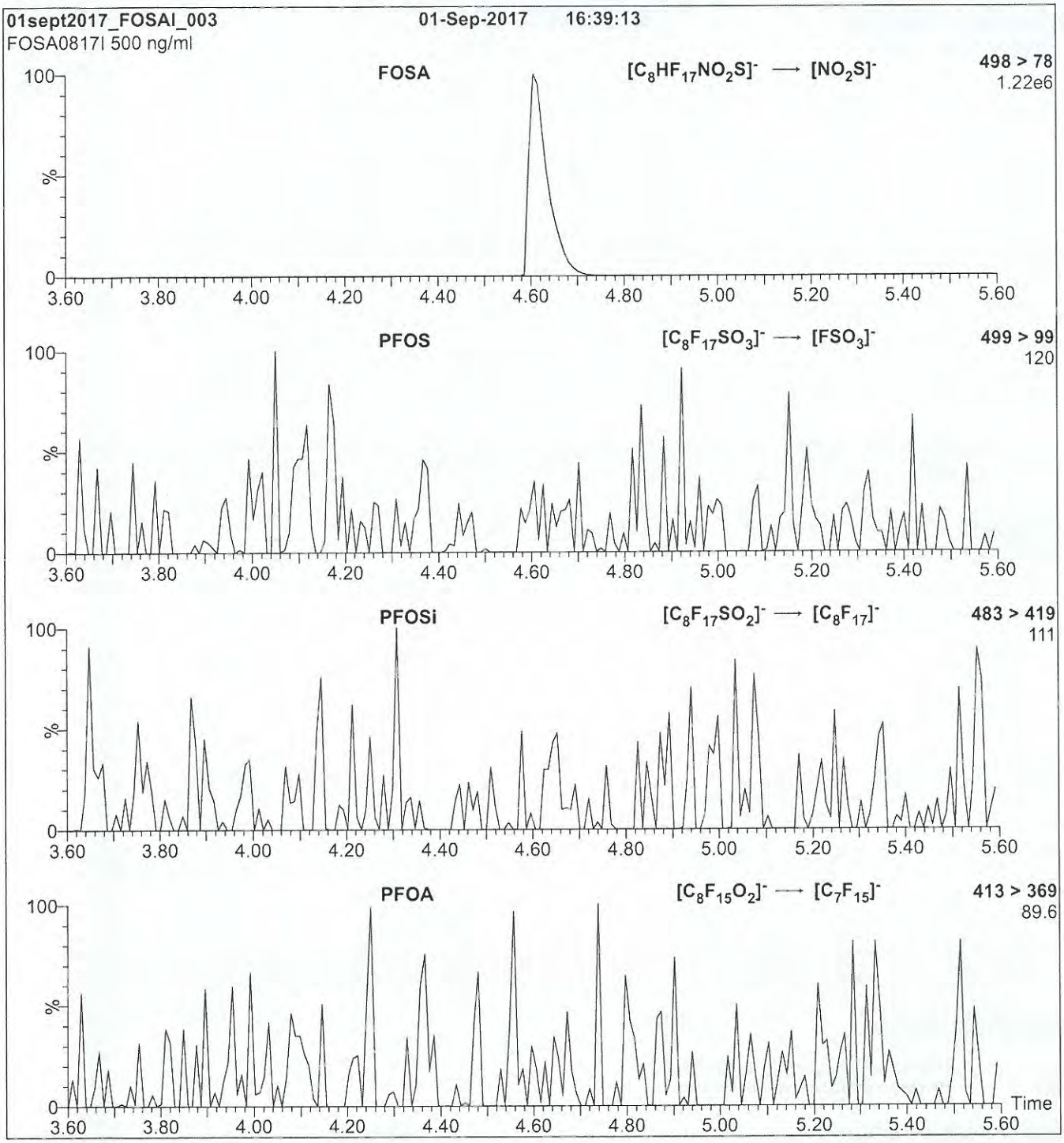
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2008

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 30

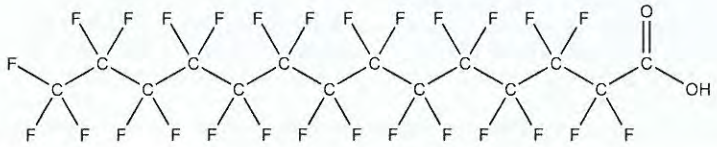
17L2009

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFTeDA
COMPOUND: Perfluoro-n-tetradecanoic acid
LOT NUMBER: PFTeDA0917

STRUCTURE:
CAS #: 376-06-7



MOLECULAR FORMULA: $C_{14}HF_{27}O_2$
MOLECULAR WEIGHT: 714.11
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/21/2017
EXPIRY DATE: (mm/dd/yyyy) 09/21/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of PFDoA ($C_{12}HF_{23}O_2$) and ~ 0.2% of PFPeDA ($C_{15}HF_{29}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/21/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2009

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

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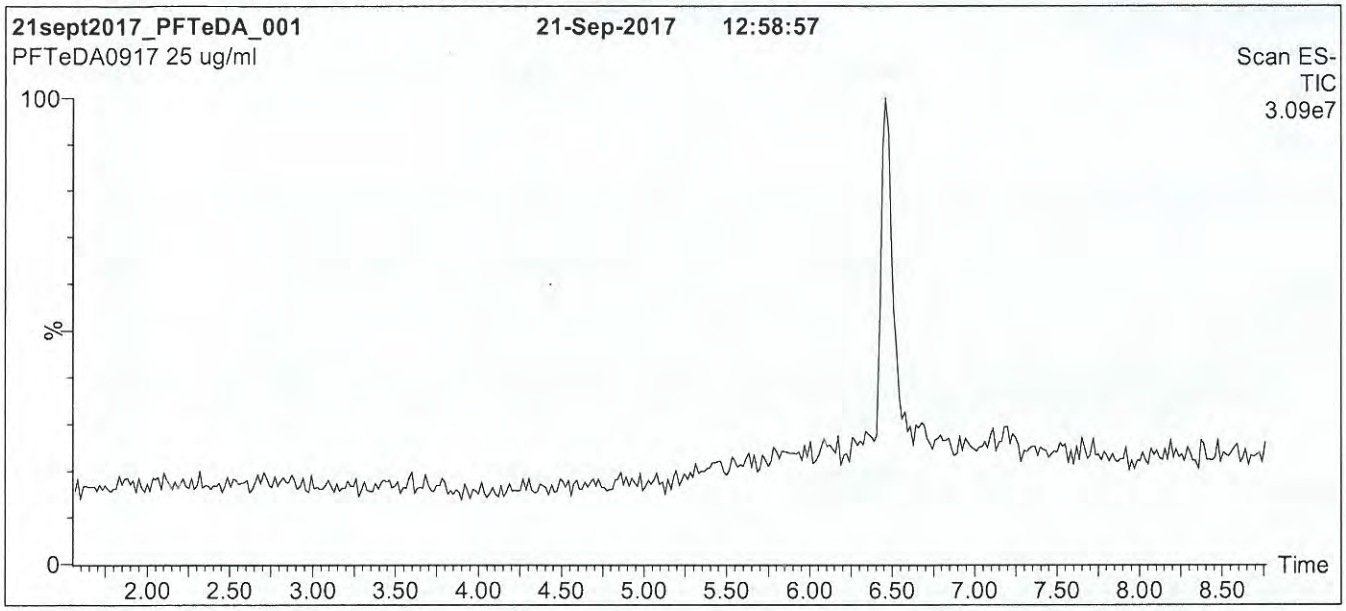
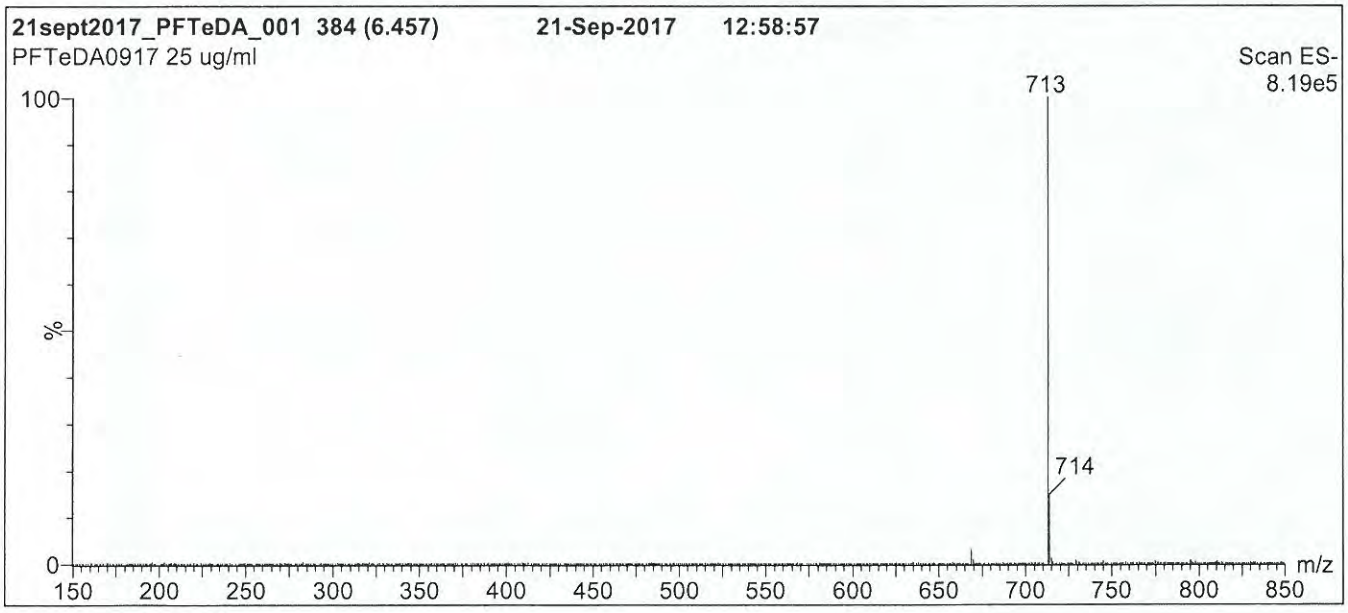
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2009

Figure 1: **PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

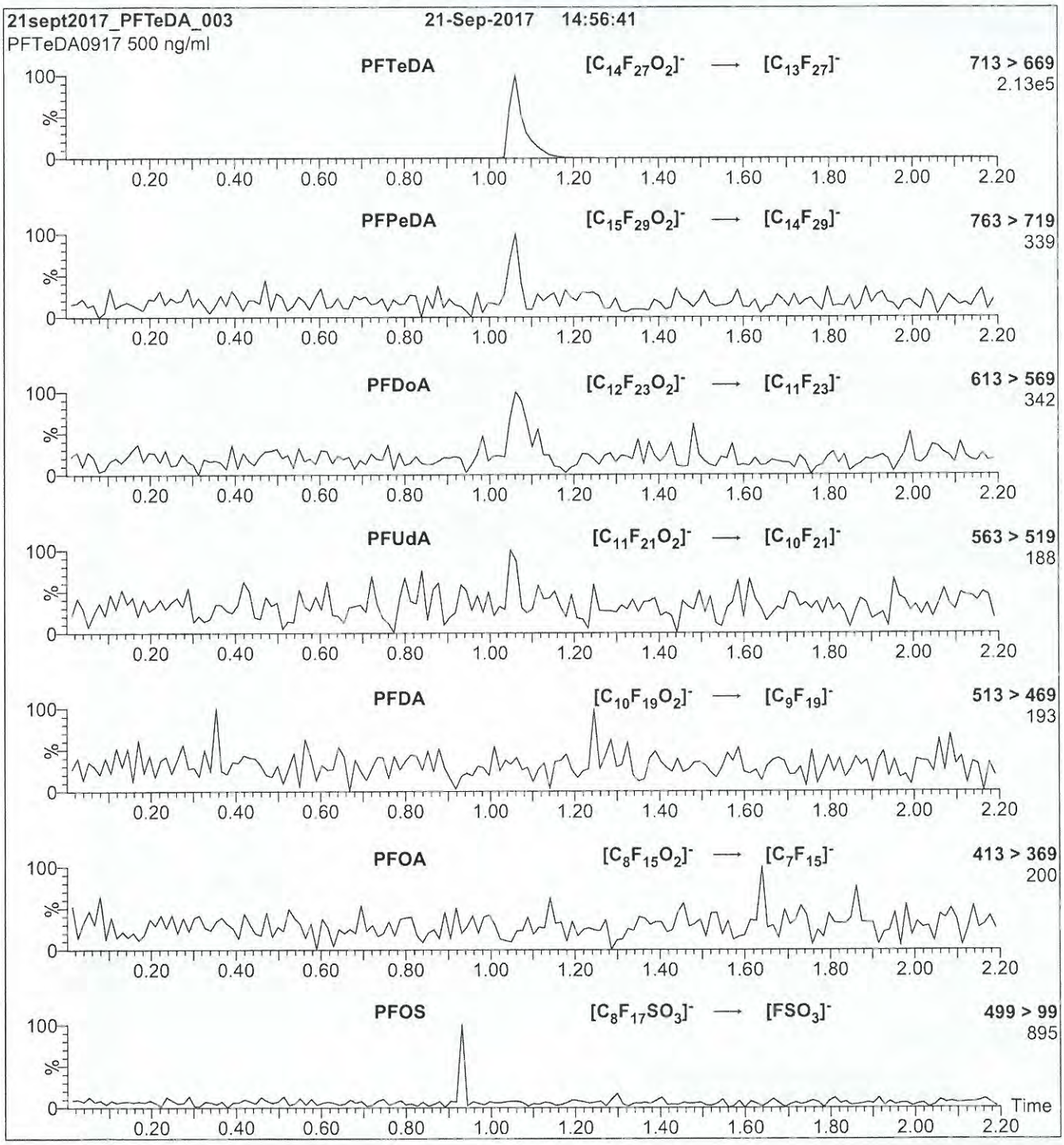
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2009

Figure 2: **PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 14

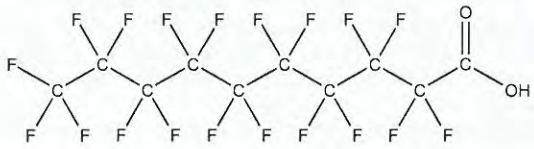
17L2013

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFDA
COMPOUND: Perfluoro-n-decanoic acid
LOT NUMBER: PFDA0517

STRUCTURE:
CAS #: 335-76-2



MOLECULAR FORMULA: $C_{10}HF_{19}O_2$
MOLECULAR WEIGHT: 514.08
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/29/2017
EXPIRY DATE: (mm/dd/yyyy) 05/29/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2013

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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QUALITY MANAGEMENT:

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ANAB ACCREDITED

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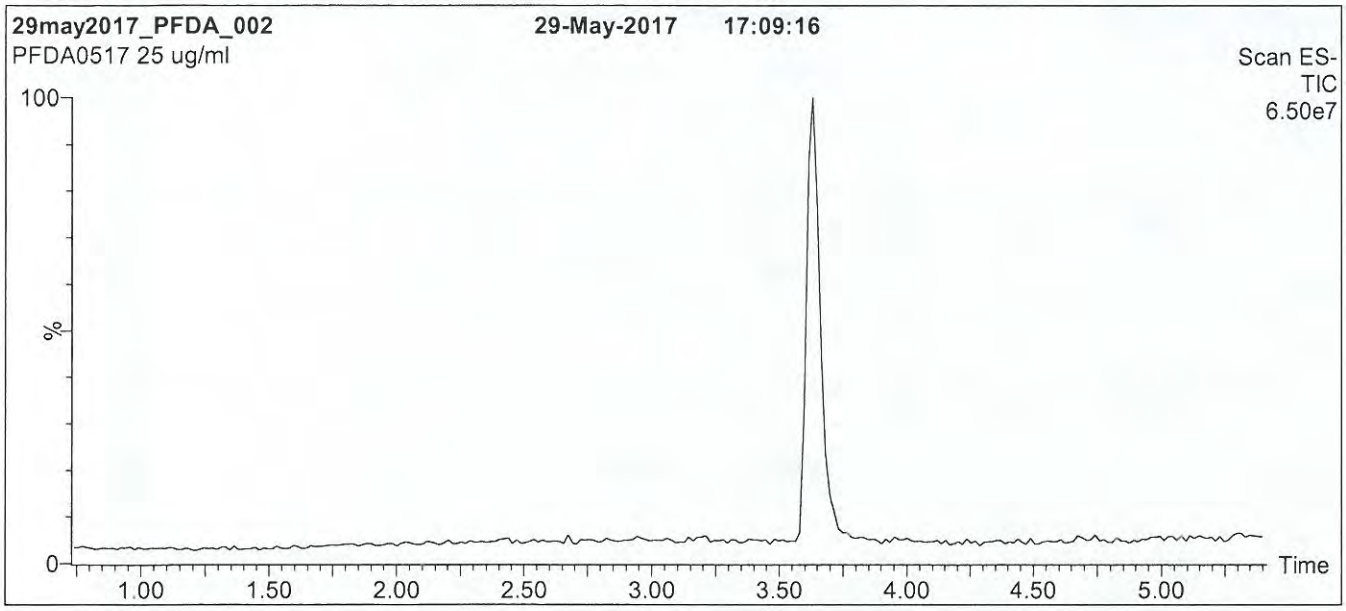
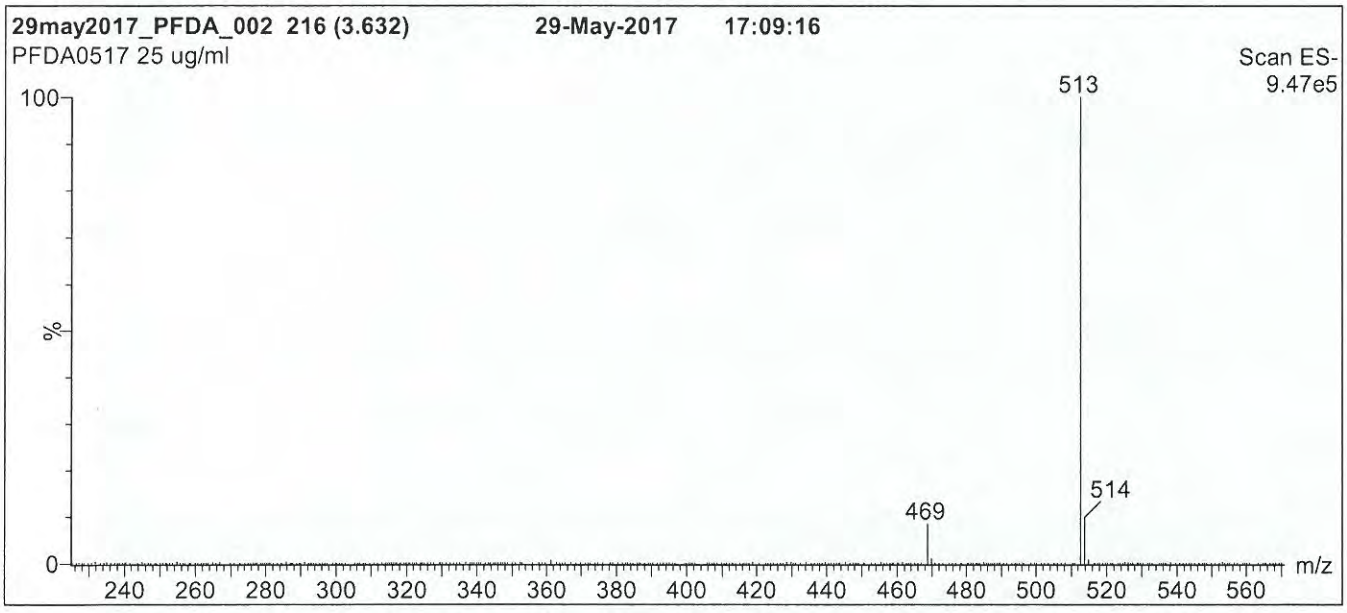
17L2013

Figure 1: **PFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

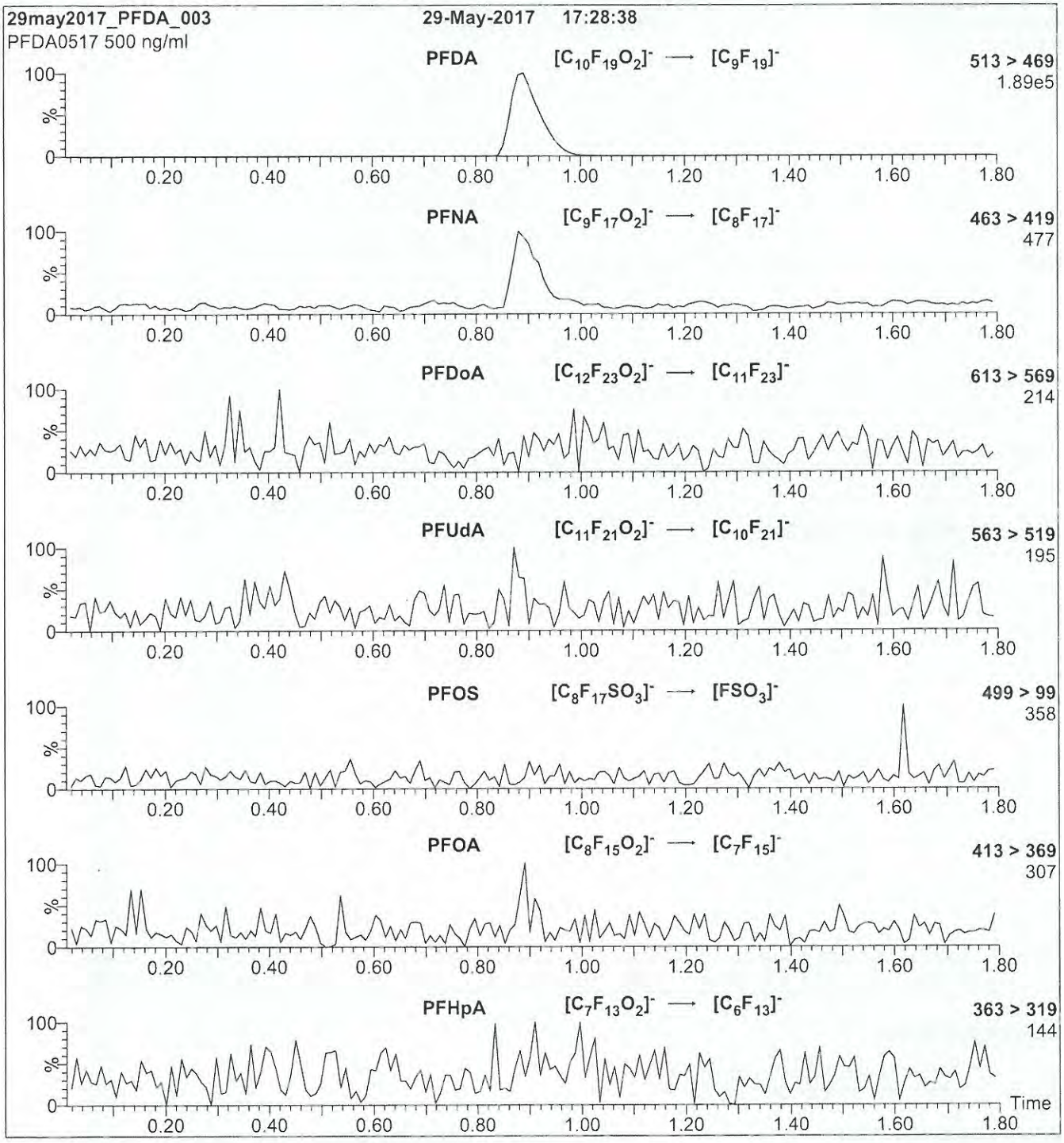
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2013

Figure 2: **PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 13

17L2014

WELLINGTON LABORATORIES

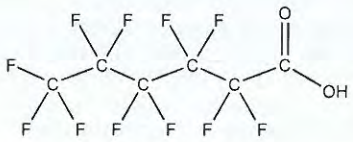
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid

LOT NUMBER: PFHxA0917

STRUCTURE:

CAS #: 307-24-4



MOLECULAR FORMULA: $C_6HF_{11}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 314.05
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of branched isomers.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/01/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L 2014

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HOMOGENEITY:

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ANAB ACCREDITED

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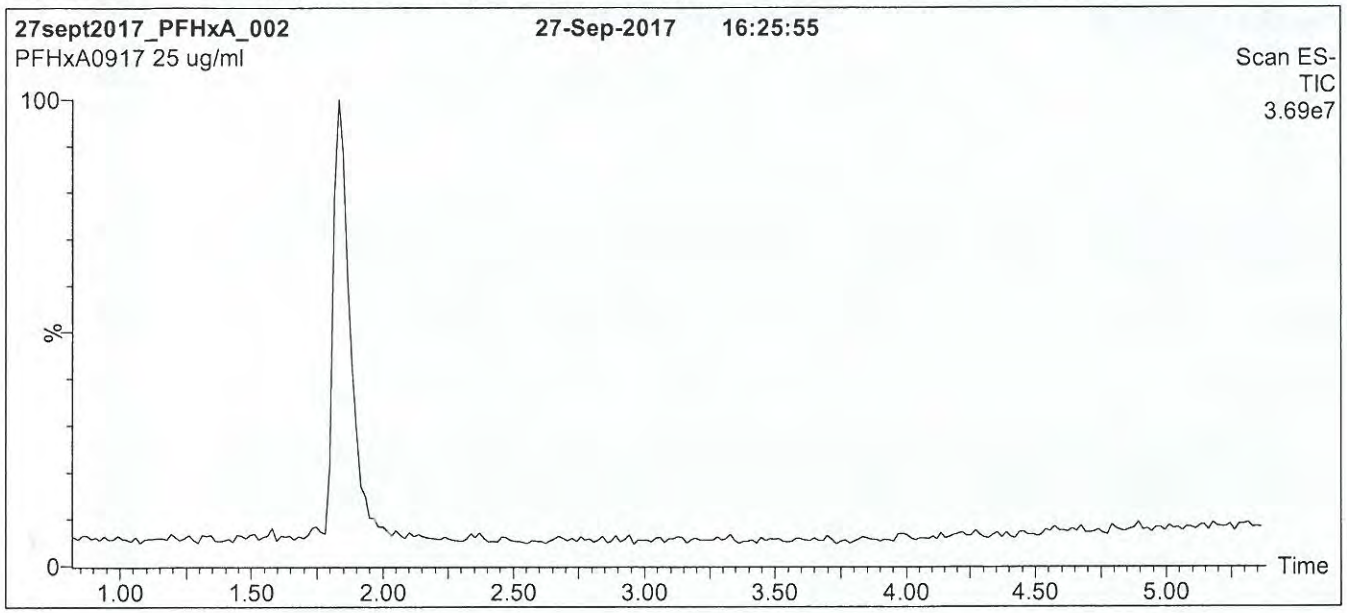
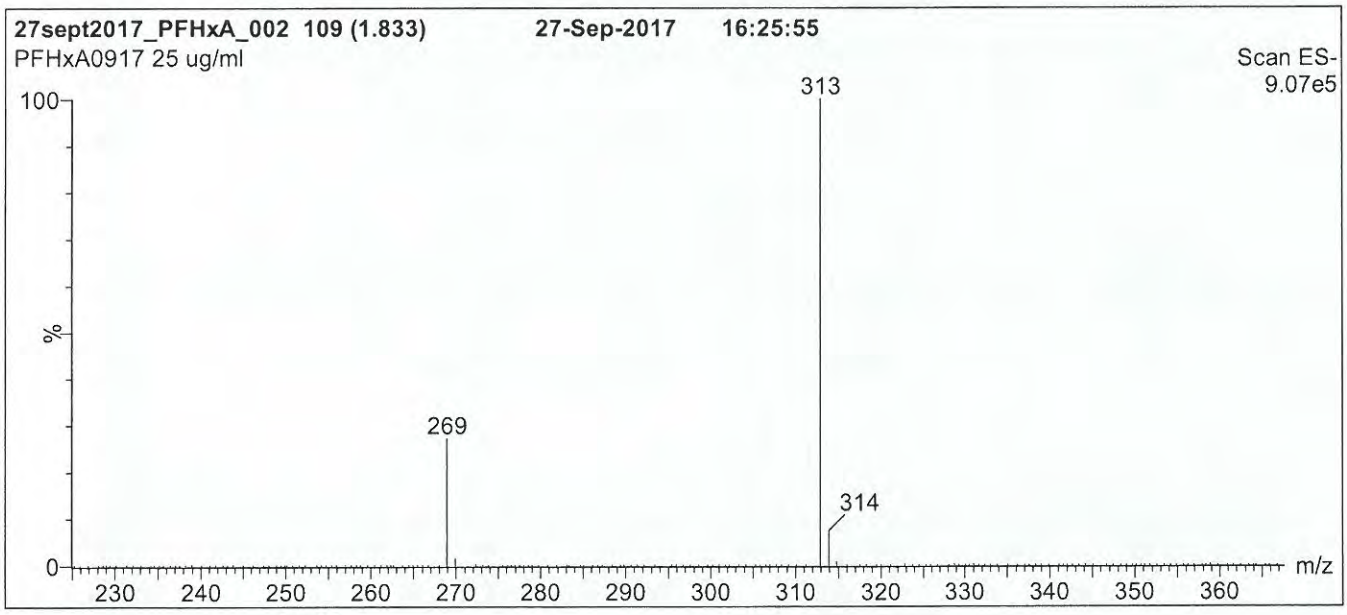
17L 2014

Figure 1: **PFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

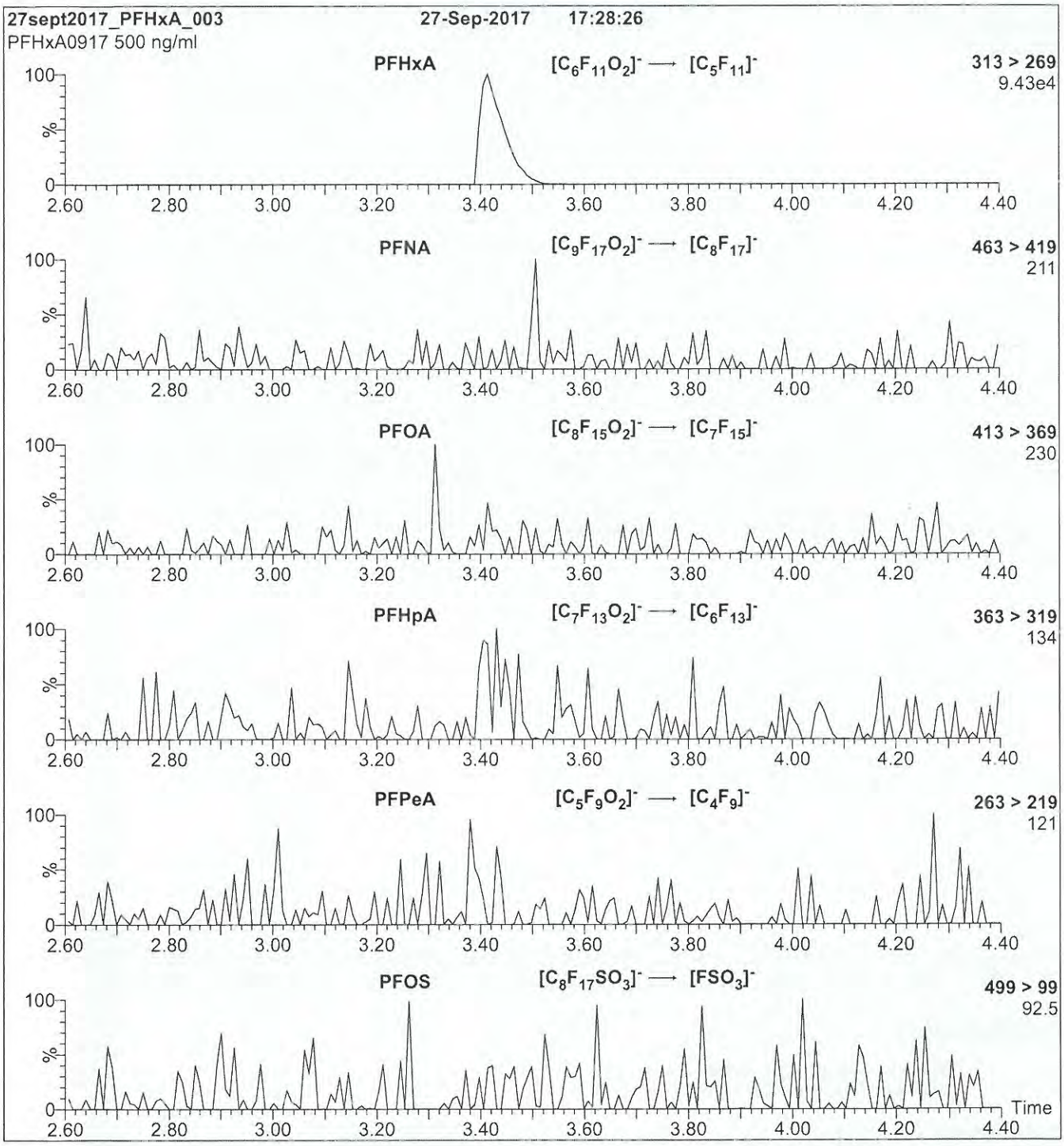
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2014

Figure 2: **PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 10

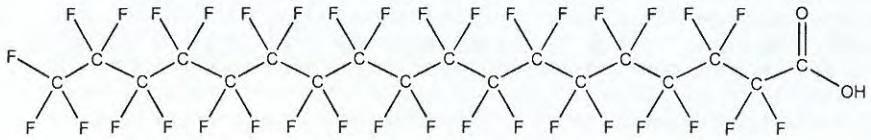
17L2020

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid
LOT NUMBER: PFODA0717

STRUCTURE:
CAS #: 16517-11-6



MOLECULAR FORMULA: $C_{18}HF_{35}O_2$
MOLECULAR WEIGHT: 914.14
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/13/2017
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2020

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ANAB ACCREDITED

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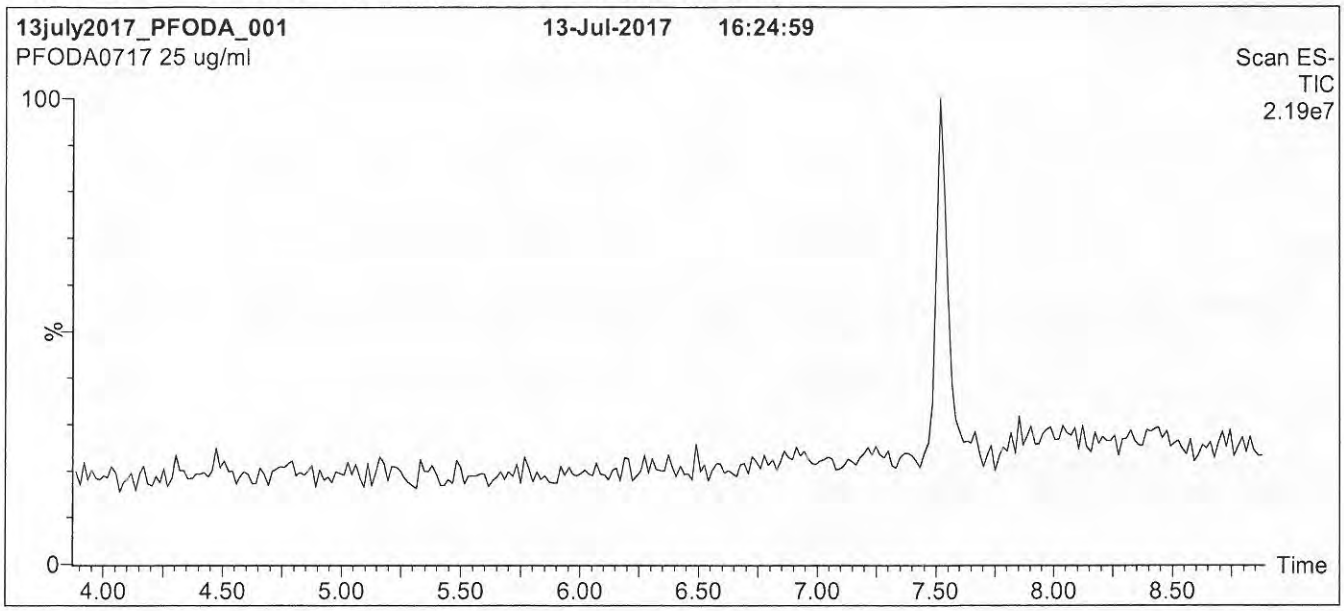
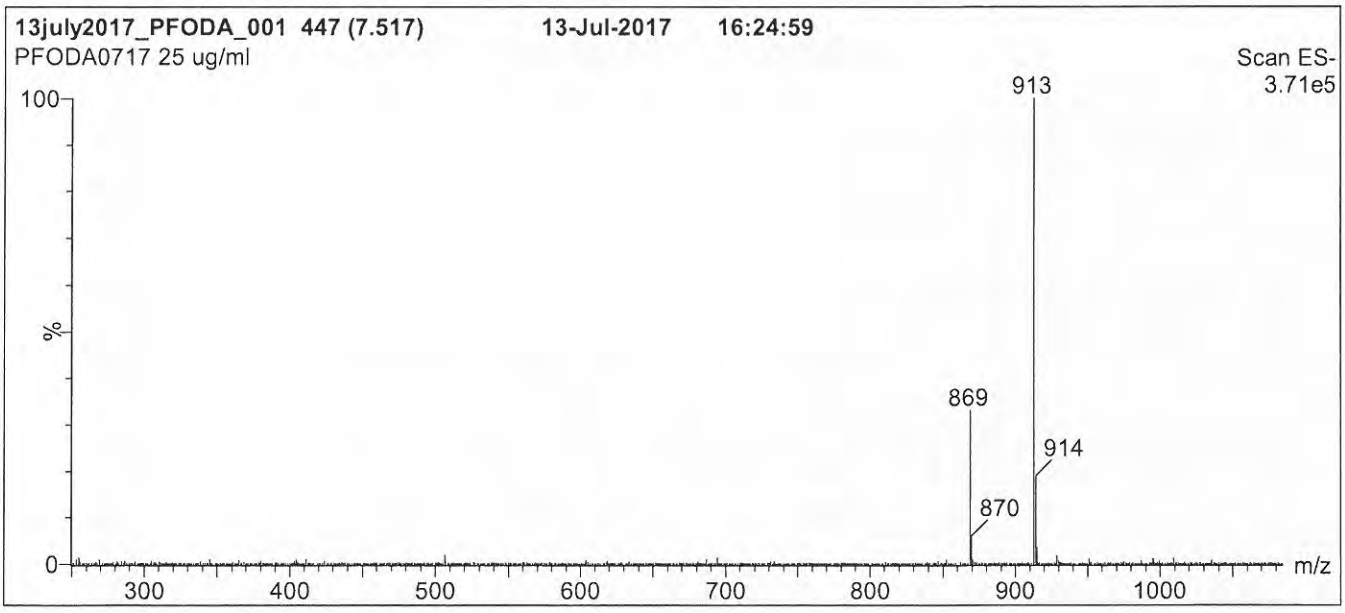
1/2/2020

Figure 1: **PFODA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

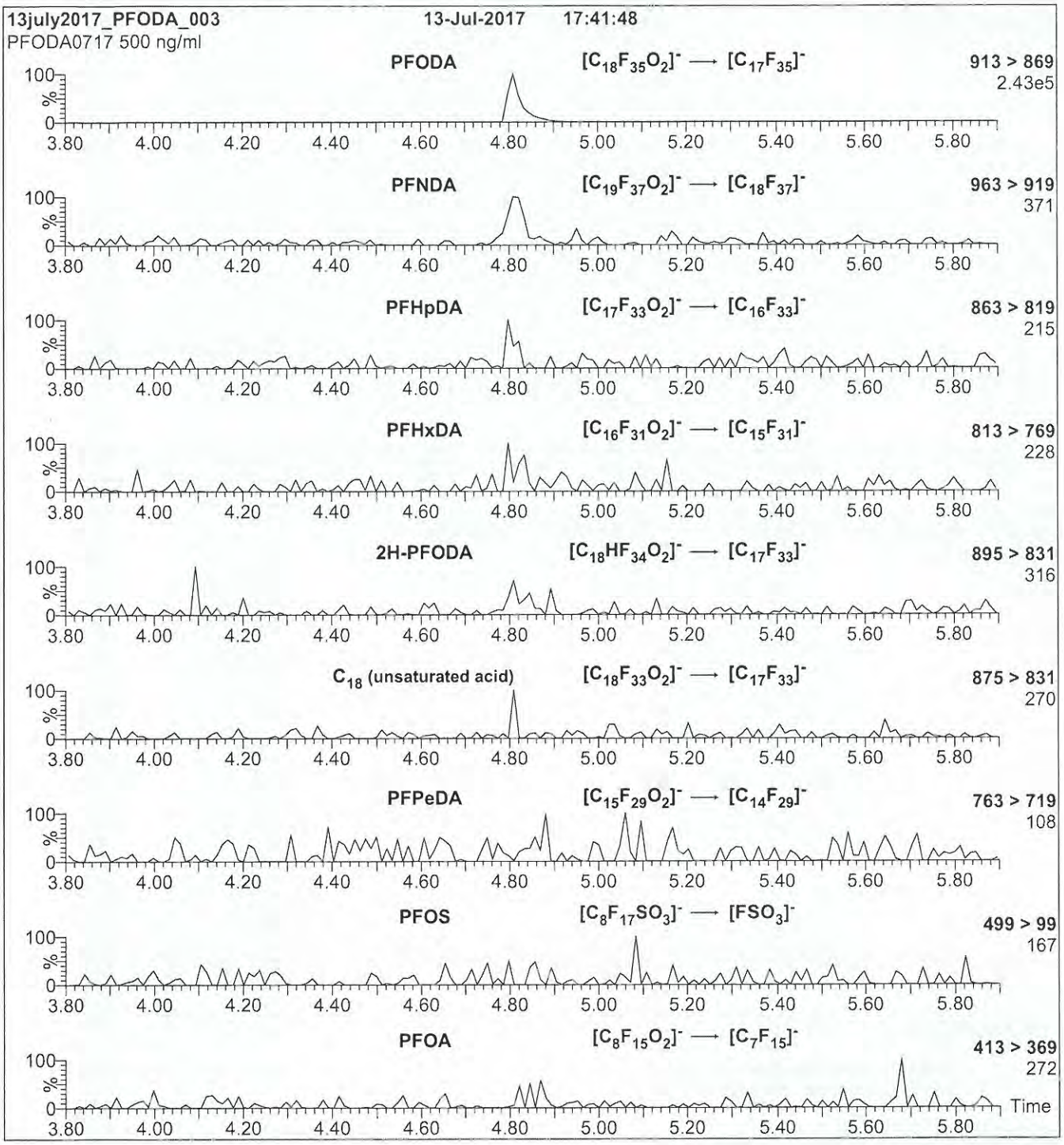
MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2020

Figure 2: **PFODA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFODA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

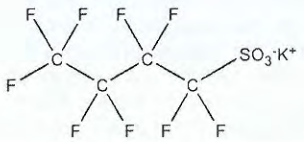
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 15

172021

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFBS	**LOT NUMBER:**	LPFBS0917
COMPOUND:	Potassium perfluoro-1-butanesulfonate		
STRUCTURE:		**CAS #:**	29420-49-3



MOLECULAR FORMULA:	$C_4F_9SO_3K$	**MOLECULAR WEIGHT:**	338.19
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt) 44.2 ± 2.2 µg/ml (PFBS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/21/2017		
EXPIRY DATE: (mm/dd/yyyy)	09/21/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/22/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2021

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2 \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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CALA

ANAB ACCREDITED

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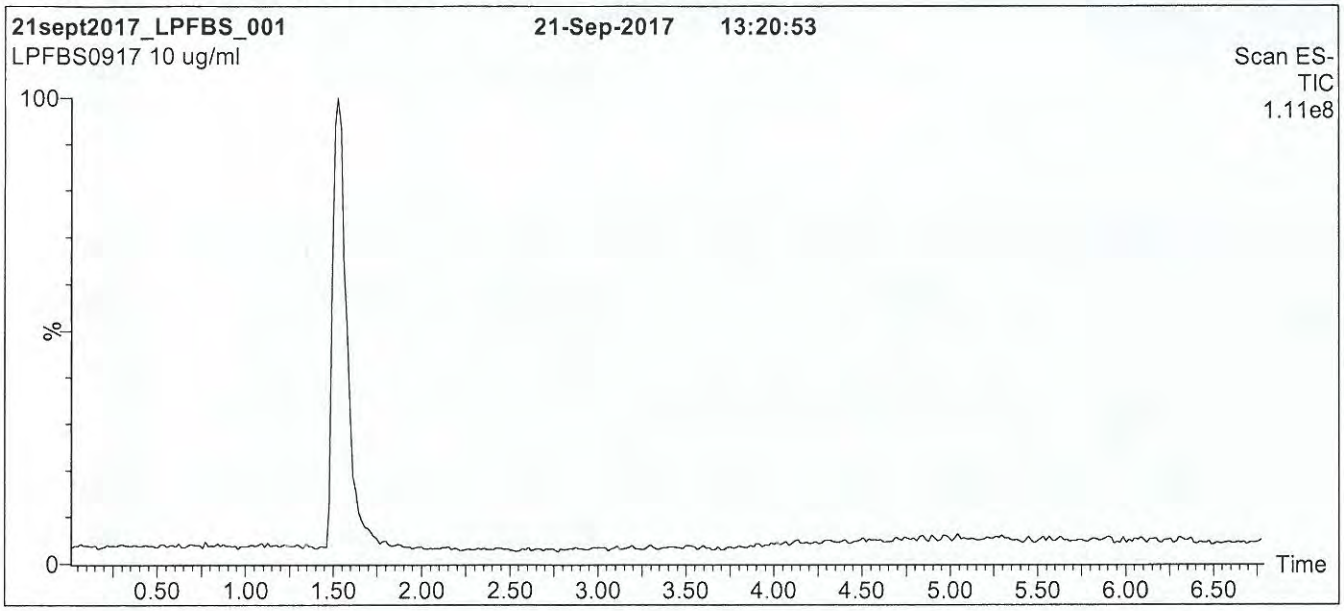
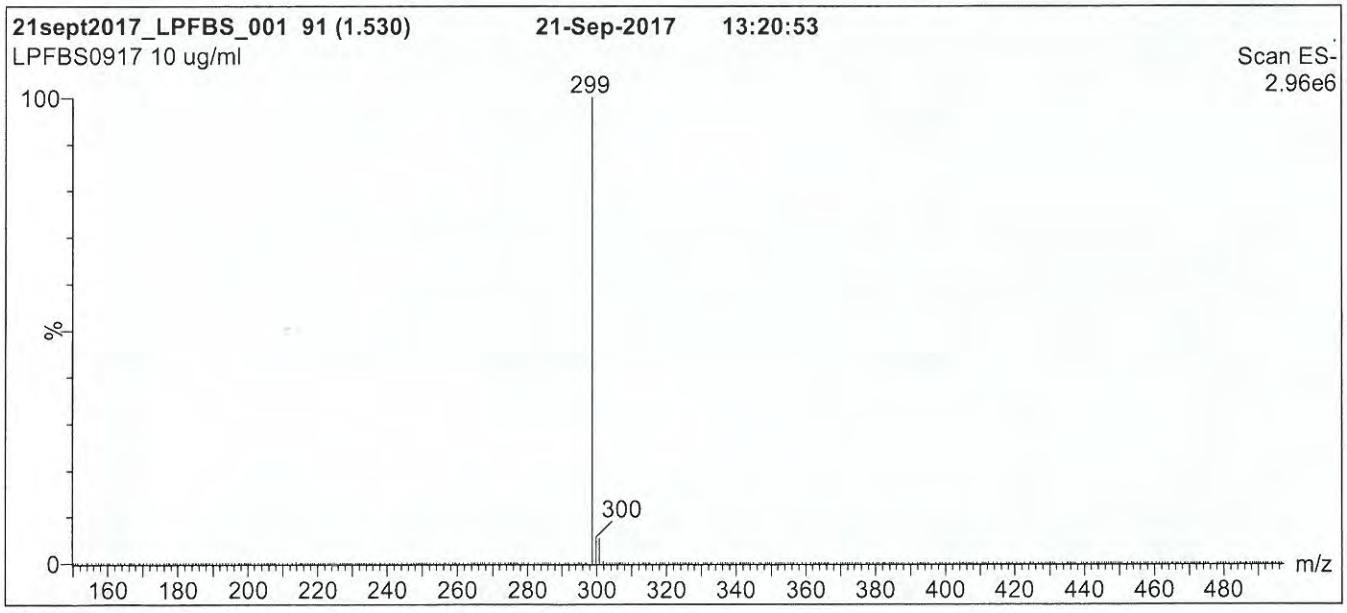
17-2021

Figure 1: **L-PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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MS: **Micromass Quattro *micro* API MS**

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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

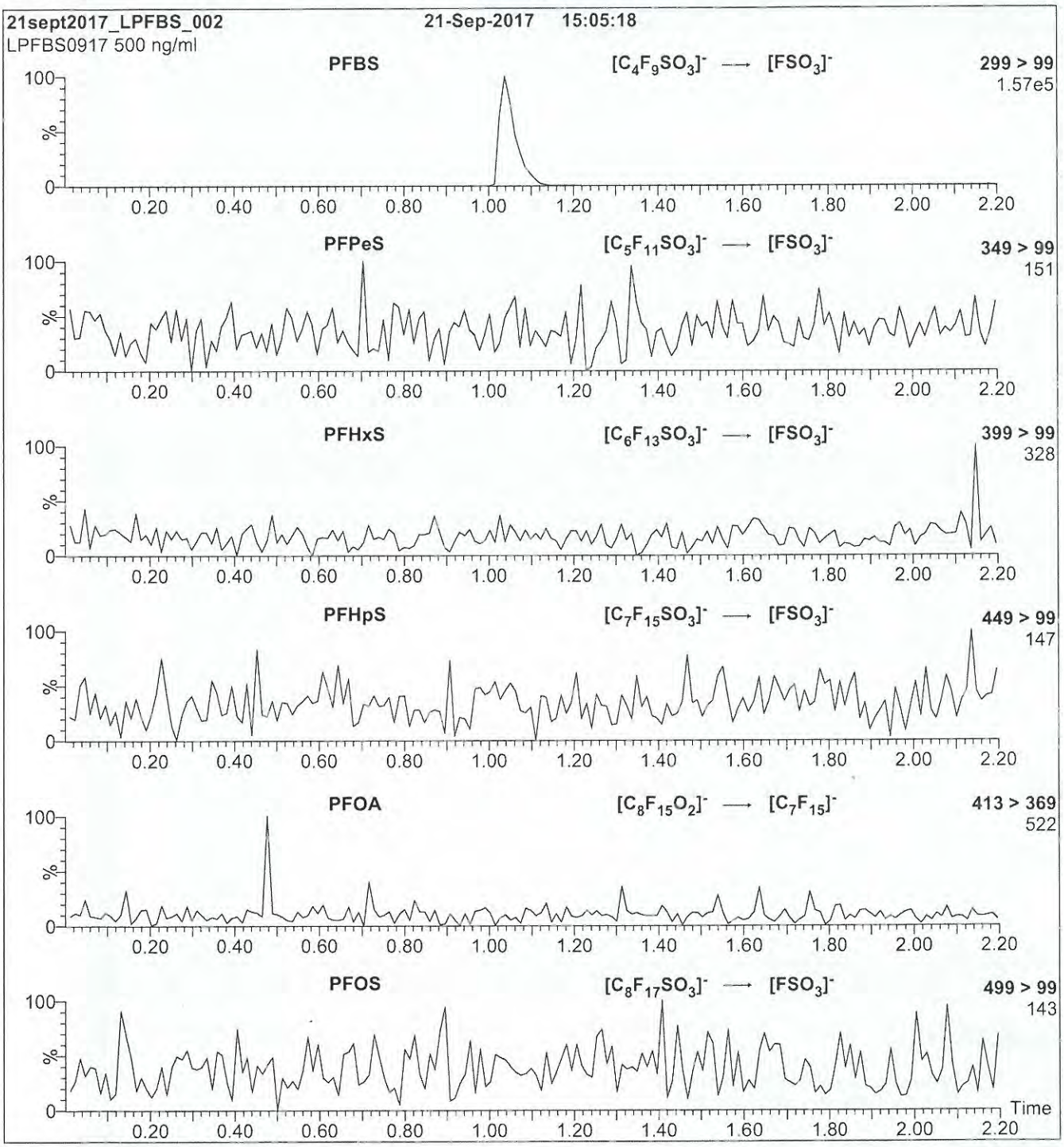
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2021

Figure 2: **L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

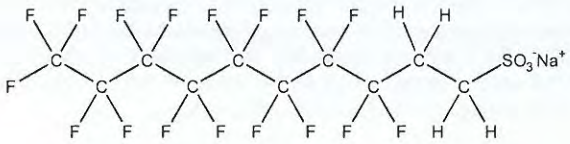
17L2022

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS1216
COMPOUND: Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $C_{10}H_4F_{17}SO_3Na$ **MOLECULAR WEIGHT:** 550.16
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.9 ± 2.4 µg/ml (8:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/12/2016
EXPIRY DATE: (mm/dd/yyyy) 12/12/2021
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 12/21/2016 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2022

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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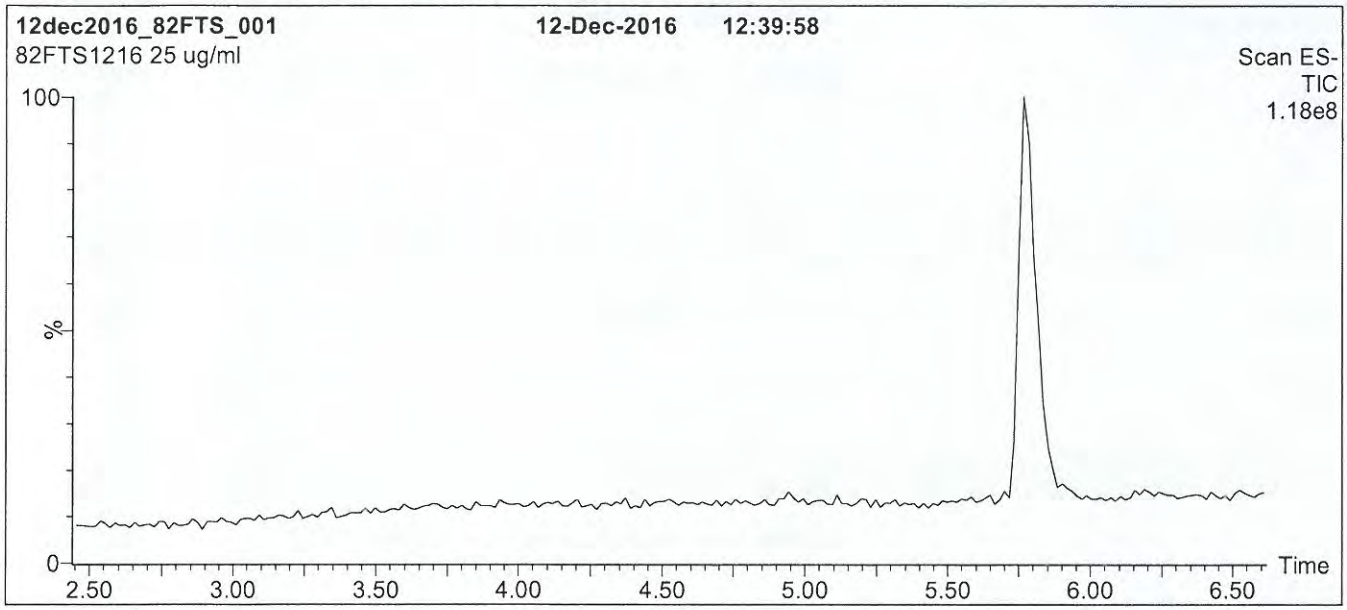
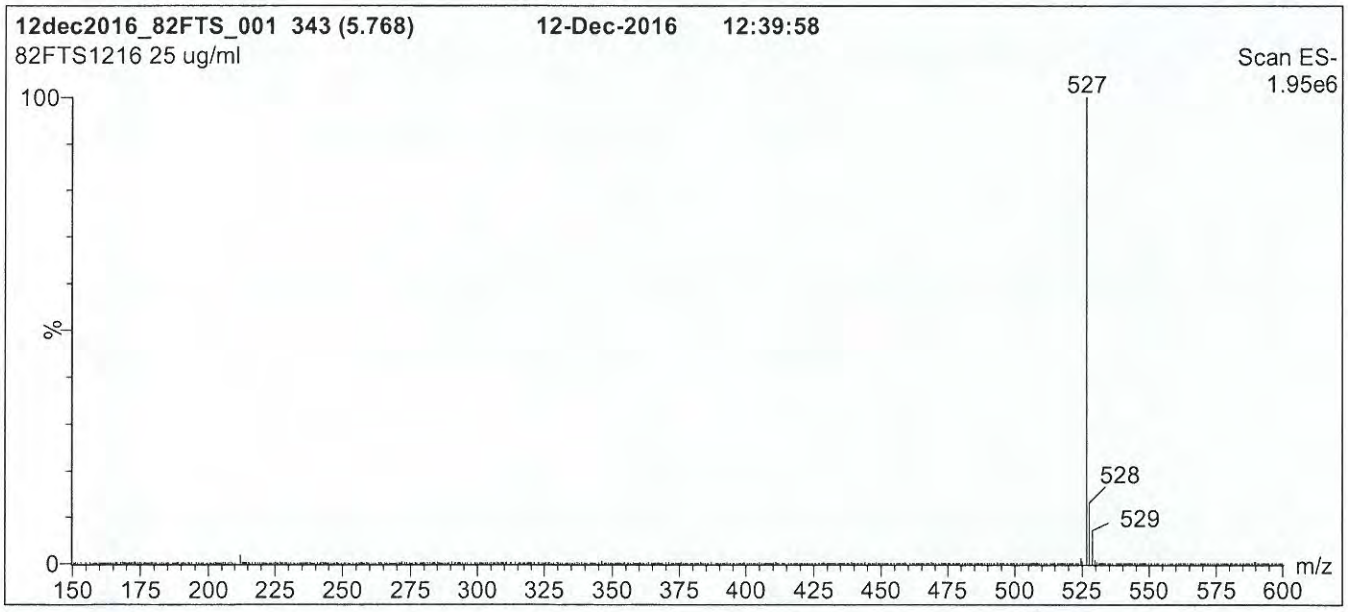
17L2022

Figure 1: **8:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

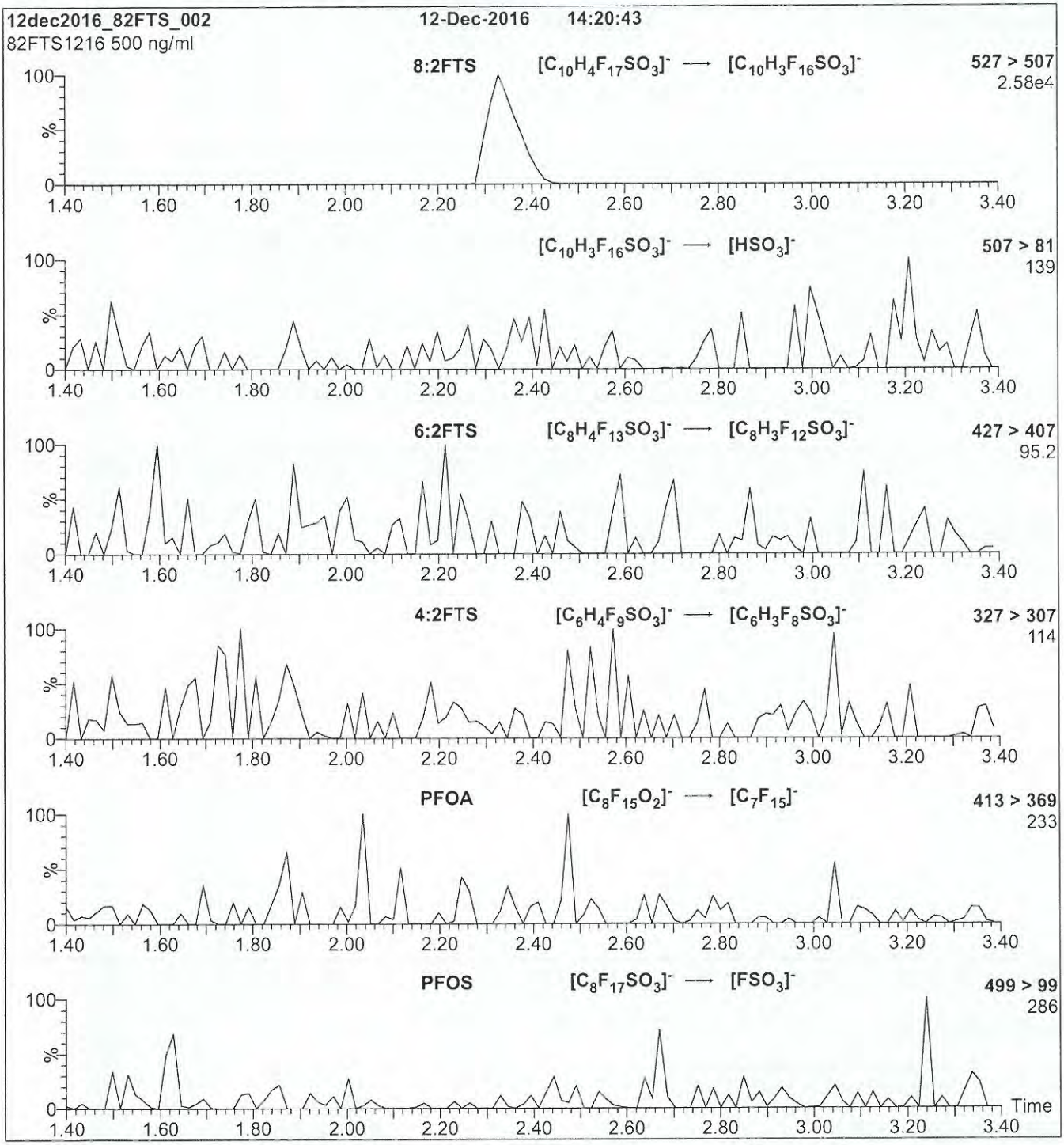
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2022

Figure 2: **8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 30

17L2023

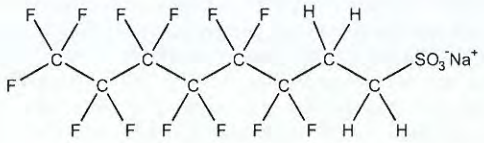
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0417

COMPOUND: Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$C_8H_4F_{13}SO_3Na$		**MOLECULAR WEIGHT:**	450.15
CONCENTRATION:	50.0 ± 2.5 µg/ml	(Na salt)	**SOLVENT(S):**	Methanol
	47.4 ± 2.4 µg/ml	(6:2FTS anion)		
CHEMICAL PURITY:	>98%			
LAST TESTED: (mm/dd/yyyy)	04/20/2017			
EXPIRY DATE: (mm/dd/yyyy)	04/20/2022			
RECOMMENDED STORAGE:	Refrigerate ampoule			

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/24/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2023

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CALA

ANAB ACCREDITED

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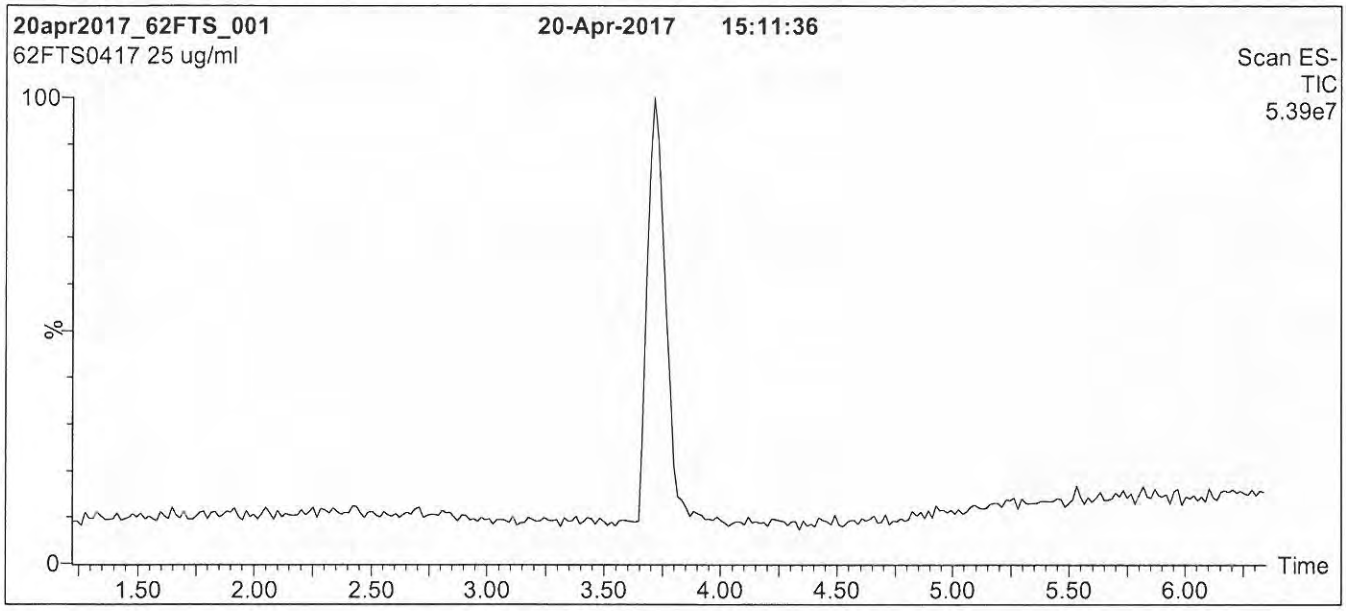
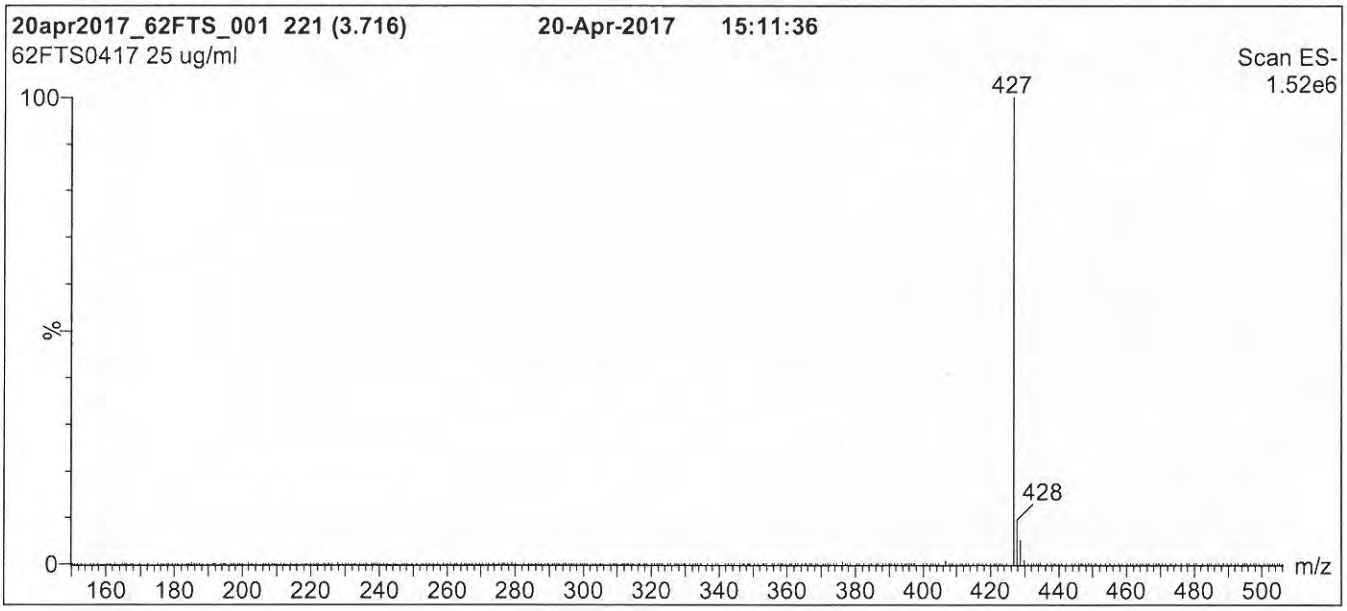
17L 2023

Figure 1: **6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





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1.7 µm, 2.1 x 100 mm

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Start: 50% (80:20 MeOH:ACN) / 50% H_2O
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Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

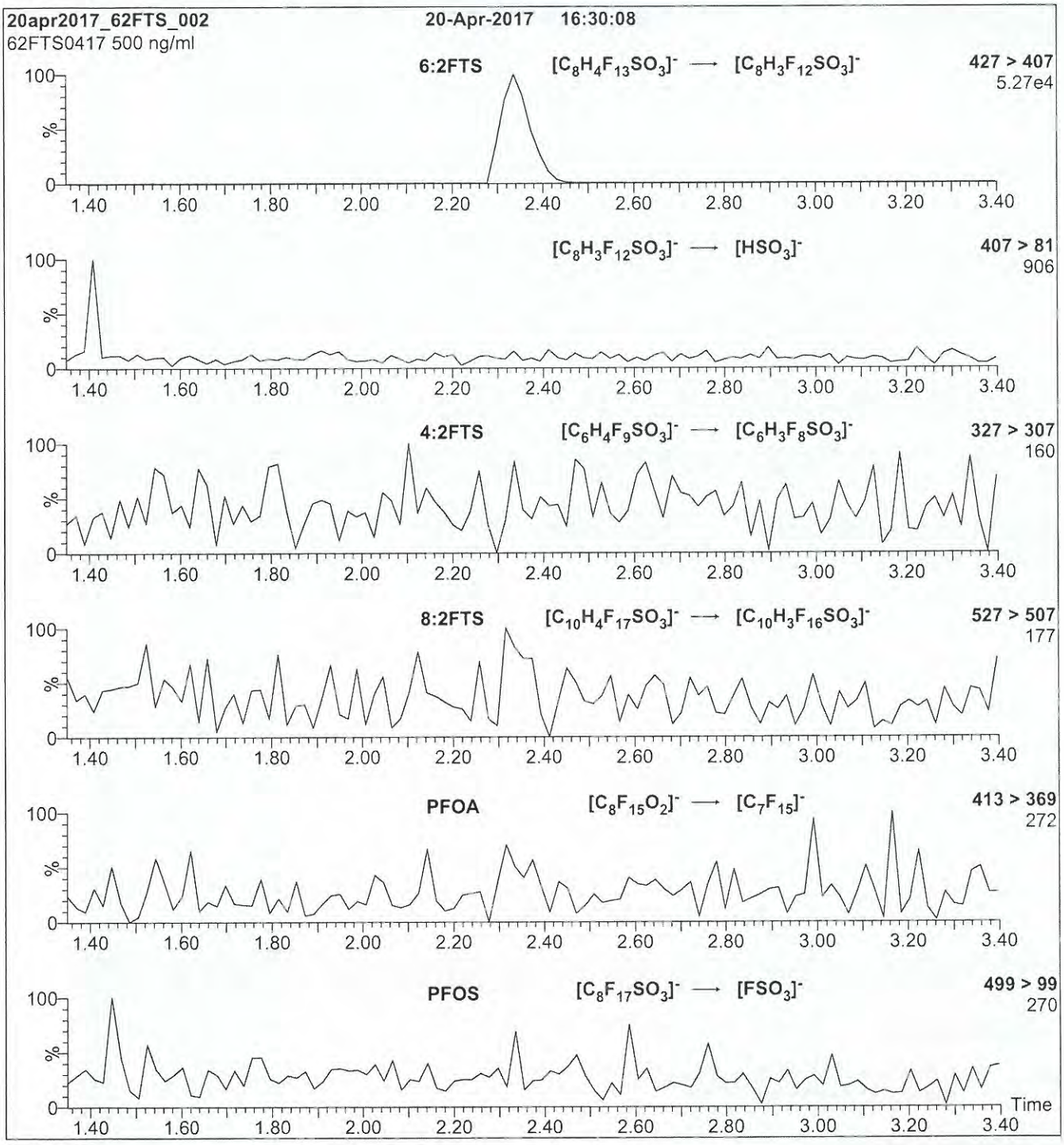
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2023

Figure 2: **6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

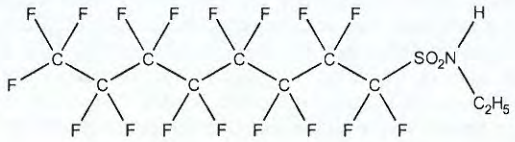
Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 25

17L 2031

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-EtFOSA-M	**LOT NUMBER:**	NEtFOSA0717M
COMPOUND:	N-ethylperfluoro-1-octanesulfonamide		
STRUCTURE:		**CAS #:**	4151-50-2



MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2031

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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ANAB ACCREDITED

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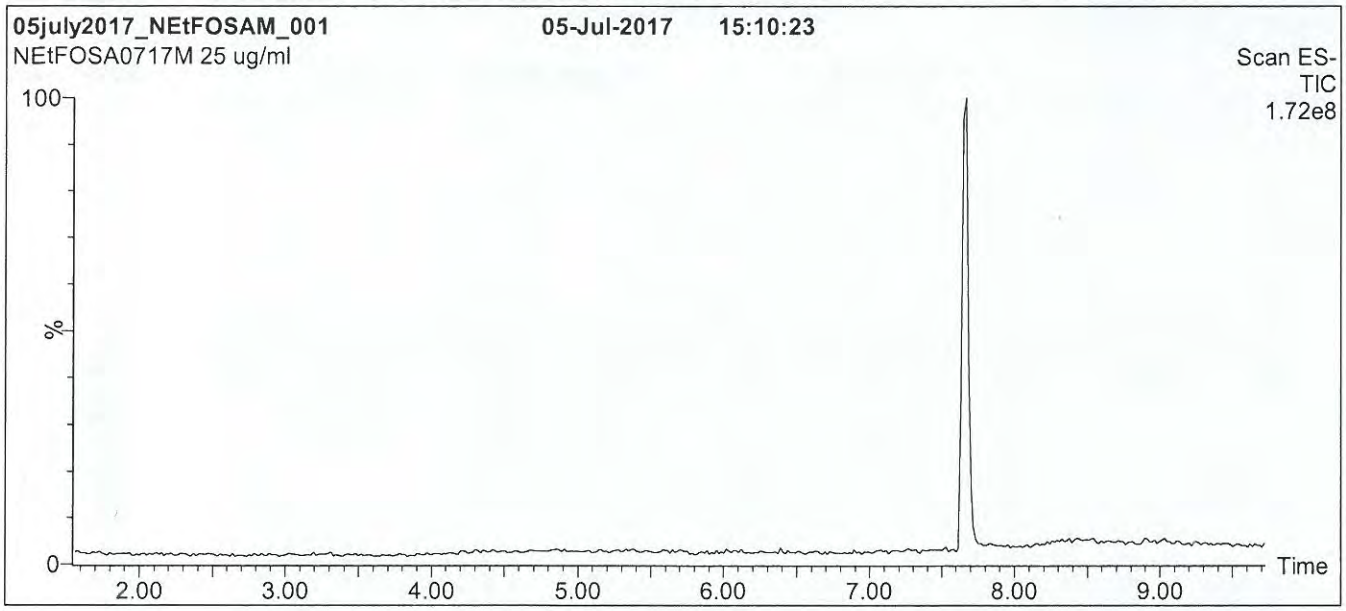
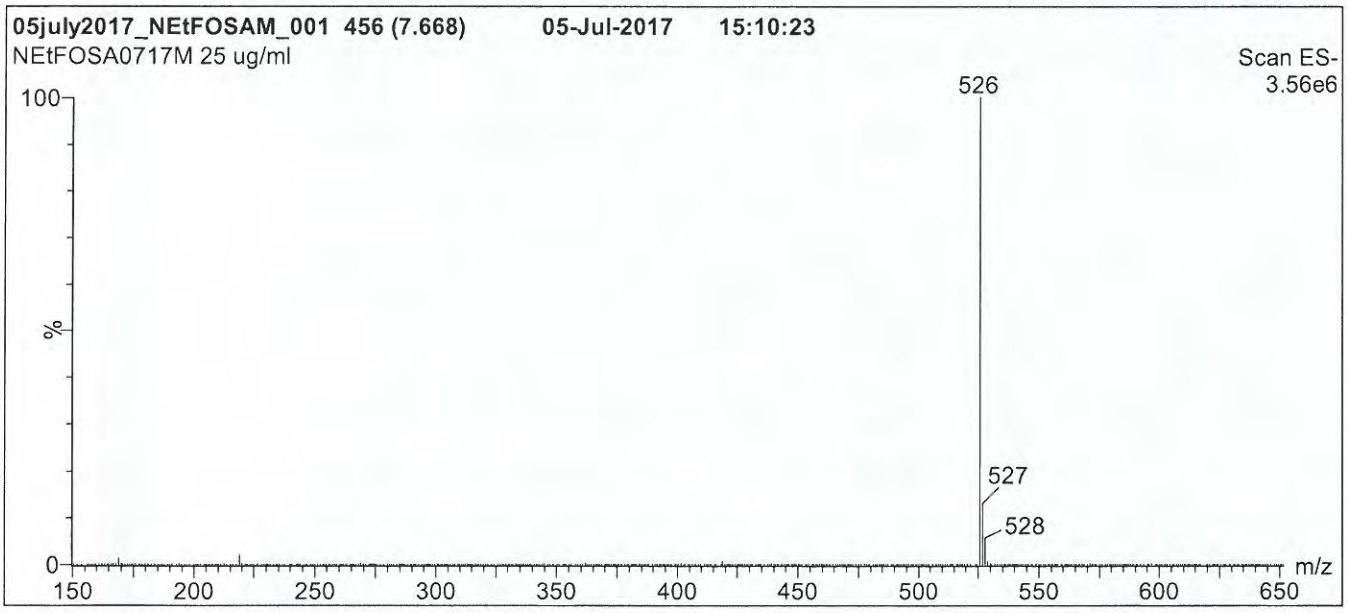
17L2031

Figure 1: **N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

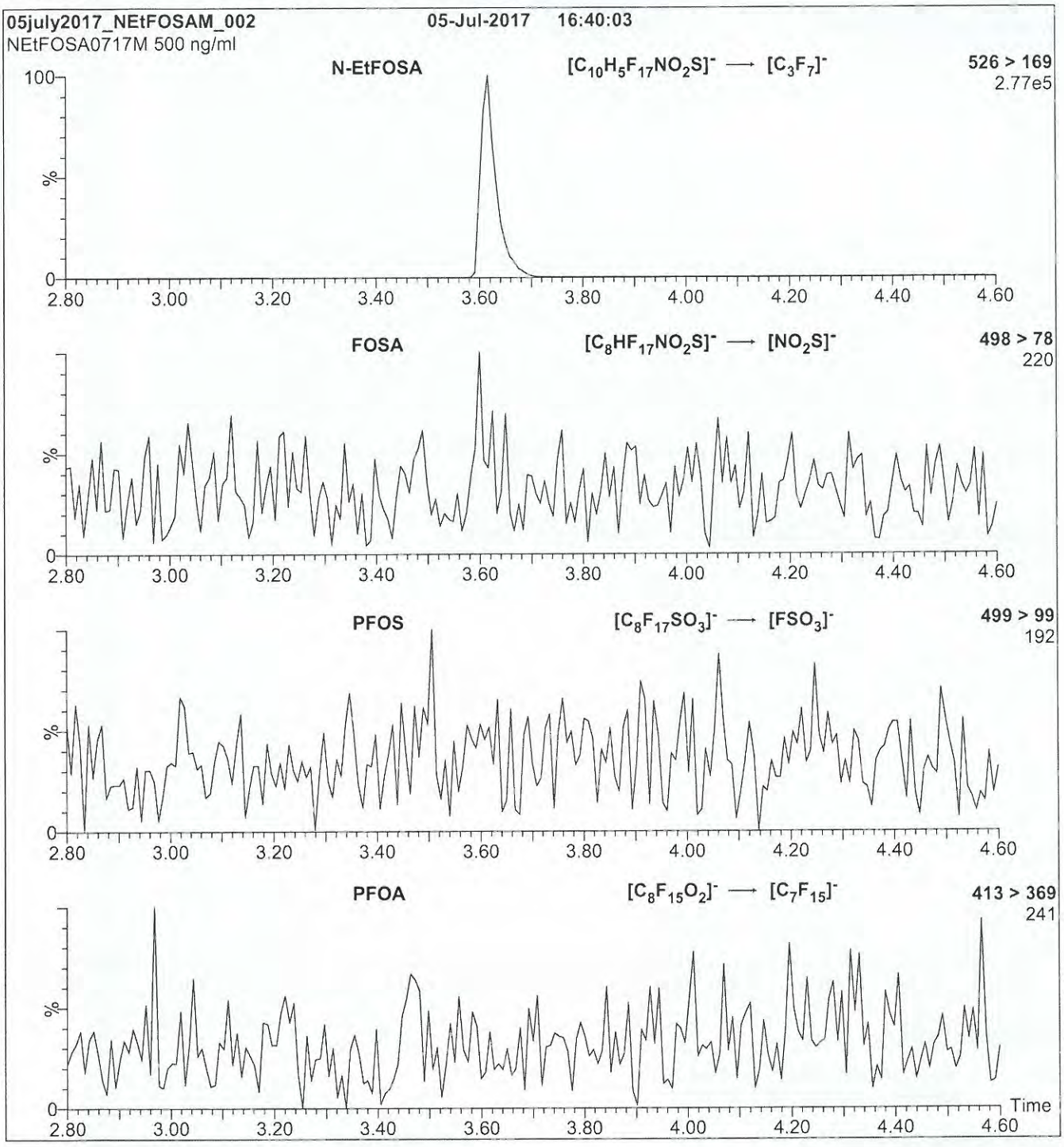
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2031

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

17L2032

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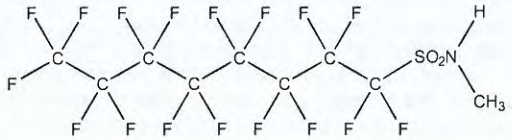
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0717M
COMPOUND:	N-methylperfluoro-1-octanesulfonamide		
STRUCTURE:		**CAS #:**	31506-32-8



MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

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Certified By: _____ **Date:** 07/10/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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17L2032

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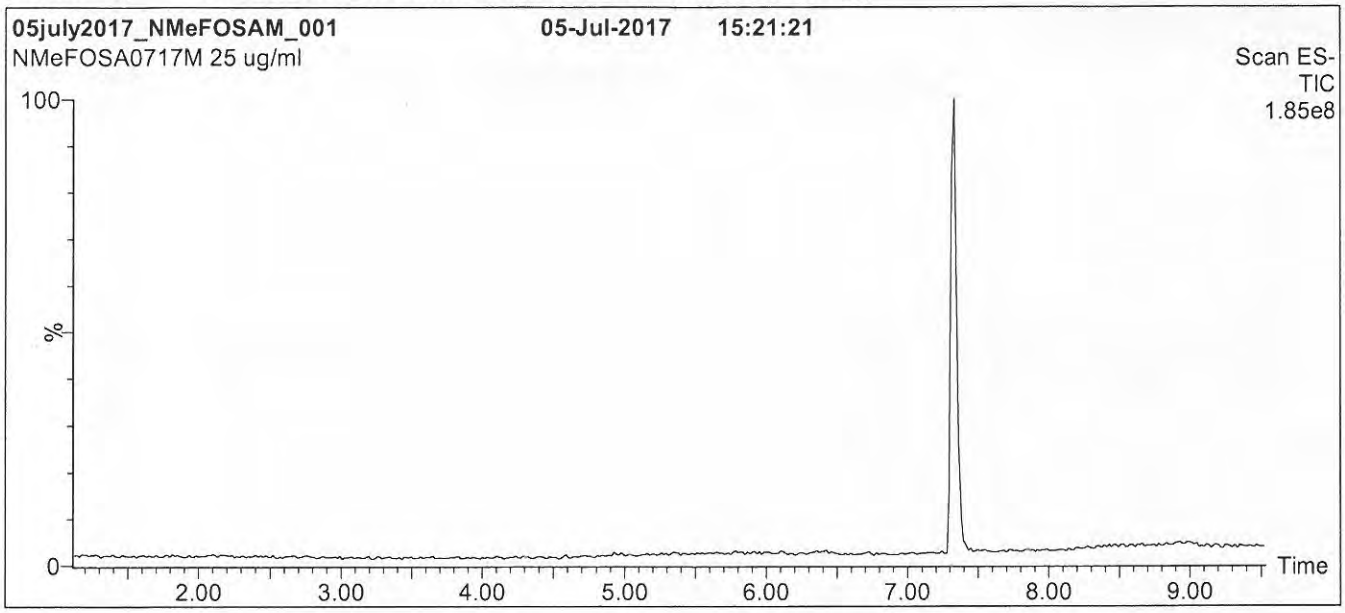
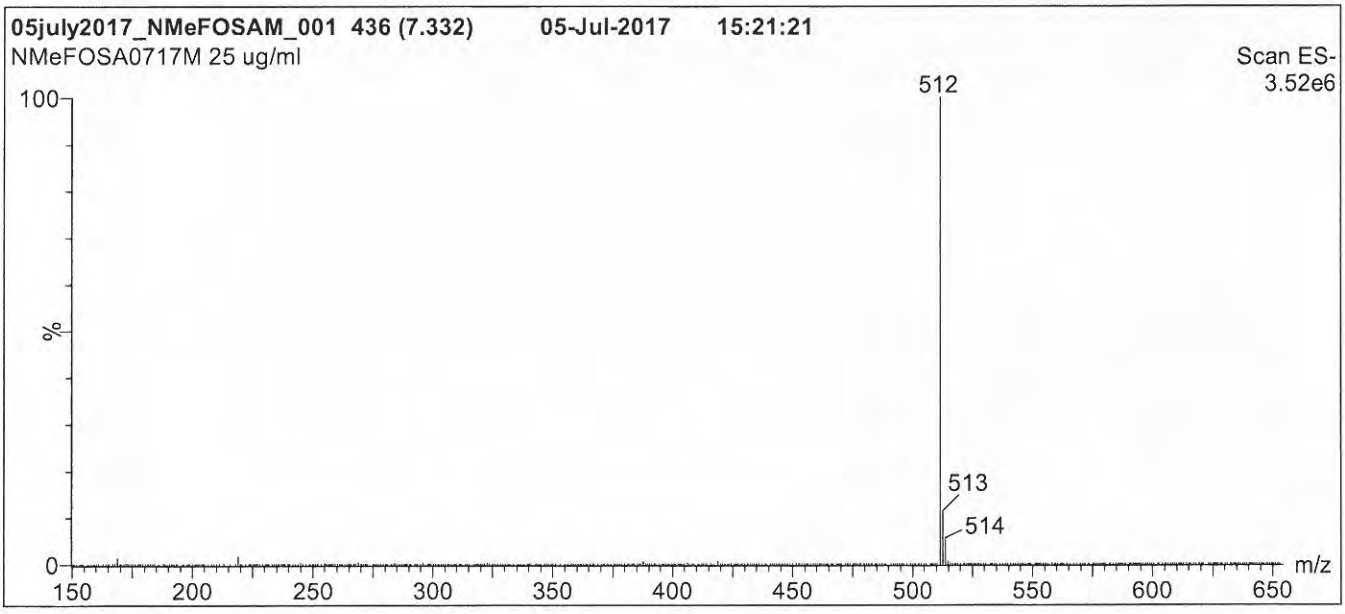
17L2032

Figure 1: **N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

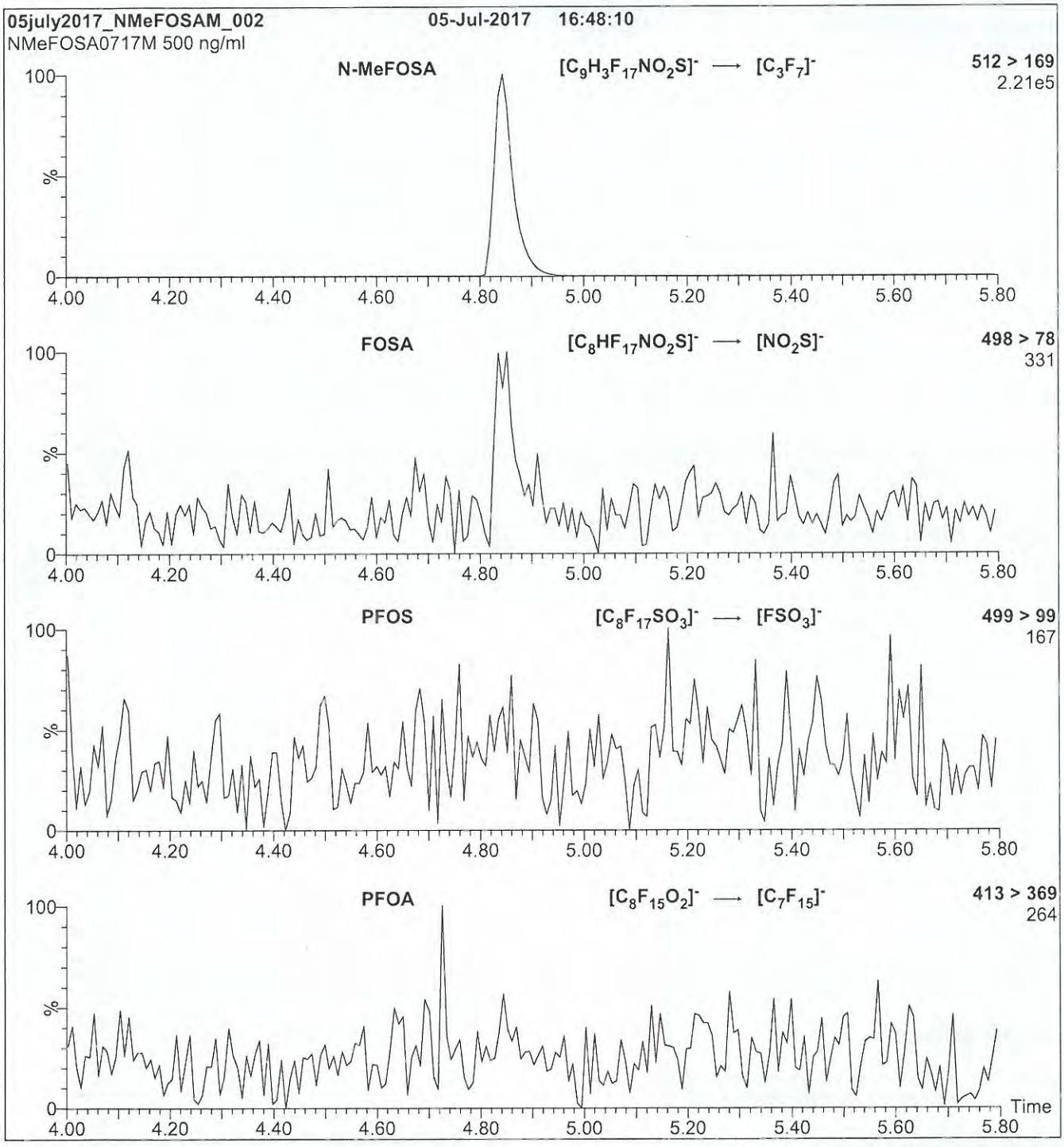
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L 2032

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 30

17L2033

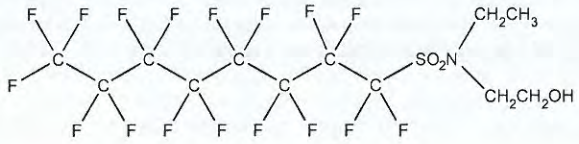
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0417M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	04/24/2017 (HRGC/LRMS)		
	04/21/2017 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	04/24/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/26/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

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17L2033

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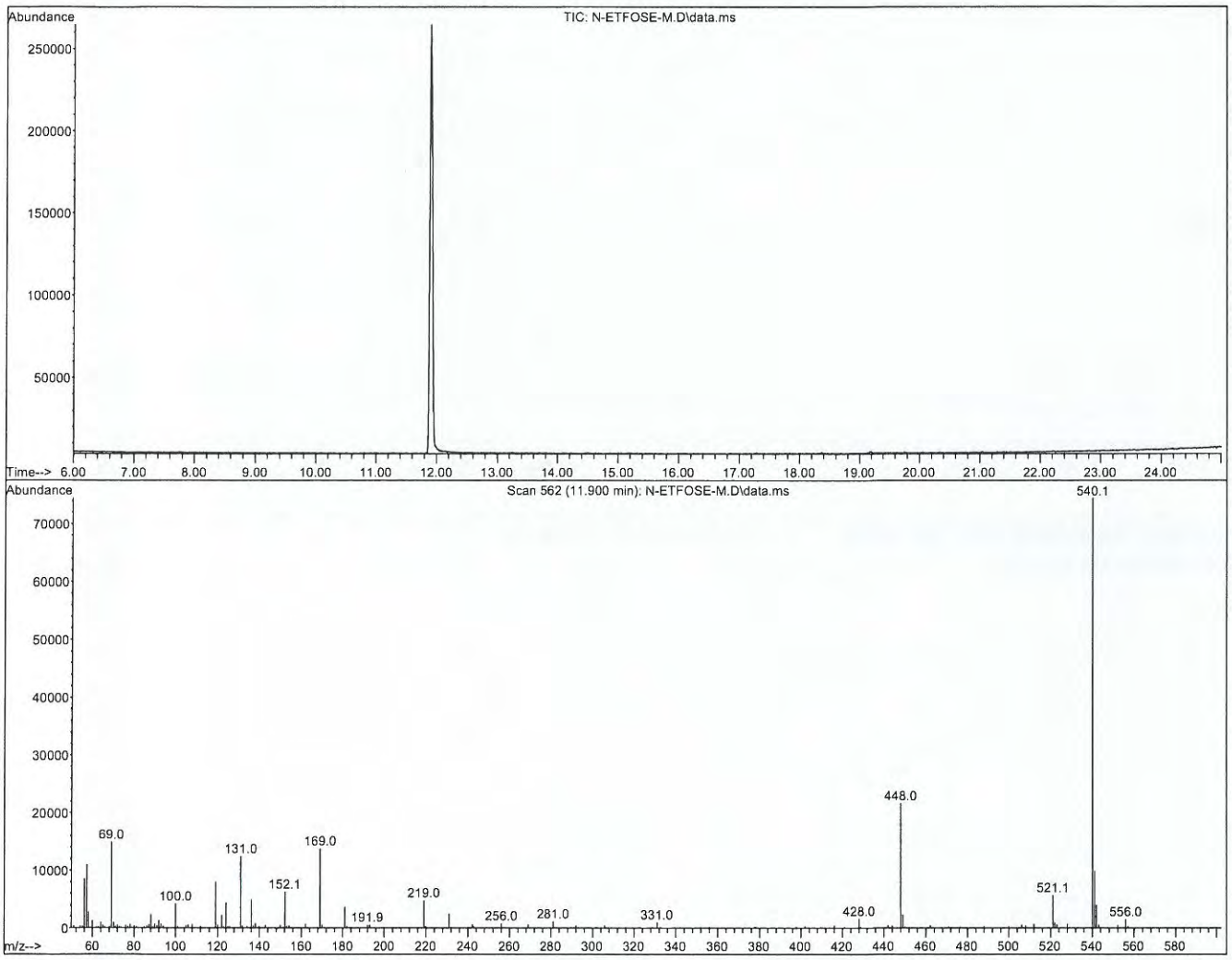
17L2033

Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

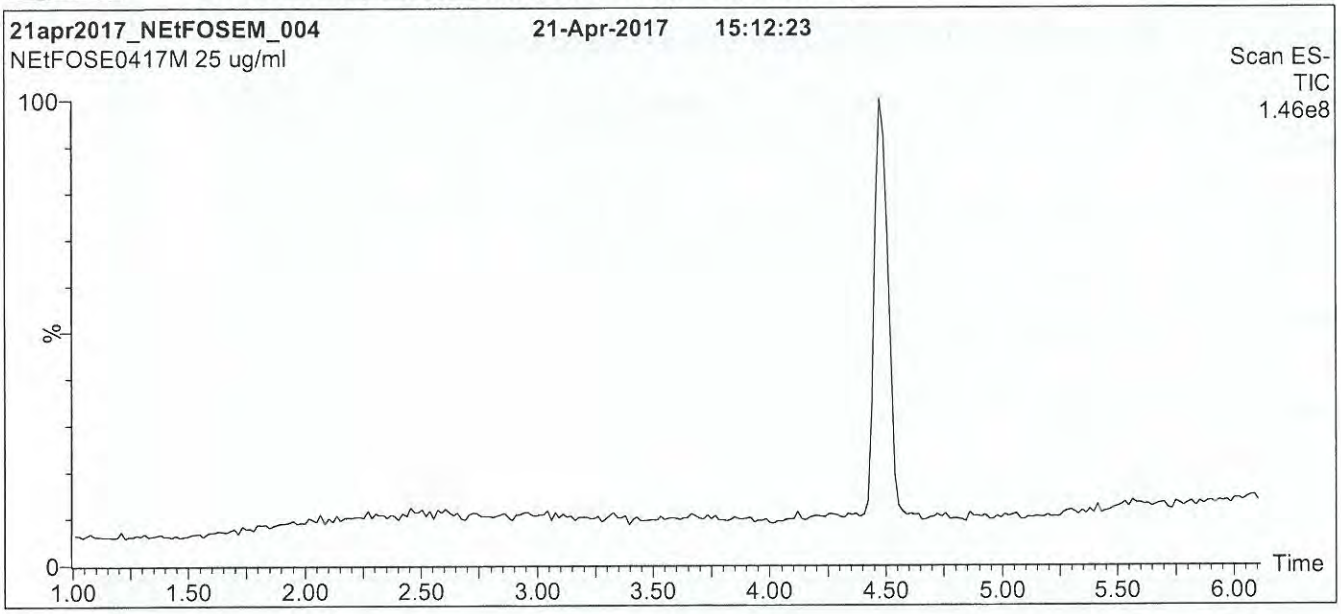
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

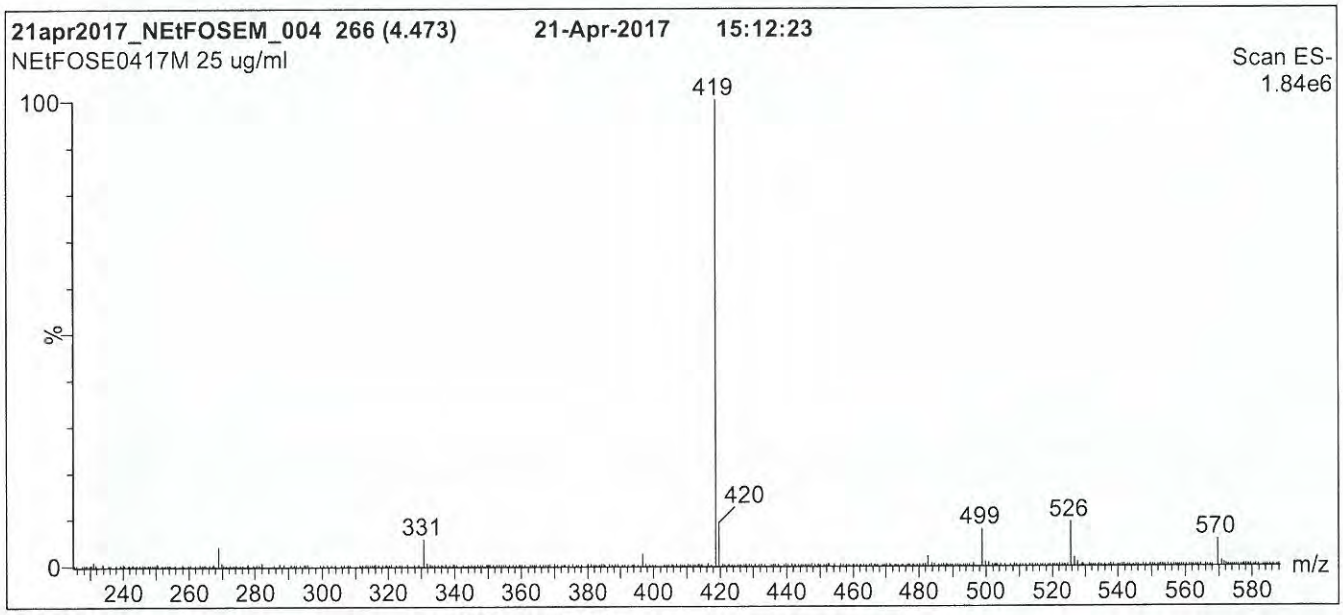
Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Injector:	250 °C (Splitless Injection)
Oven:	100 °C (5 min)
	10 °C/min to 325 °C
	325 °C (20 min)
Ionization:	EI+
Detector:	250 °C
	Full Scan (50-1000 amu)

17L2033

Figure 2: **N-EtFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H_2O
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

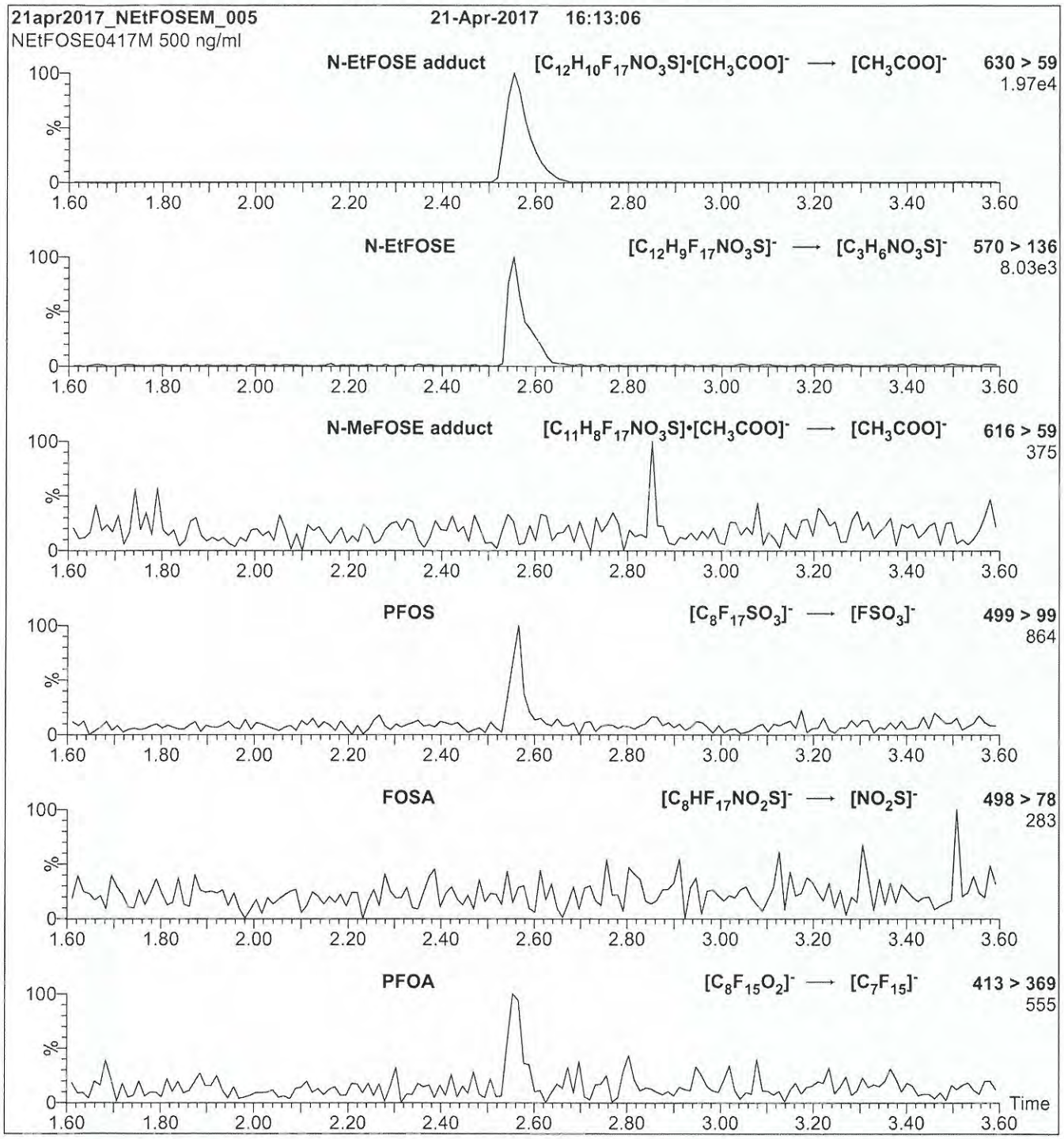
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2033

Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSE-M)

Mobile phase: Isocratic 80% MeOH / 20% H_2O

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 33

17L2034

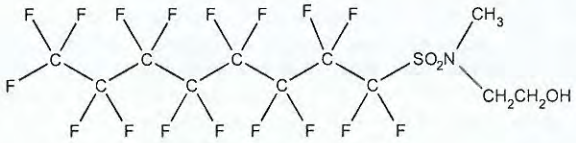
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0417M

COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	04/24/2017 (HRGC/LRMS) 04/21/2017 (LC/MS)		
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FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/05/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2034

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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CALA

ANAB ACCREDITED

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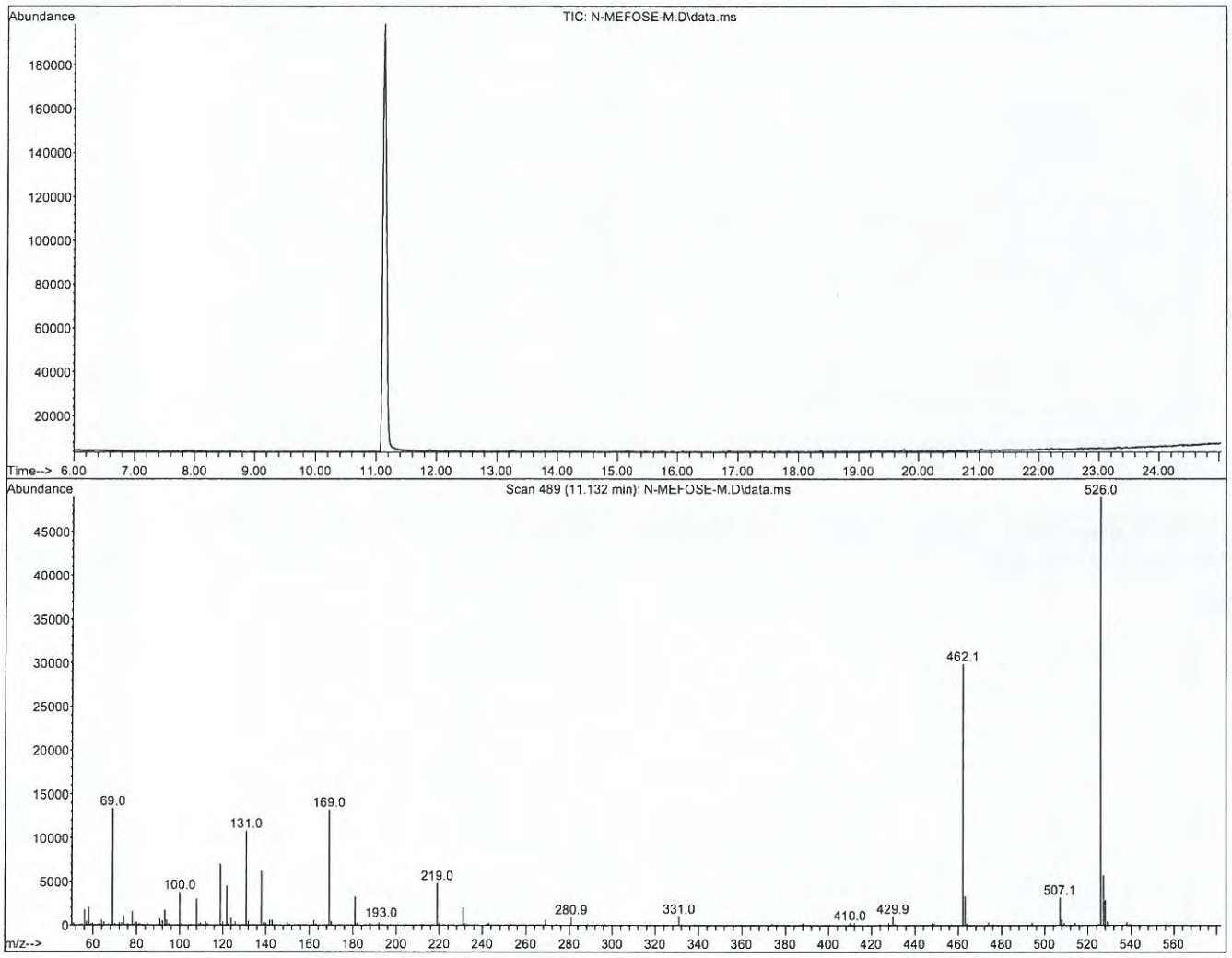
17L2034

Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

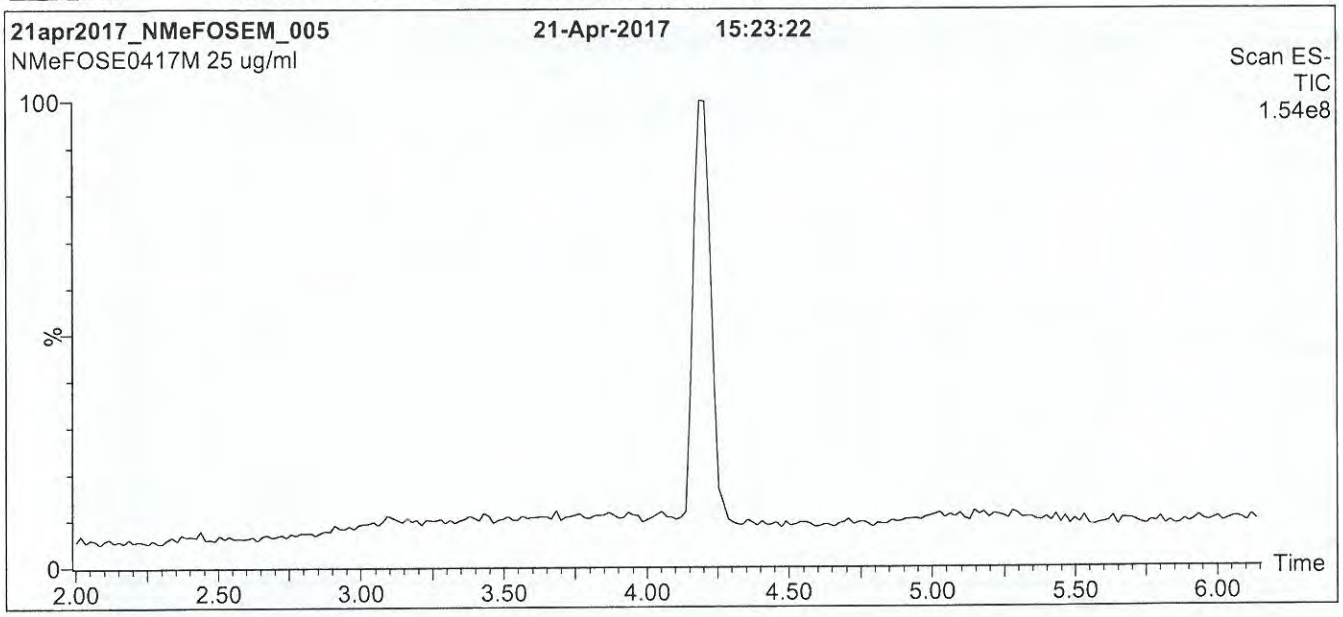
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

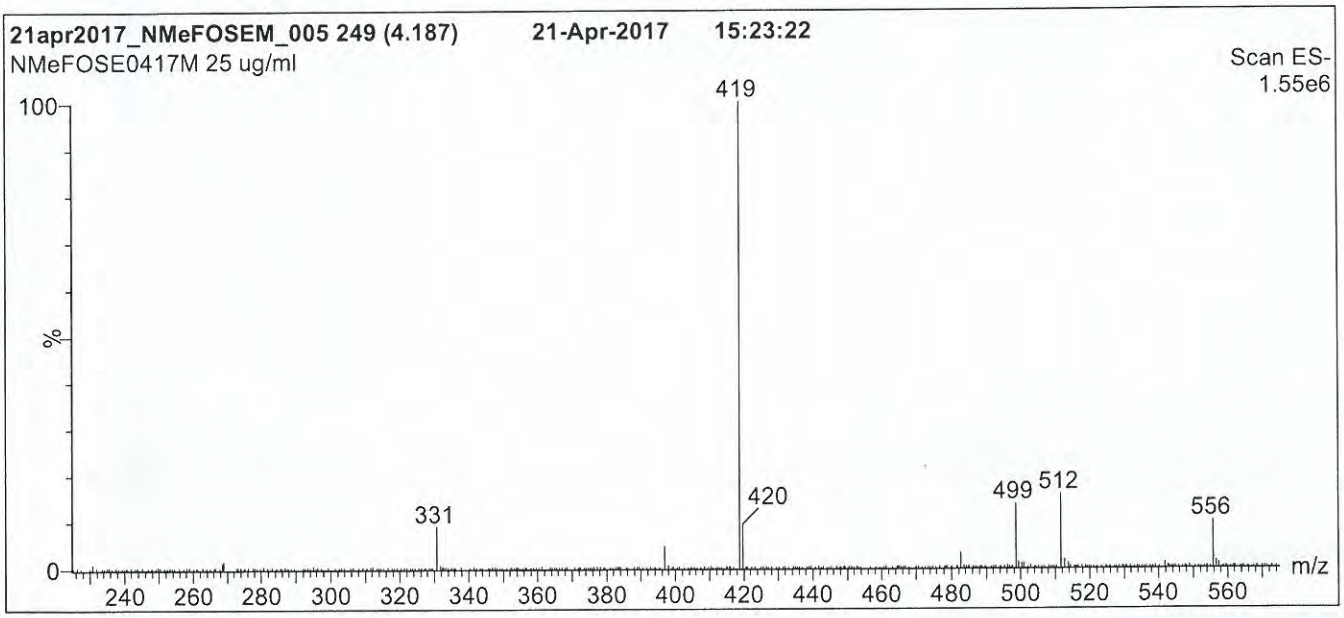
Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Injector:	250 °C (Splitless Injection)
Oven:	100 °C (5 min)
	10 °C/min to 325 °C
	325 °C (20 min)
Ionization:	EI+
Detector:	250 °C
	Full Scan (50-1000 amu)

17L2034

Figure 2: **N-MeFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H_2O
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

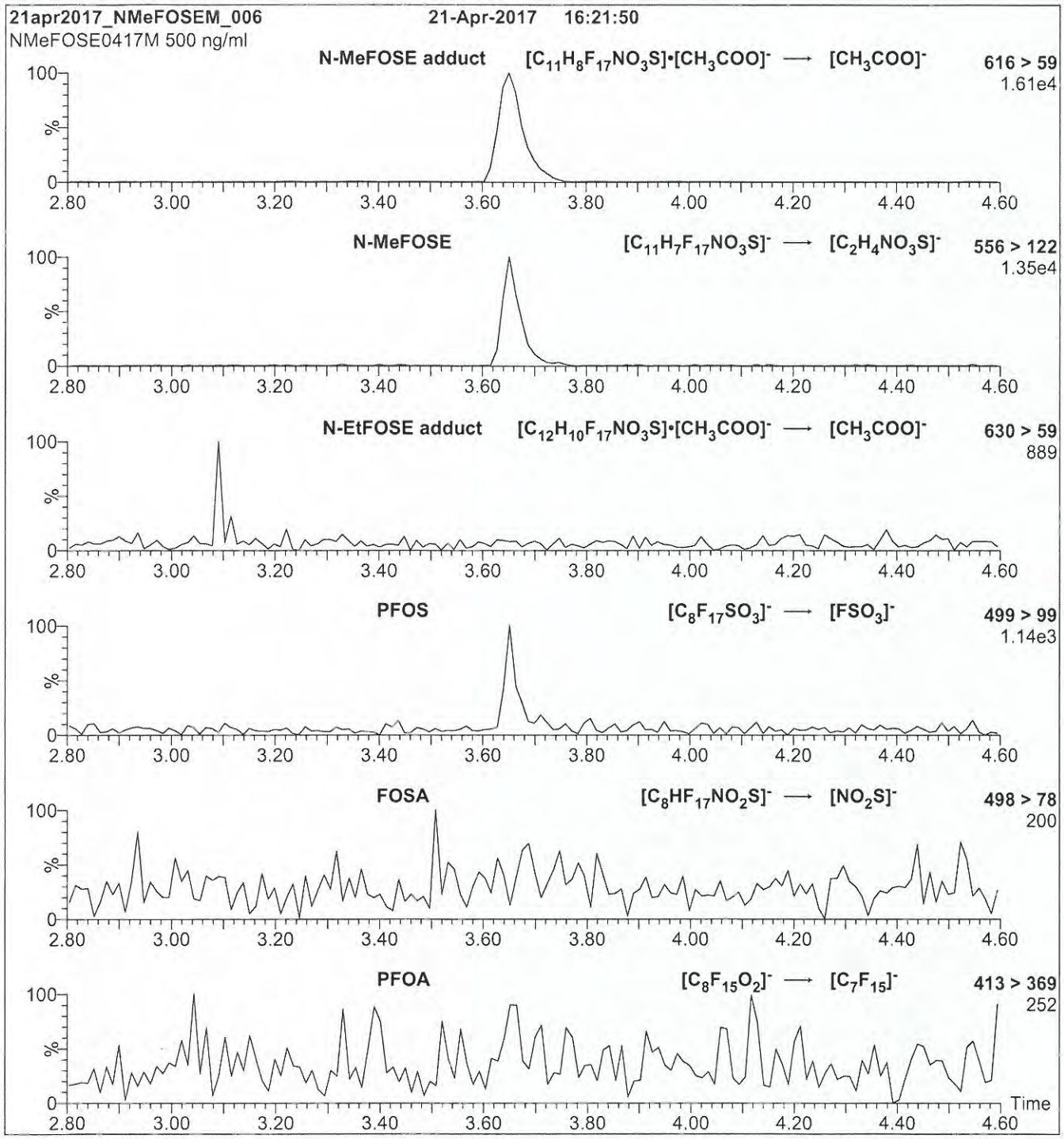
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2034

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSE-M)

Mobile phase: Isocratic 80% MeOH / 20% H_2O

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 35

Analytical Standard Record

Vista Analytical Laboratory

17L2332

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
17L2301	13C2-FOUEA	23-Dec-17	** Vendor **	14-Nov-19	1
17L2302	13C3-PFHxS	23-Dec-17	** Vendor **	05-Jul-22	1.06
17L2303	13C4-PFOS	23-Dec-17	** Vendor **	17-Oct-22	1.05
17L2304	13C7-PFUdA	23-Dec-17	** Vendor **	13-Jul-22	1
17L2305	13C5-PFHxA	23-Dec-17	** Vendor **	17-Oct-22	1
17L2306	13C6-PFDA	23-Dec-17	** Vendor **	17-Oct-22	1
17L2307	13C8-PFOA	23-Dec-17	** Vendor **	05-Jul-22	1.02
17L2308	13C4-PFBA	23-Dec-17	** Vendor **	12-Apr-22	1
17L2309	13C9-PFNA	23-Dec-17	** Vendor **	23-May-22	1

Description:	PFC-RS	Expires:	23-Dec-19
Standard Type:	Reagent	Prepared:	23-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Dec-17 12:26 by INJ

Analyte	CAS Number	Concentration	Units
13C9-PFNA		1.25	ug/mL
13C8-PFOA		1.25	ug/mL
13C7-PFUnA		1.25	ug/mL
13C6-PFDA		1.25	ug/mL
13C5-PFHxA		1.25	ug/mL
13C4-PFOS		1.25	ug/mL
13C4-PFBA		1.25	ug/mL
13C3-PFHxS		1.25	ug/mL
13C2-FOUEA		1.25	ug/mL

17L2301

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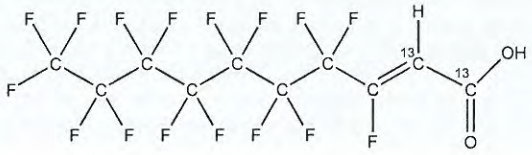
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid

LOT NUMBER: MFOUEA1117

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_2F_{16}O_2$	**MOLECULAR WEIGHT:**	460.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/14/2019		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

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Certified By: _____ **Date:** 11/15/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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17L2301

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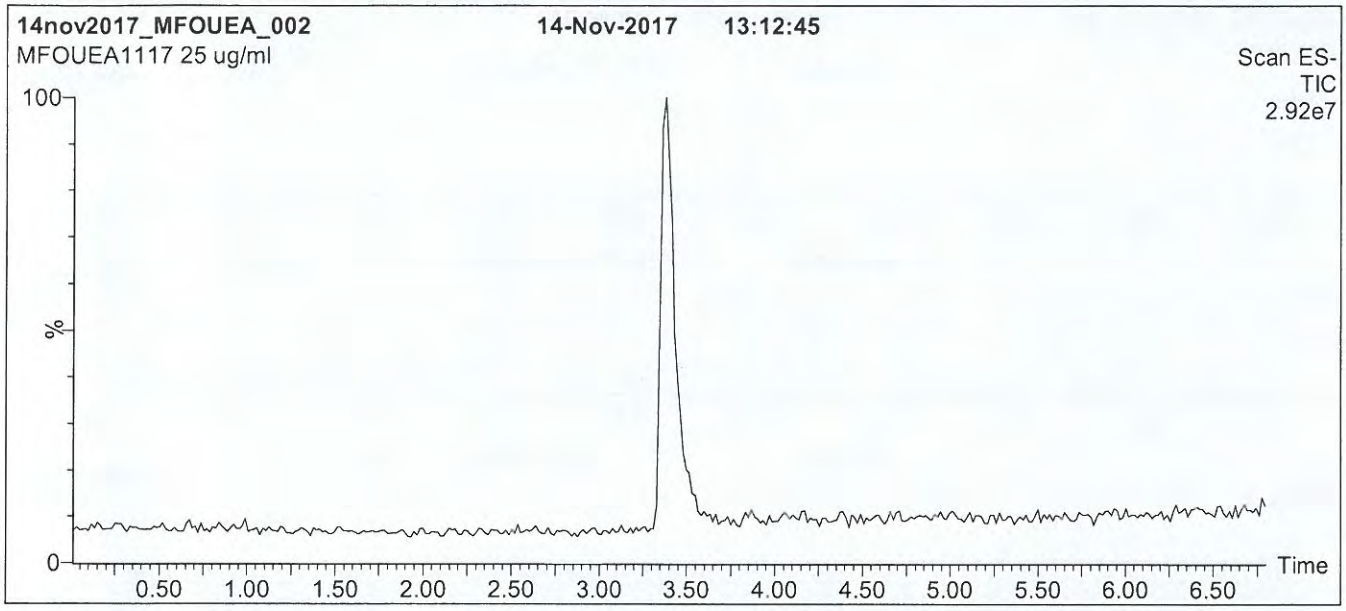
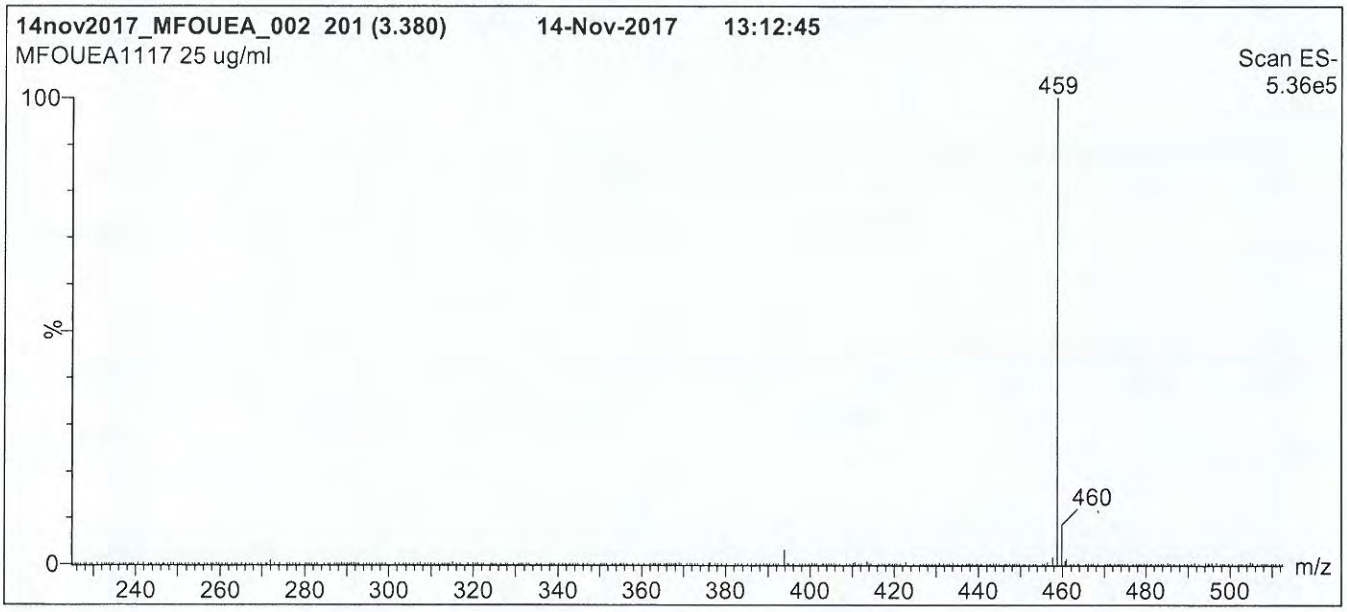
17L2301

Figure 1: **MFOUEA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold
for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

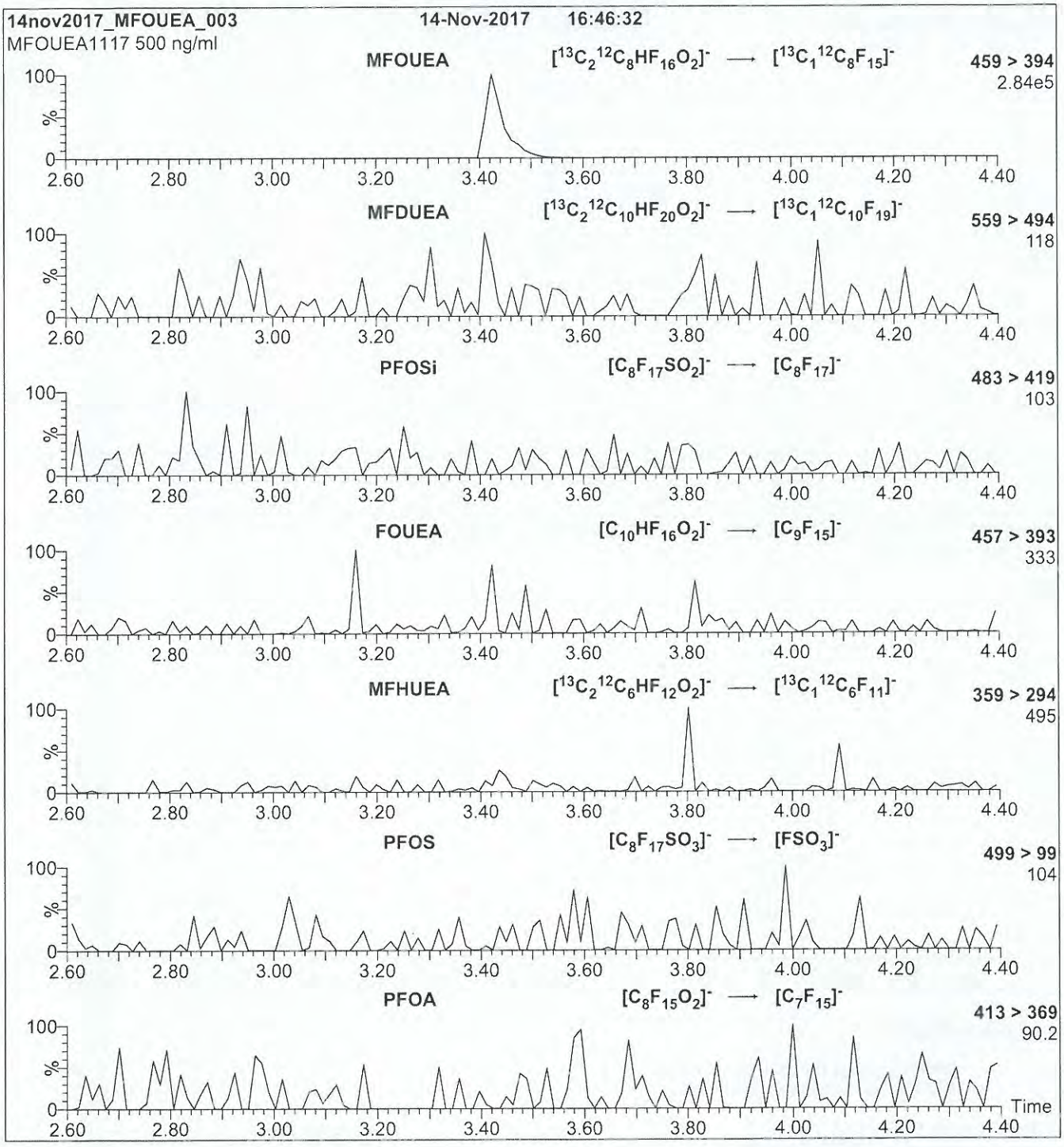
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 14.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2301

Figure 2: **MFOUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MFOUEA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 21

17L2302

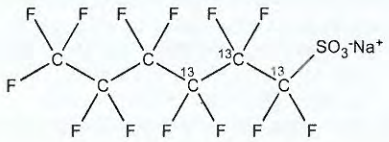
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS0717

COMPOUND: Sodium perfluoro-1-[1,2,3-$^{13}C_3$]hexanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	425.07
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (M3PFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3\text{-}^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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CALA

ANAB ACCREDITED

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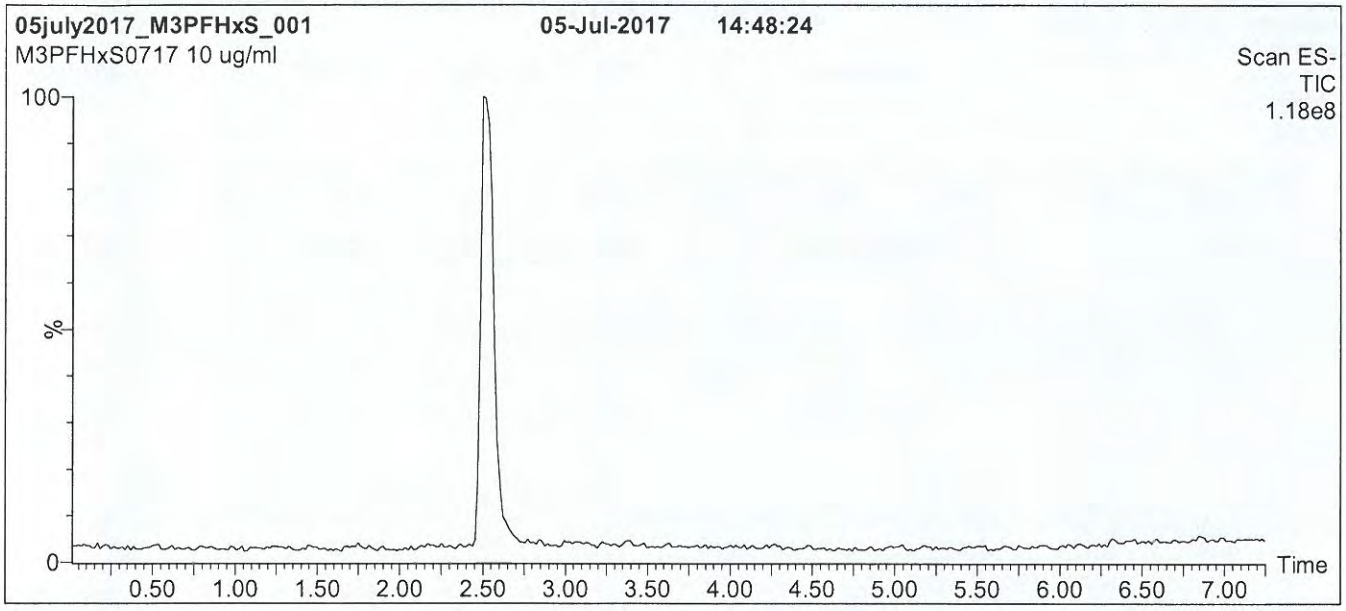
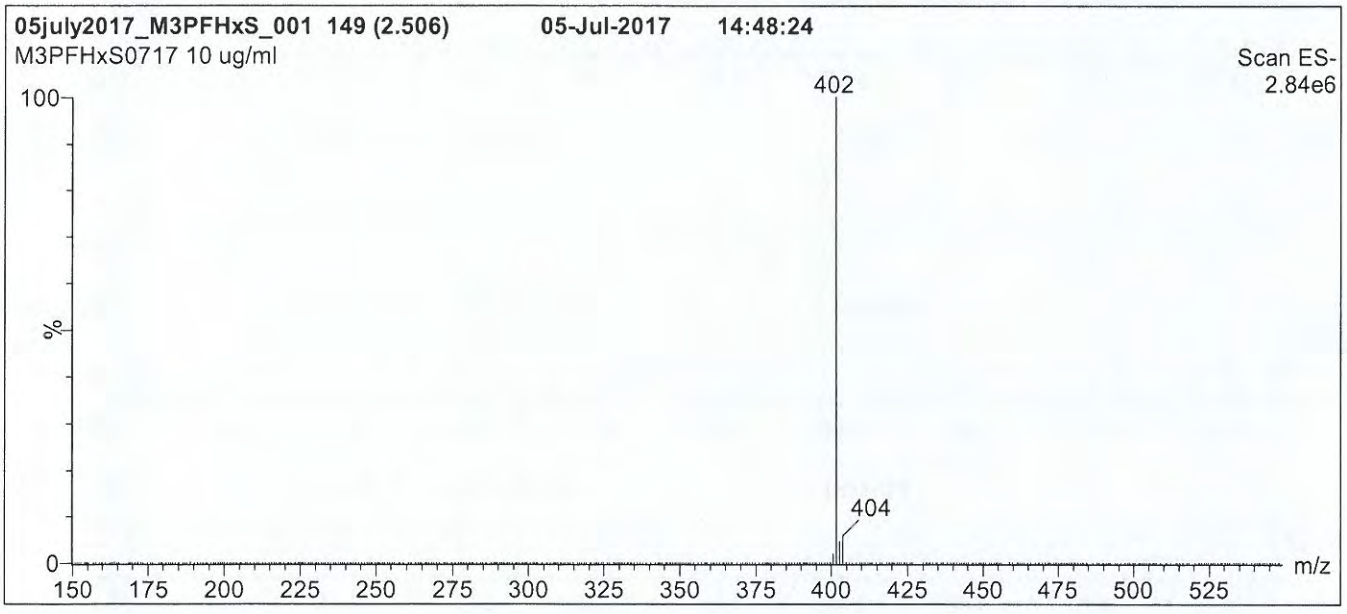
17L2302

Figure 1: **M3PFHxS; LC/MS Data (TIC and Mass Spectrum)**





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MS: **Micromass Quattro *micro* API MS**

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(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

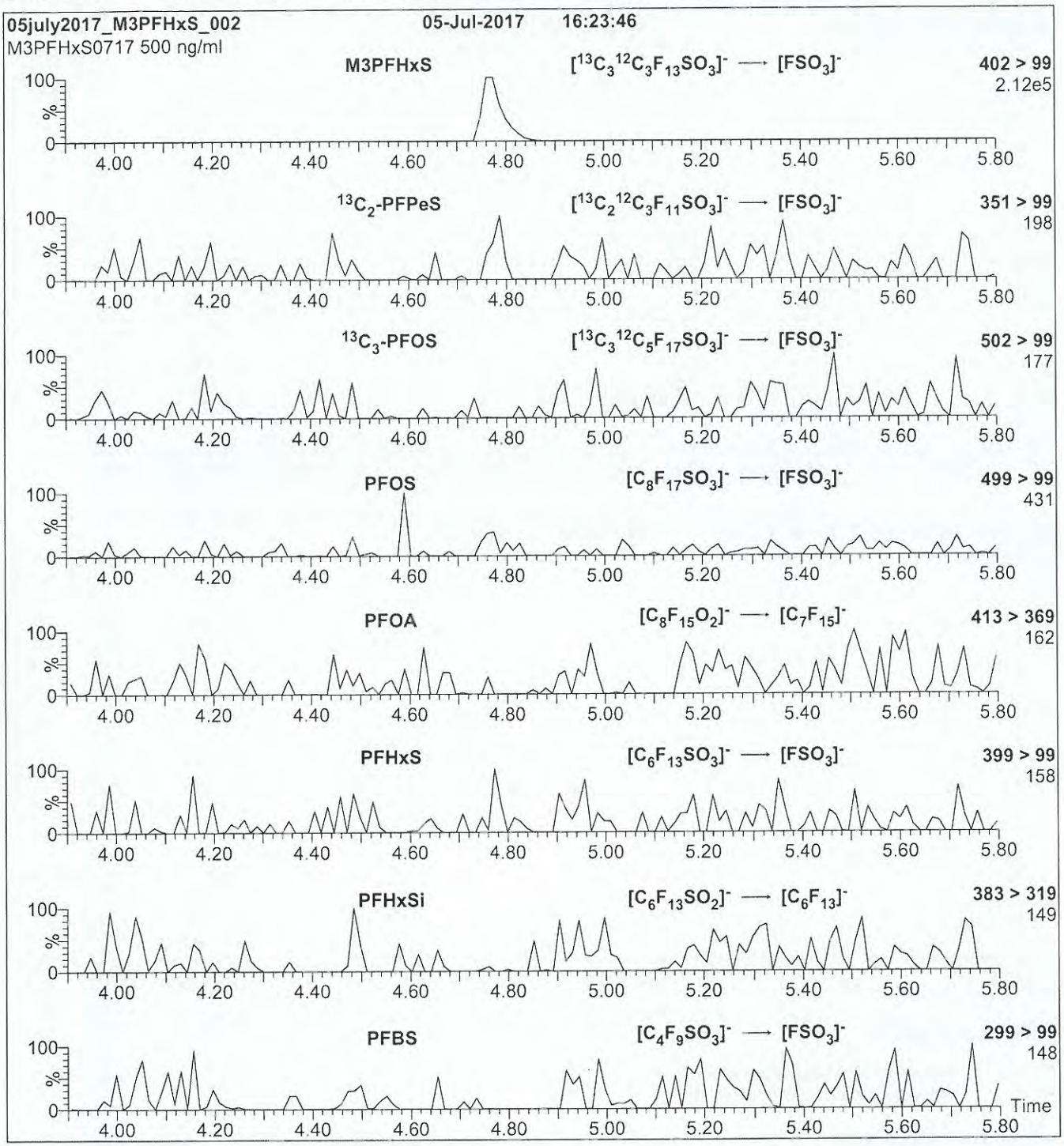
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2302

Figure 2: **M3PFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

17L2303

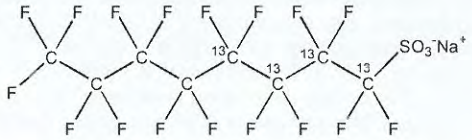
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS1017

COMPOUND: Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	526.08
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4$-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	10/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/17/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.4% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2303

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

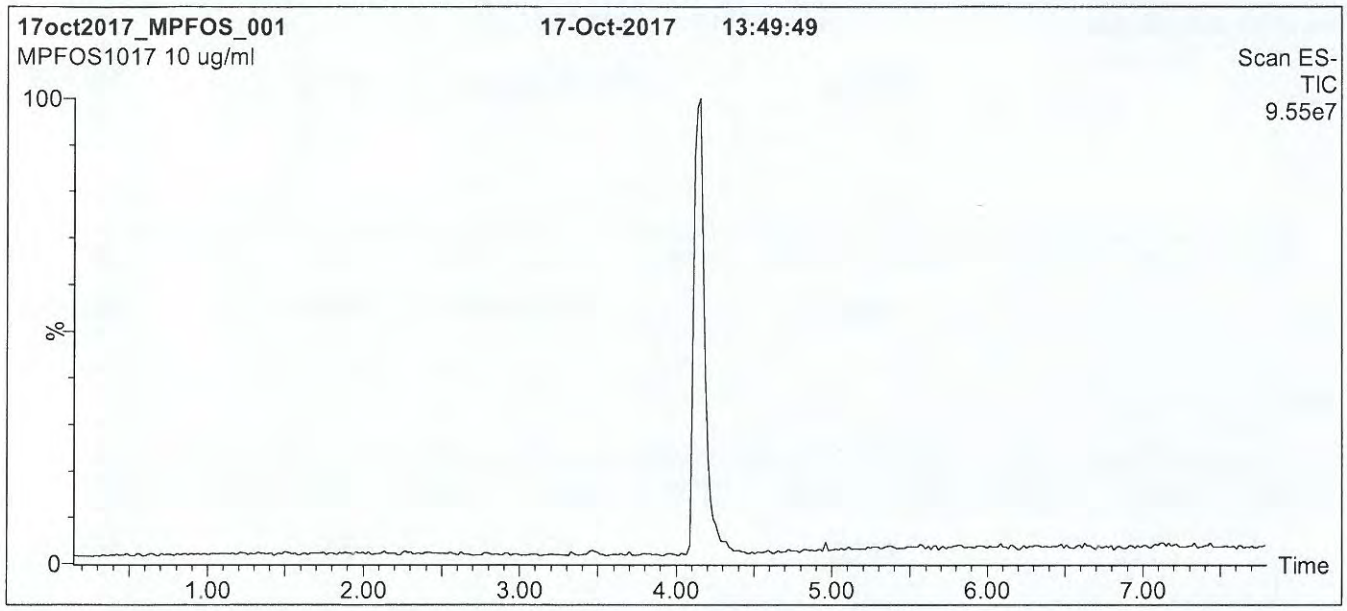
CALA

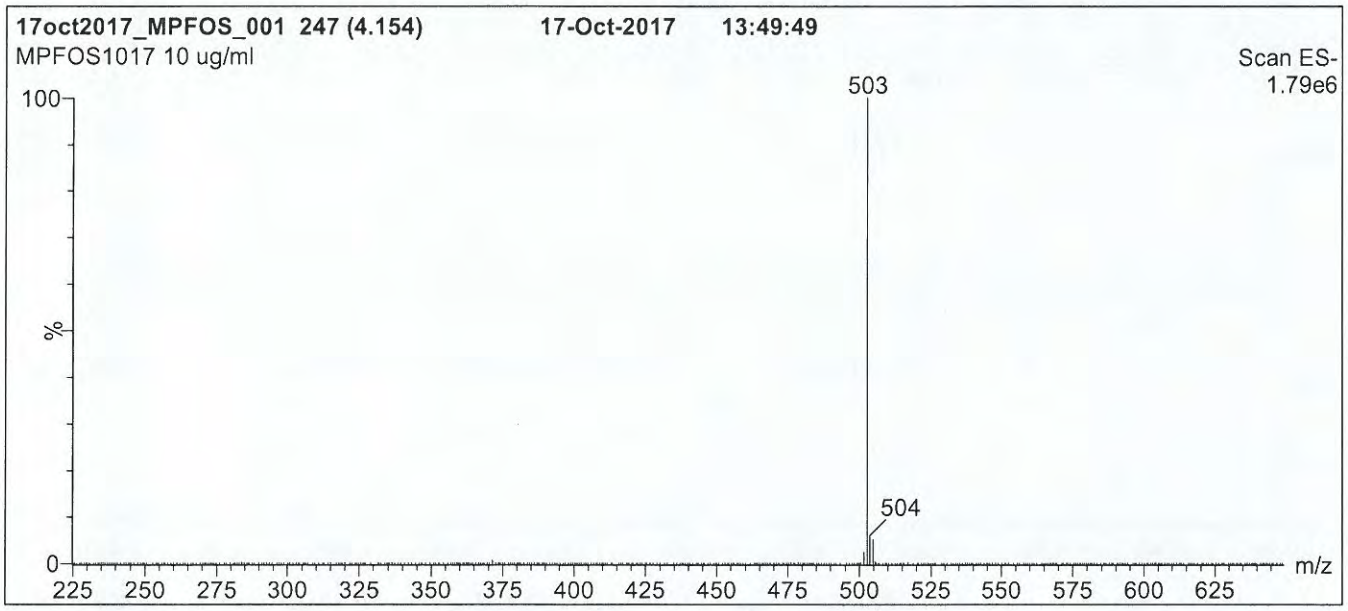
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2303

Figure 1: **MPFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

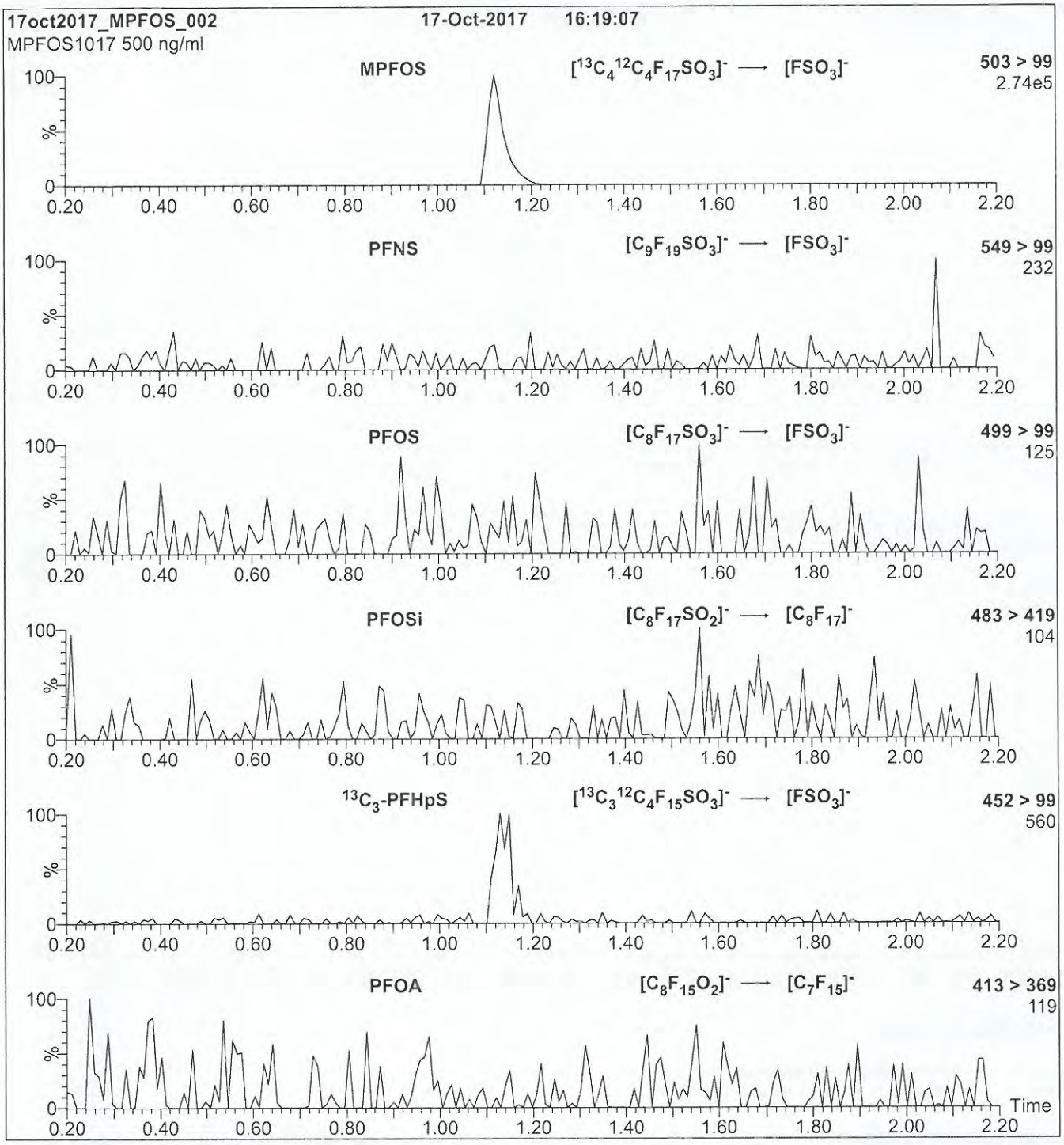
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2303

Figure 2: **MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

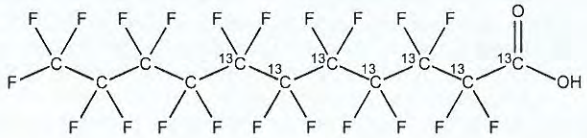
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 40

1712304

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M7PFUdA	**LOT NUMBER:**	M7PFUdA0717
COMPOUND:	Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_7{}^{12}C_4HF_{21}O_2$	**MOLECULAR WEIGHT:**	571.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C
LAST TESTED: (mm/dd/yyyy)	07/13/2017		(1,2,3,4,5,6,7-$^{13}C_7$)
EXPIRY DATE: (mm/dd/yyyy)	07/13/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2304

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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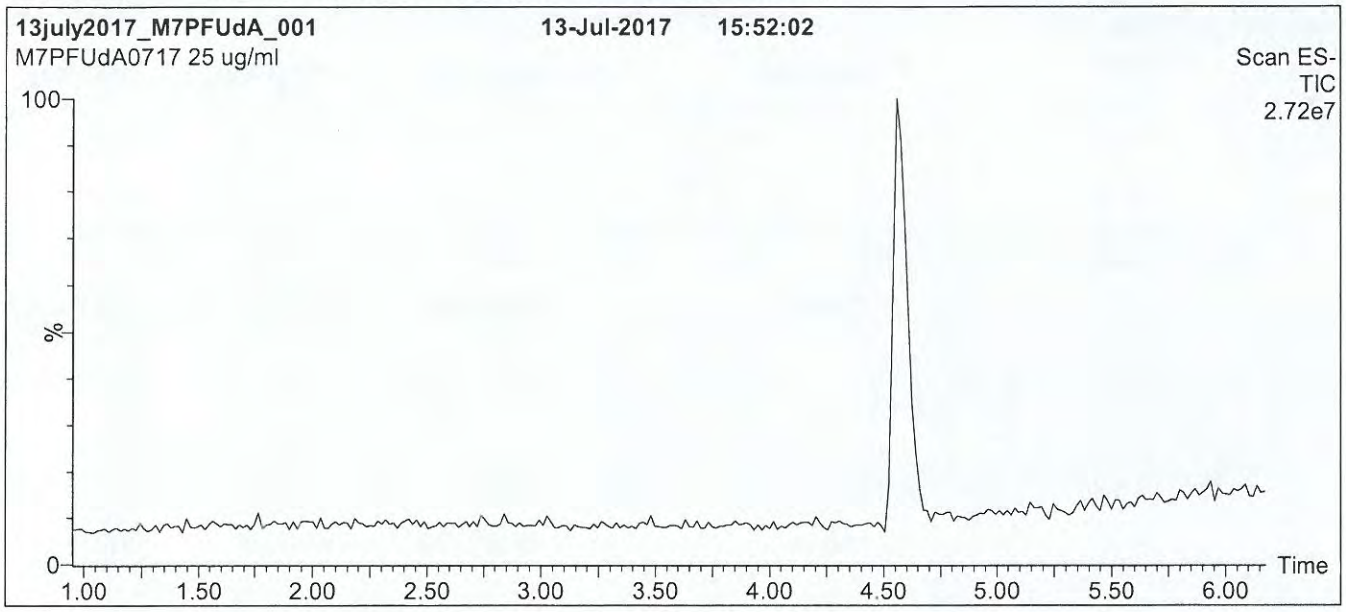
CALA

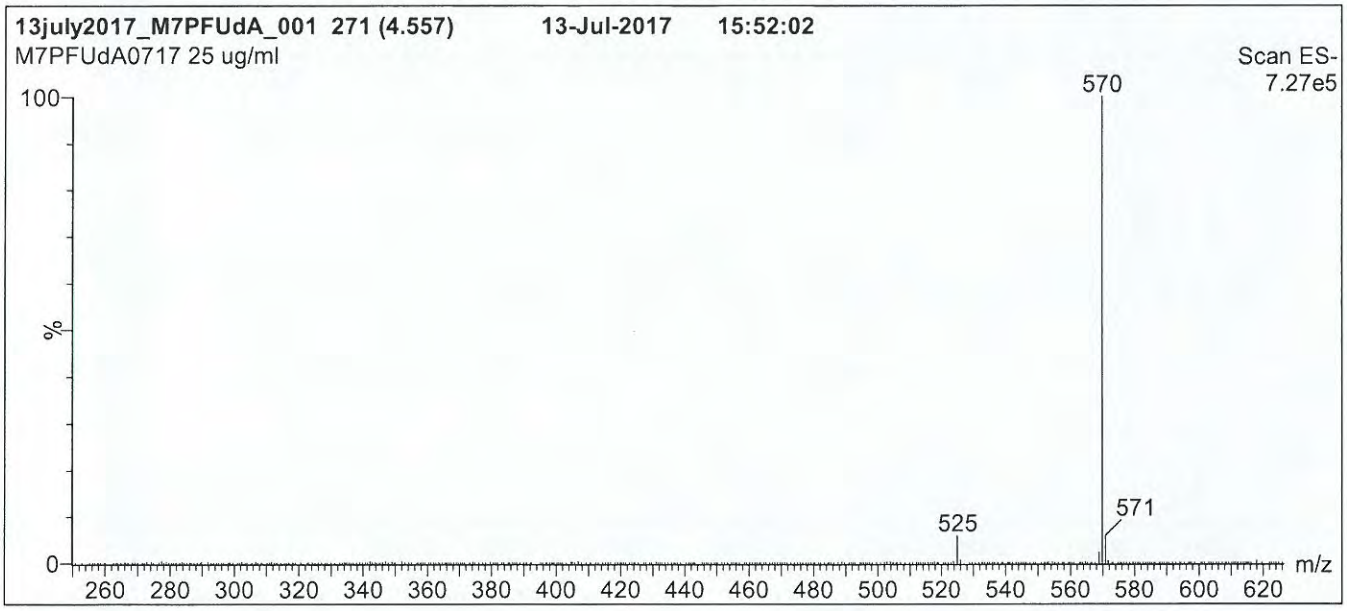
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1712304

Figure 1: **M7PFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

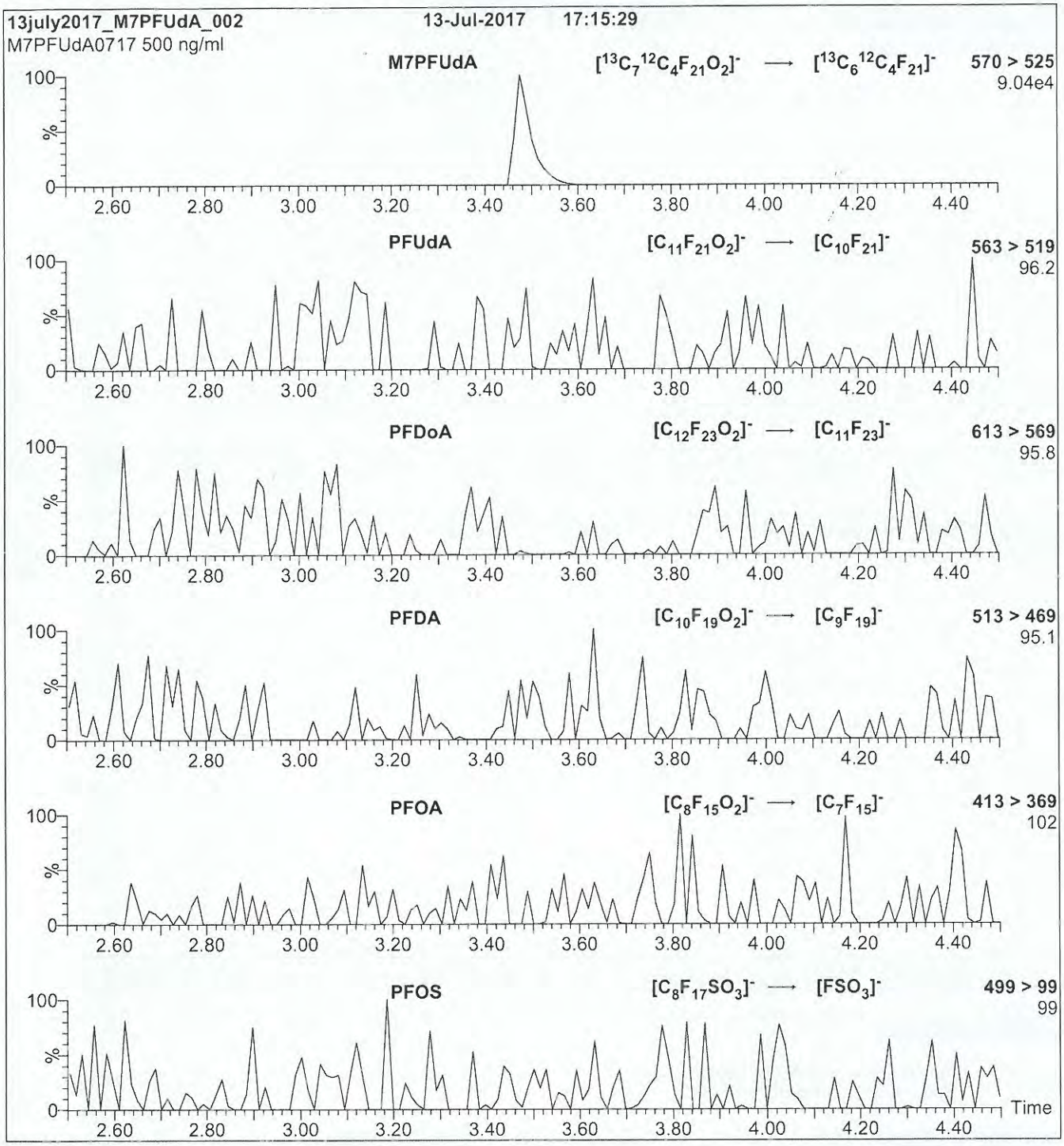
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

17L2304

Figure 2: **M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M7PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 11

17L2305

WELLINGTON LABORATORIES

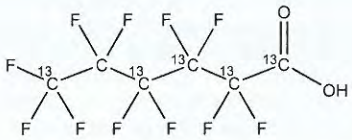
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA
COMPOUND: Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid

LOT NUMBER: M5PFHxA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_1HF_{11}O_2$	**MOLECULAR WEIGHT:**	319.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,6\text{-}^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	10/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/17/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2305

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CALA

ANAB ACCREDITED

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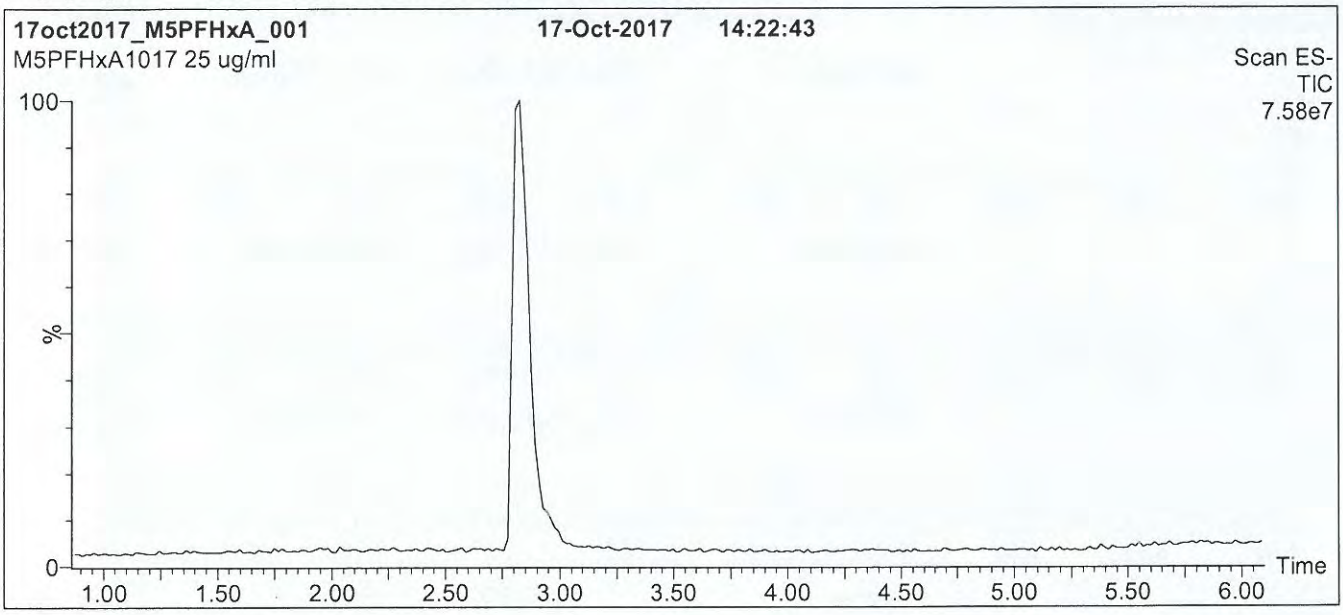
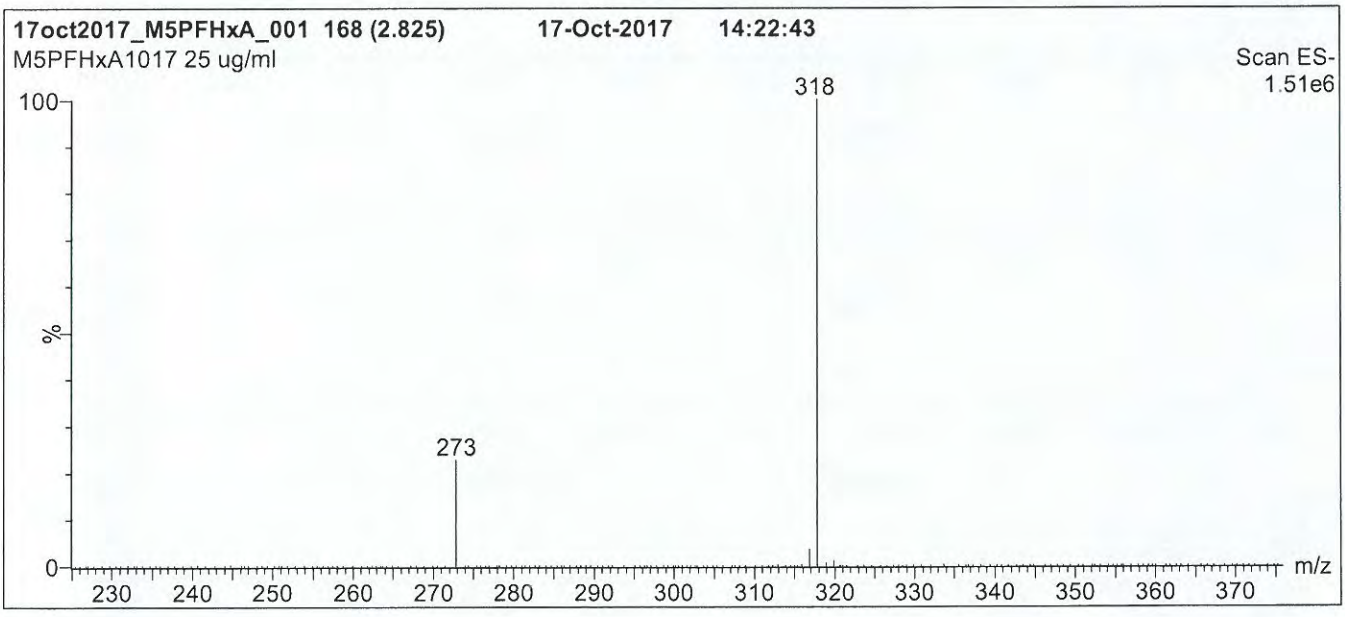
17L2305

Figure 1: **M5PFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

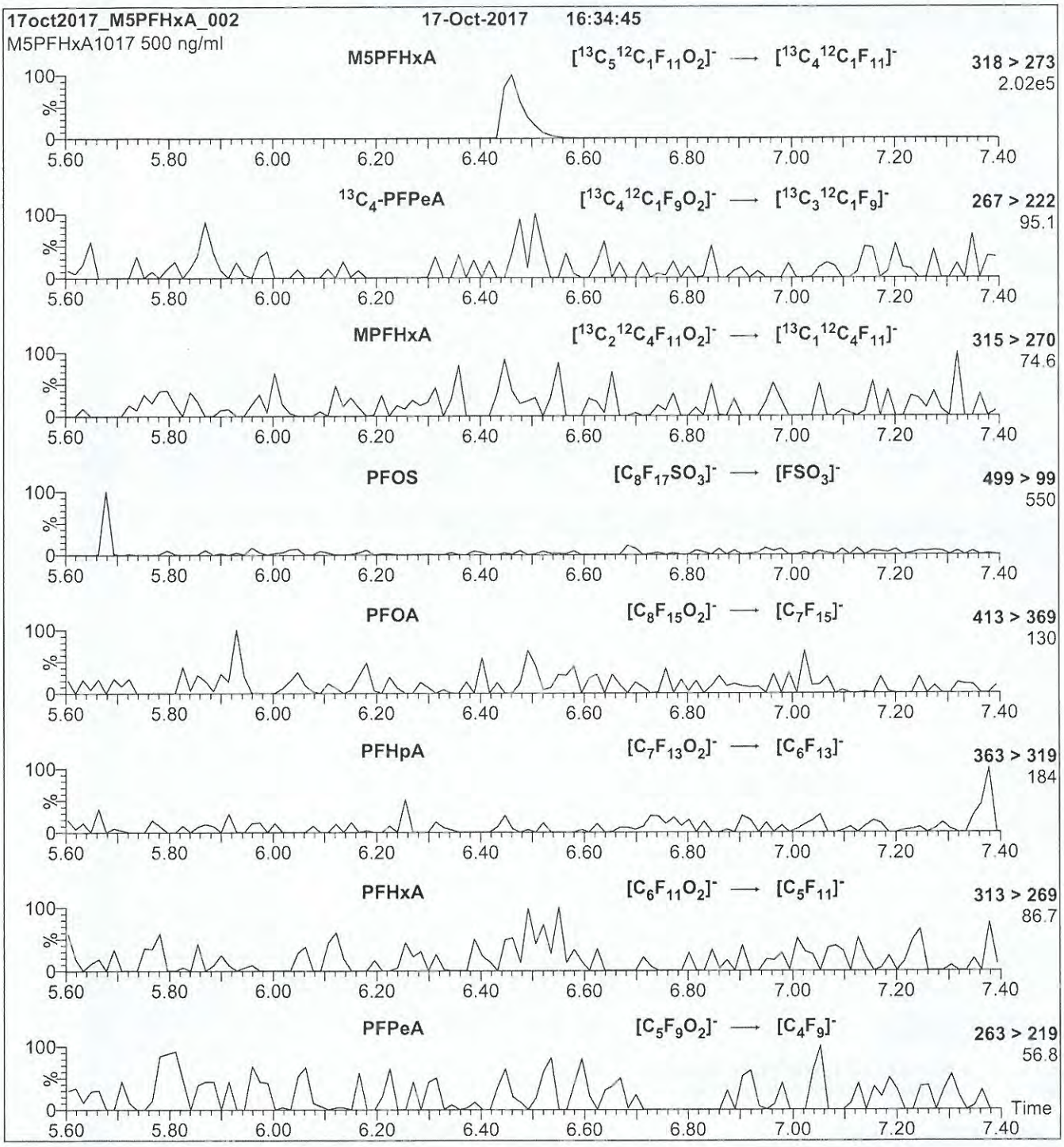
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2305

Figure 2: **M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M5PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

17L2306

WELLINGTON LABORATORIES

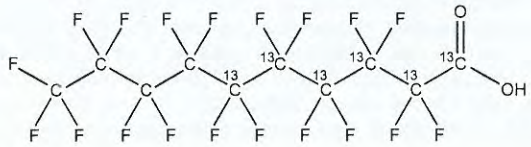
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M6PFDA
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid

LOT NUMBER: M6PFDA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_6{}^{12}C_4HF_{19}O_2$	**MOLECULAR WEIGHT:**	520.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,5,6-$^{13}C_6$)
LAST TESTED: (mm/dd/yyyy)	10/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/17/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1712306

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

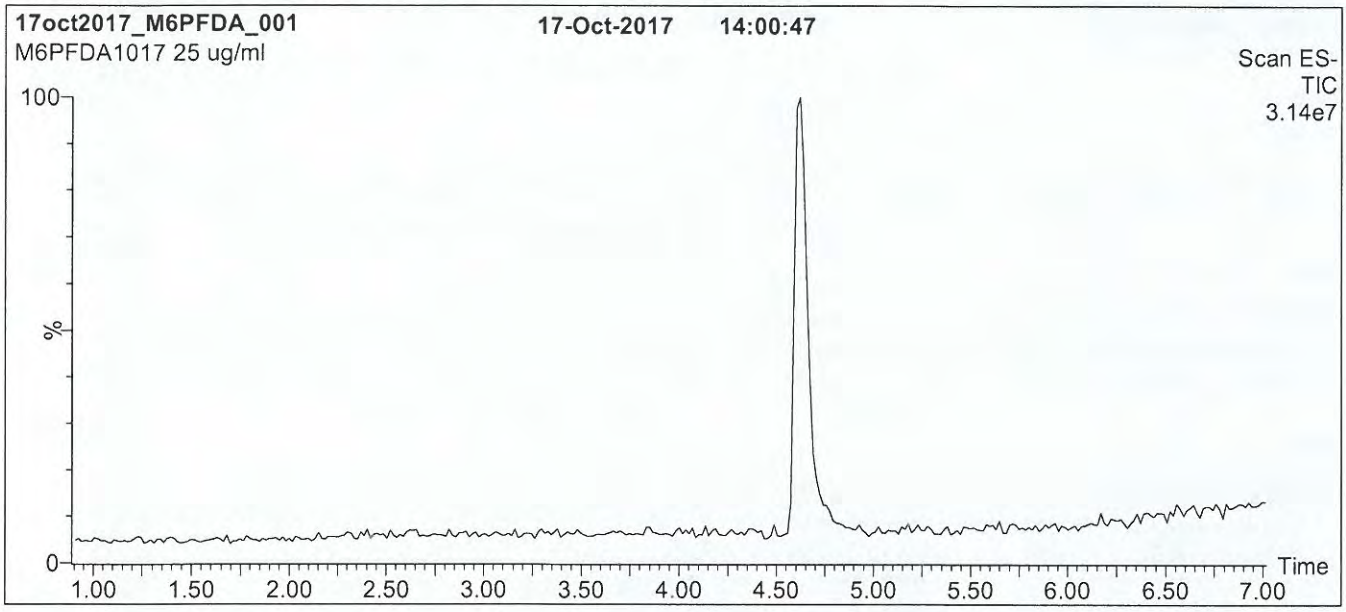
CALA

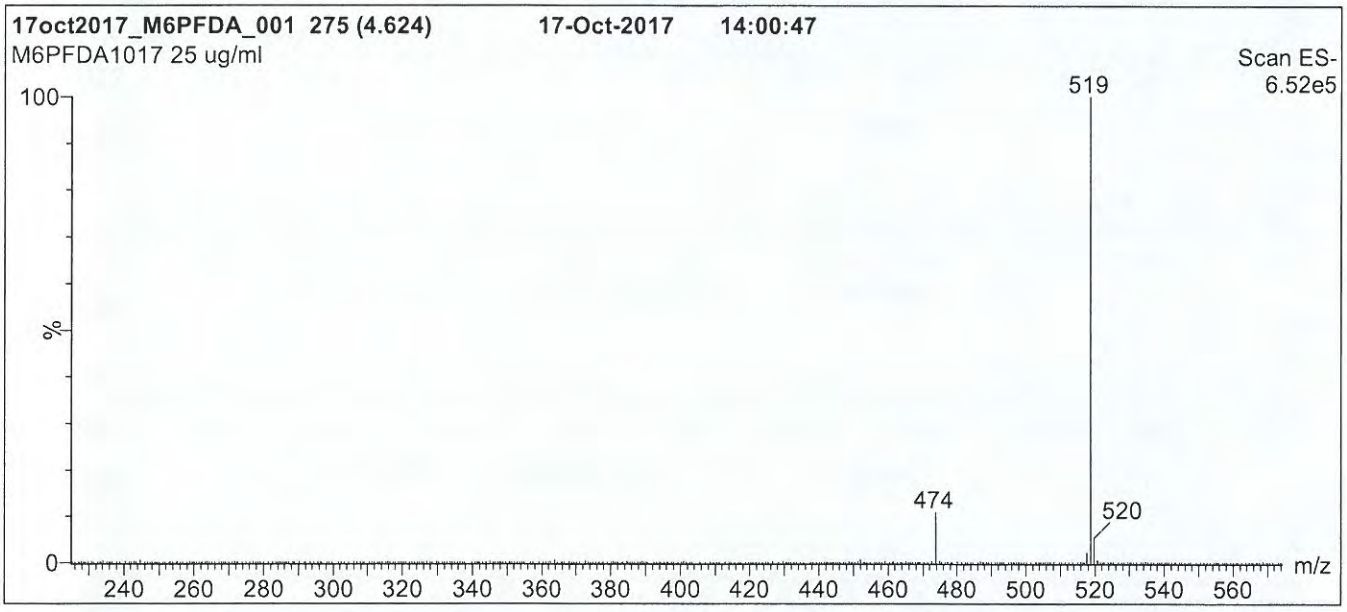
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2306

Figure 1: **M6PFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

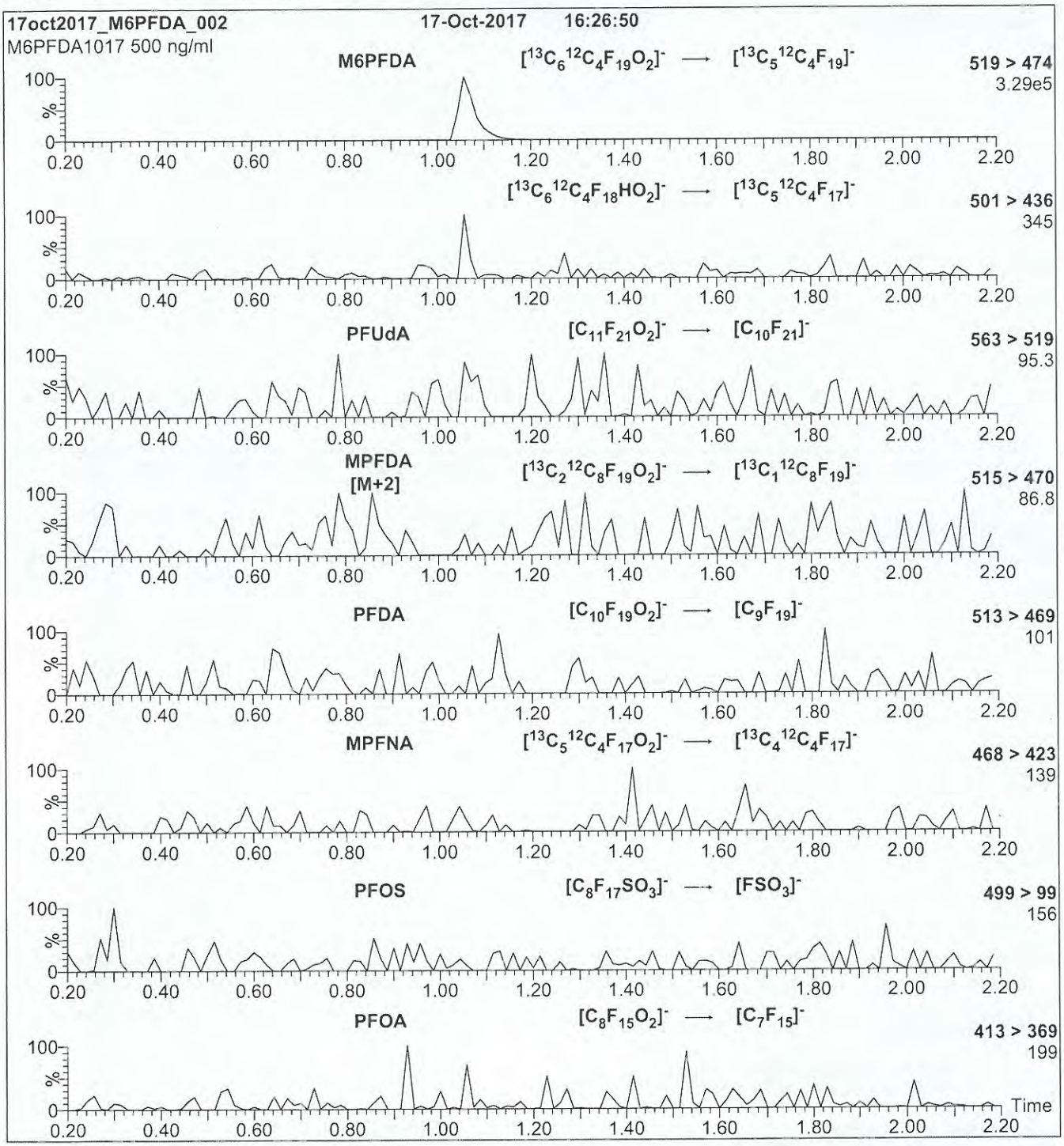
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

17L2306

Figure 2: **M6PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M6PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

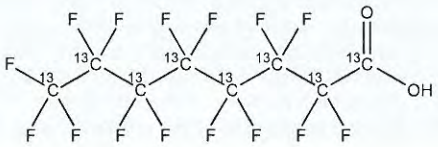
Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 13

17L2307

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M8PFOA	**LOT NUMBER:**	M8PFOA0717
COMPOUND:	Perfluoro-n-[$^{13}C_8$]octanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	422.01
CONCENTRATION:	49 ± 2.45 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	97.9% (M8PFOA) 2.1% (MPFOA [M+4])	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of native perfluoro-n-octanoic acid (PFOA) and ~ 2.1% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2307

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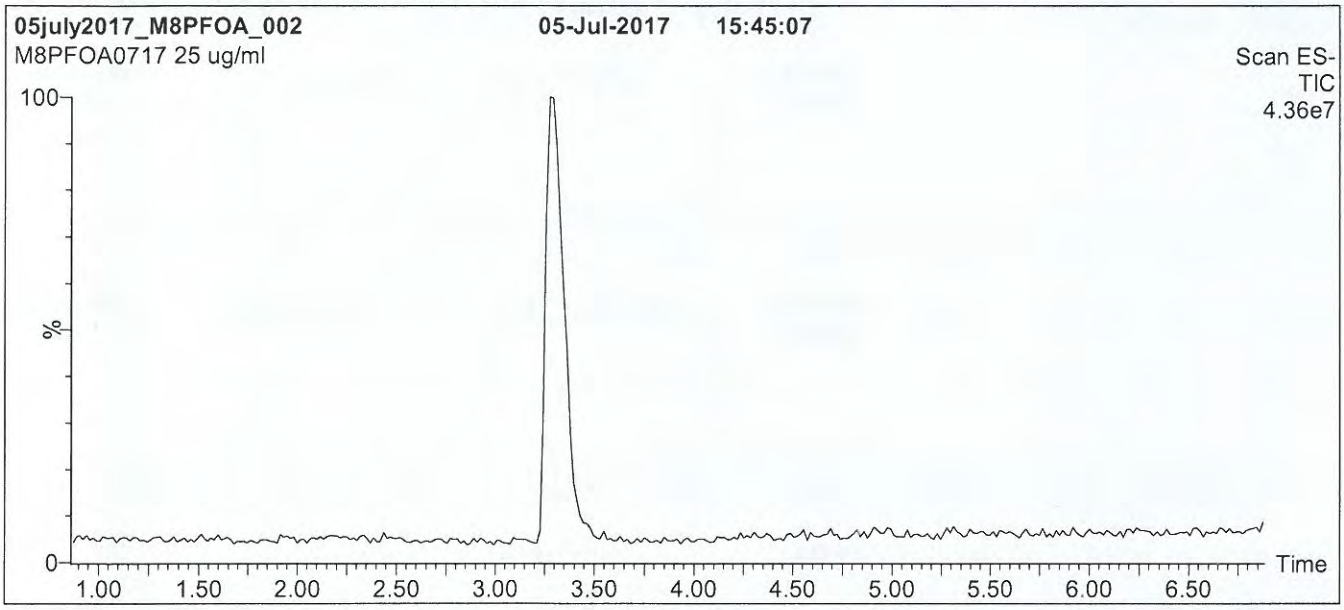
CALA Testing

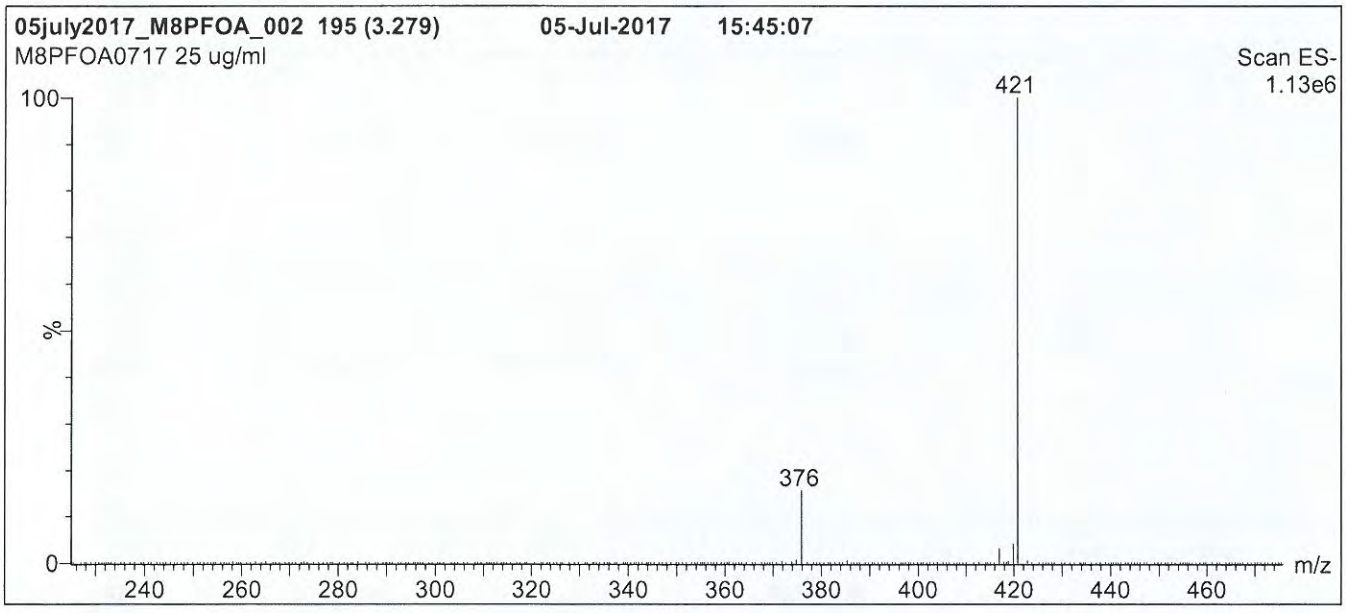
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2307

Figure 1: **M8PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

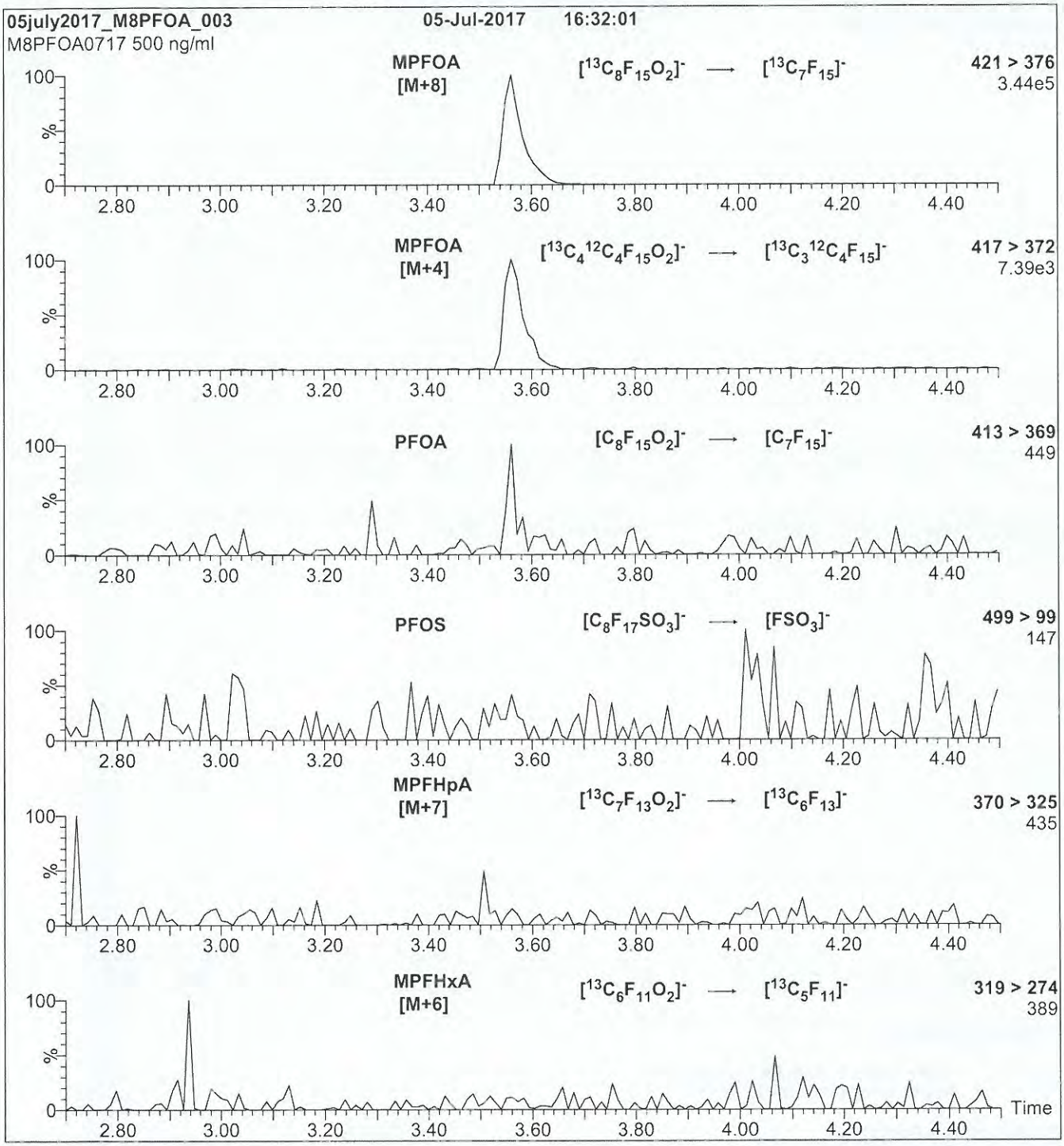
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2307

Figure 2: **M8PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M8PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

17L2308

WELLINGTON LABORATORIES

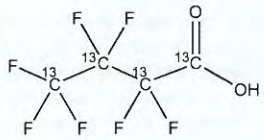
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFBA
COMPOUND: Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid

LOT NUMBER: MPFBA0417

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_4HF_7O_2$	**MOLECULAR WEIGHT:**	218.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4$-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	04/12/2017		
EXPIRY DATE: (mm/dd/yyyy)	04/12/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2308

INTENDED USE:

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CALA

ANAB ACCREDITED

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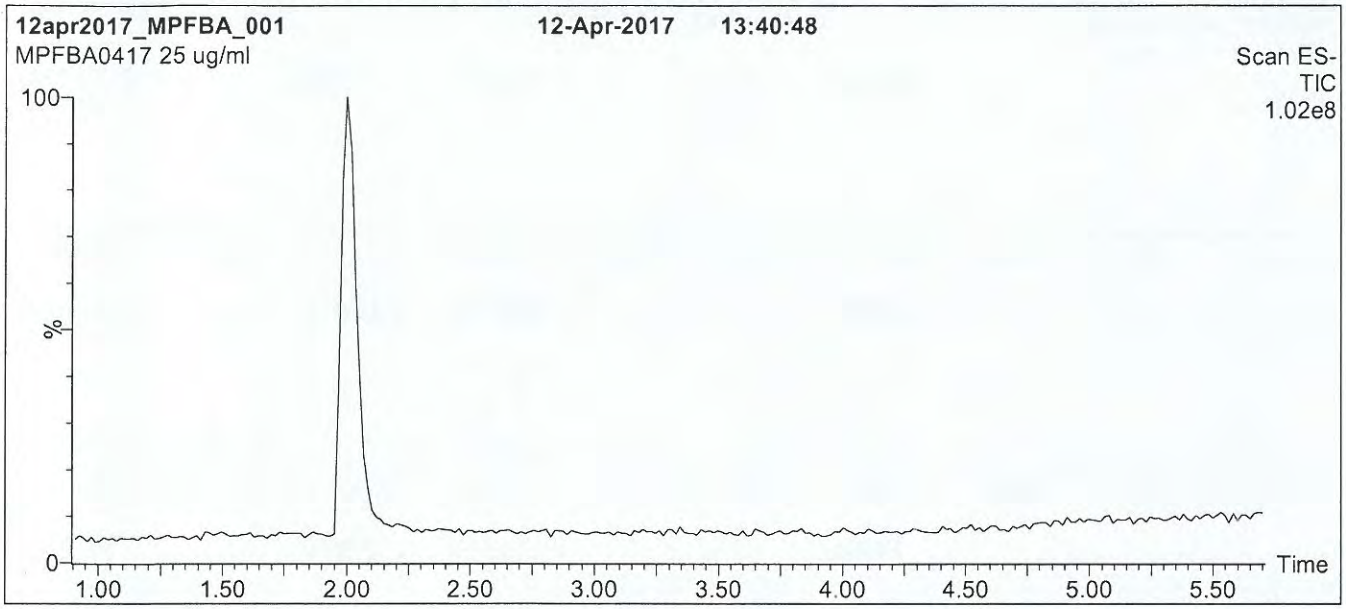
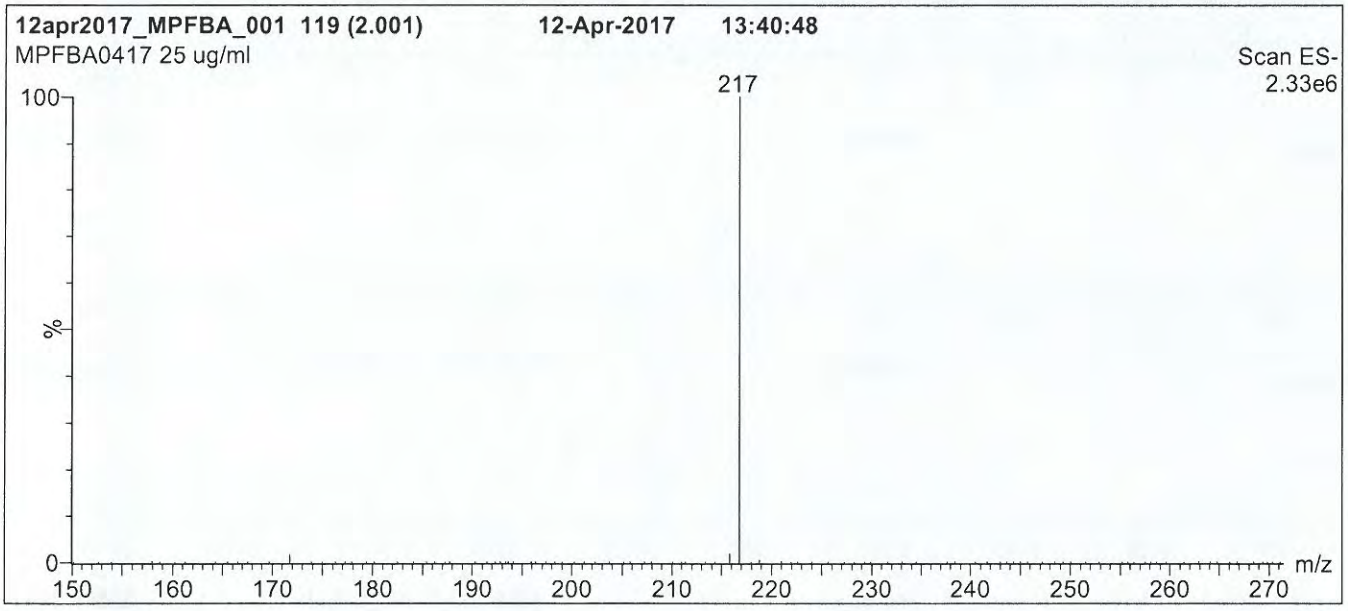
17L2308

Figure 1: **MPFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

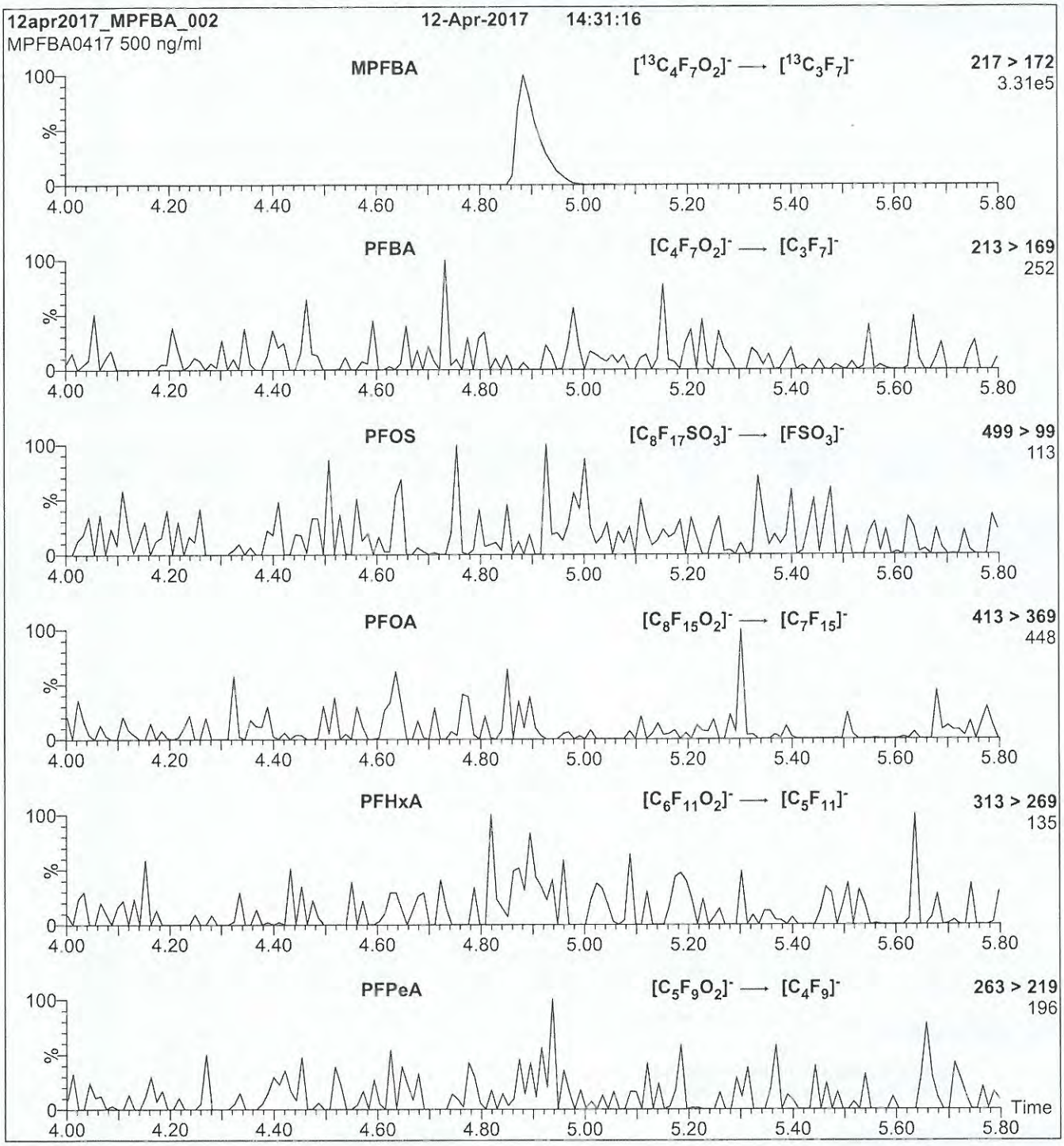
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1712308

Figure 2: **MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

17L2309

WELLINGTON LABORATORIES

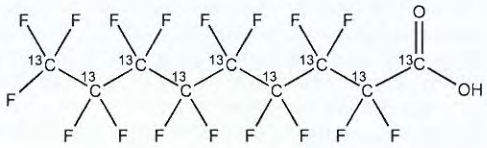
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M9PFNA
COMPOUND: Perfluoro-n-[$^{13}C_9$]nonanoic acid

LOT NUMBER: M9PFNA0517

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_9HF_{17}O_2$	**MOLECULAR WEIGHT:**	473.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_9$)
LAST TESTED: (mm/dd/yyyy)	05/23/2017		
EXPIRY DATE: (mm/dd/yyyy)	05/23/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.9% of $^{13}C_5{}^{12}C_4HF_{17}O_2$ (MPFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/25/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2309

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

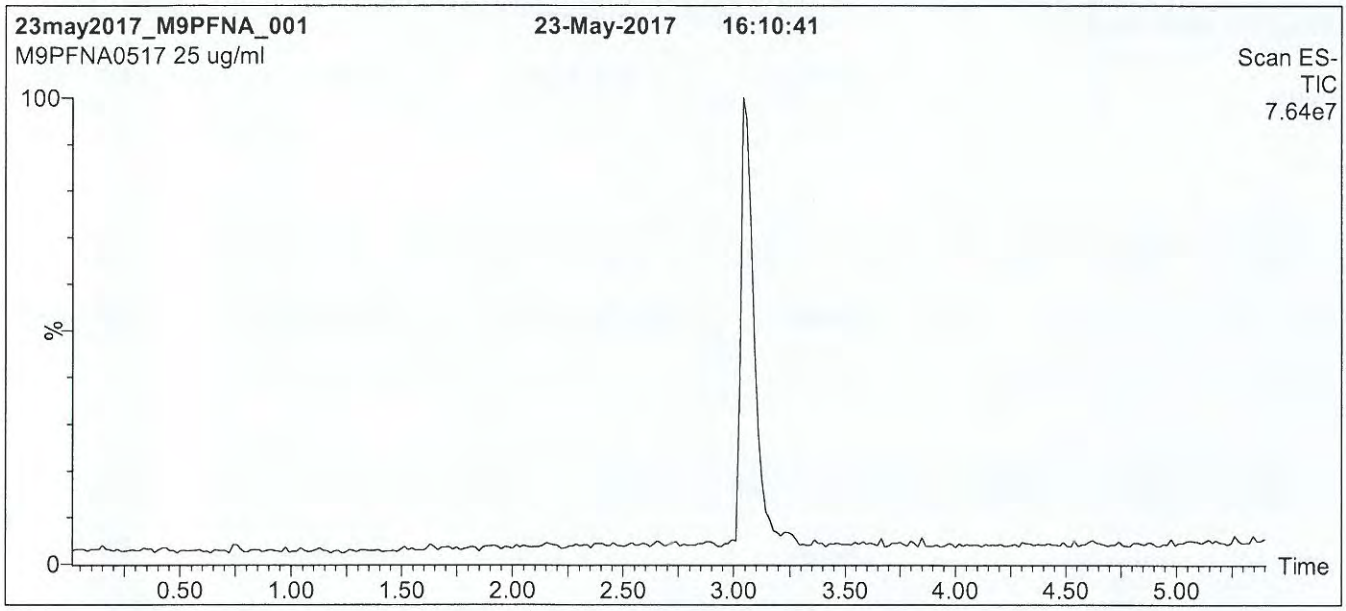
CALA

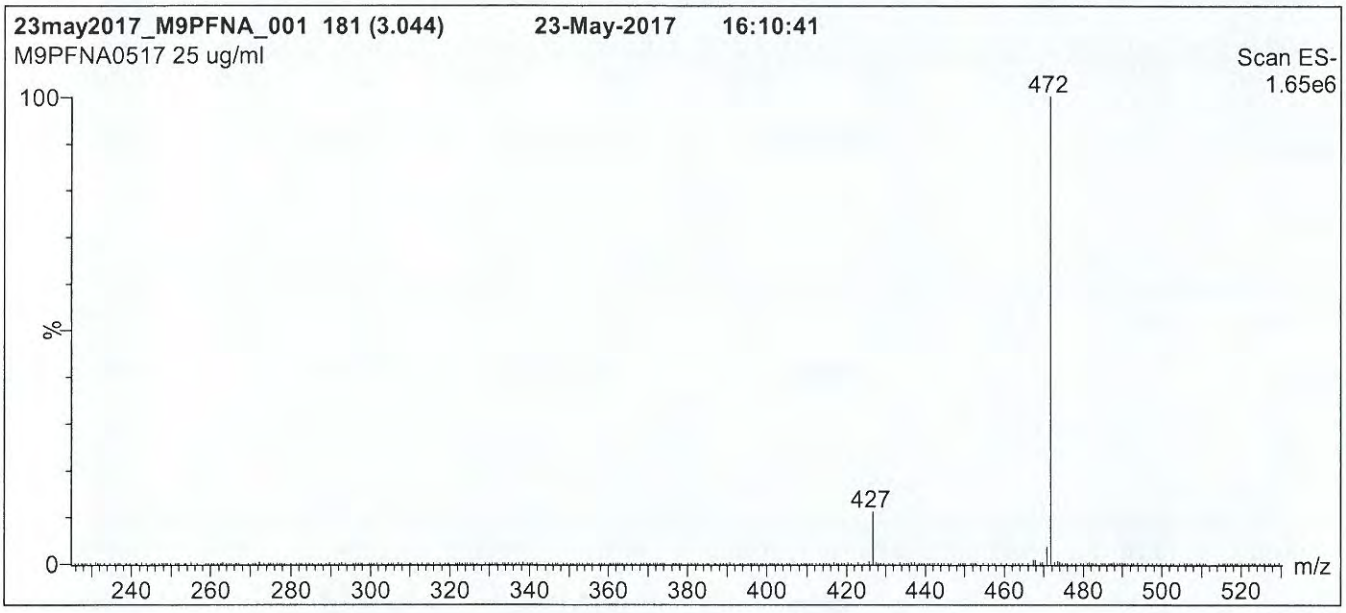
ANAB ACCREDITED

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2309

Figure 1: **M9PFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Micromass Quattro *micro* API MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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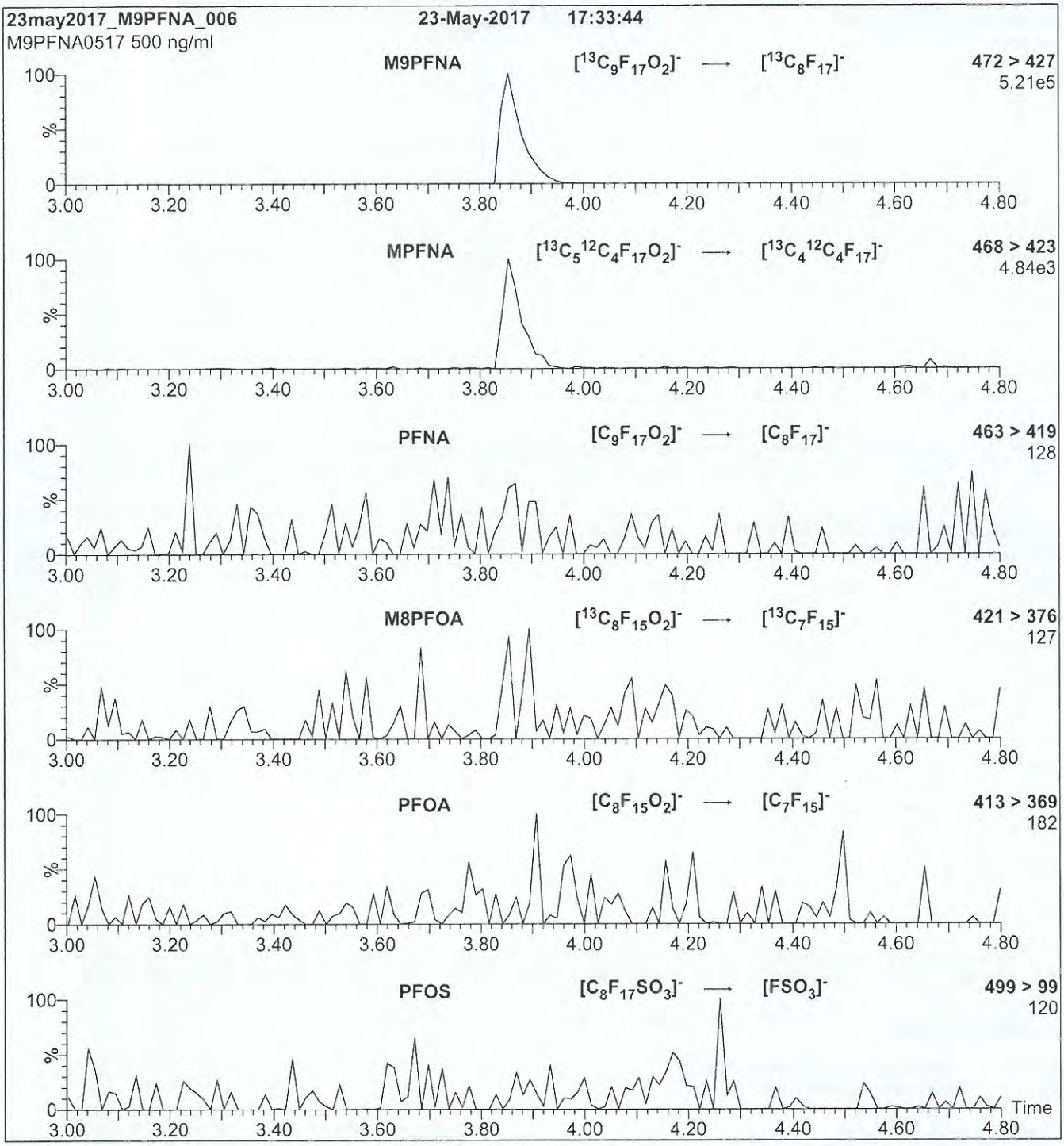
Figure 2: **M9PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M9PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 11

"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","375-73-5","PFBS","0.946","ng/g
","U","0.343","LOD","","TRG","","","1.89","LOQ","YES","-99","","1.23","0.001","0.946",""
"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","335-67-1","PFOA","0.468","ng/g
","J","0.223","LOD","","TRG","","","1.89","LOQ","YES","-99","","1.23","0.001","0.946",""
"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","1763-23-1","PFOS","3.13","ng/g
","","0.799","LOD","","TRG","","","1.89","LOQ","YES","-99","","1.23","0.001","0.946",""
"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","13C3-PFBS","13C3-
PFBS","96.9","%R","","-99","NA","","IS","96.9","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","13C2-PFOA","13C2-
PFOA","102","%R","","-99","NA","","IS","102","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SS501-0001","VAL - PFAS","Initial","1800140-01","Vista","13C8-PFOS","13C8-
PFOS","85.5","%R","","-99","NA","","IS","85.5","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","375-73-5","PFBS","0.955","ng/g
","U","0.347","LOD","","TRG","","","1.91","LOQ","YES","-99","","1.17","0.001","0.955",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","335-67-1","PFOA","0.955","ng/g
","U","0.225","LOD","","TRG","","","1.91","LOQ","YES","-99","","1.17","0.001","0.955",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","1763-23-1","PFOS","0.955","ng/g
","U","0.807","LOD","","TRG","","","1.91","LOQ","YES","-99","","1.17","0.001","0.955",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","13C3-PFBS","13C3-
PFBS","102","%R","","-99","NA","","IS","102","","-99","NA","YES","100","","1.17","0.001","-99",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","13C2-PFOA","13C2-
PFOA","103","%R","","-99","NA","","IS","103","","-99","NA","YES","100","","1.17","0.001","-99",""
"FT-SS502-0001","VAL - PFAS","Initial","1800140-02","Vista","13C8-PFOS","13C8-
PFOS","84.9","%R","","-99","NA","","IS","84.9","","-99","NA","YES","100","","1.17","0.001","-99",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","375-73-5","PFBS","0.917","ng/g
","U","0.333","LOD","","TRG","","","1.83","LOQ","YES","-99","","1.34","0.001","0.917",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","335-67-1","PFOA","3.42","ng/g
","","0.216","LOD","","TRG","","","1.83","LOQ","YES","-99","","1.34","0.001","0.917",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","1763-23-1","PFOS","4.81","ng/g
","","0.775","LOD","","TRG","","","1.83","LOQ","YES","-99","","1.34","0.001","0.917",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","13C3-PFBS","13C3-
PFBS","97.1","%R","","-99","NA","","IS","97.1","","-99","NA","YES","100","","1.34","0.001","-99",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","13C2-PFOA","13C2-
PFOA","93.2","%R","","-99","NA","","IS","93.2","","-99","NA","YES","100","","1.34","0.001","-99",""
"FT-SS503-0001","VAL - PFAS","Initial","1800140-03","Vista","13C8-PFOS","13C8-
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","U","0.304","LOD","","TRG","","","1.68","LOQ","YES","-99","","1.26","0.001","0.838",""
"FT-SB504-2022","VAL - PFAS","Initial","1800140-04","Vista","335-67-1","PFOA","0.497","ng/g
","J","0.198","LOD","","TRG","","","1.68","LOQ","YES","-99","","1.26","0.001","0.838",""
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","U","0.708","LOD","","TRG","","","1.68","LOQ","YES","-99","","1.26","0.001","0.838",""
"FT-SB504-2022","VAL - PFAS","Initial","1800140-04","Vista","13C3-PFBS","13C3-
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"FT-SB504-2022","VAL - PFAS","Initial","1800140-04","Vista","13C2-PFOA","13C2-
PFOA","107","%R","","-99","NA","","IS","107","","-99","NA","YES","100","","1.26","0.001","-99",""
"FT-SB504-2022","VAL - PFAS","Initial","1800140-04","Vista","13C8-PFOS","13C8-
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"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","375-73-5","PFBS","0.875","ng/g
","U","0.318","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.21","0.001","0.875",""
"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","335-67-1","PFOA","0.389","ng/g
","J","0.206","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.21","0.001","0.875",""
"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","1763-23-1","PFOS","0.875","ng/g

","U","0.739","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.21","0.001","0.875",""
"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","13C3-PFBS","13C3-
PFBS","111","%R","","-99","NA","","IS","111","","-99","NA","YES","100","","1.21","0.001","-99",""
"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","13C2-PFOA","13C2-
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"FT-SB505-1618","VAL - PFAS","Initial","1800140-05","Vista","13C8-PFOS","13C8-
PFOS","92.2","%R","","-99","NA","","IS","92.2","","-99","NA","YES","100","","1.21","0.001","-99",""
"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","375-73-5","PFBS","0.831","ng/g
","U","0.302","LOD","","TRG","","","1.66","LOQ","YES","-99","","1.26","0.001","0.831",""
"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","335-67-1","PFOA","0.831","ng/g
","U","0.196","LOD","","TRG","","","1.66","LOQ","YES","-99","","1.26","0.001","0.831",""
"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","1763-23-1","PFOS","0.831","ng/g
","U","0.702","LOD","","TRG","","","1.66","LOQ","YES","-99","","1.26","0.001","0.831",""
"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","13C3-PFBS","13C3-
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"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","13C2-PFOA","13C2-
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"FT-SB506-2022","VAL - PFAS","Initial","1800140-06","Vista","13C8-PFOS","13C8-
PFOS","110","%R","","-99","NA","","IS","110","","-99","NA","YES","100","","1.26","0.001","-99",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","375-73-5","PFBS","0.834","ng/g
","U","0.303","LOD","","TRG","","","1.67","LOQ","YES","-99","","1.27","0.001","0.834",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","335-67-1","PFOA","5.52","ng/g
","","0.197","LOD","","TRG","","","1.67","LOQ","YES","-99","","1.27","0.001","0.834",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","1763-23-1","PFOS","0.834","ng/g
","U","0.704","LOD","","TRG","","","1.67","LOQ","YES","-99","","1.27","0.001","0.834",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","13C3-PFBS","13C3-
PFBS","111","%R","","-99","NA","","IS","111","","-99","NA","YES","100","","1.27","0.001","-99",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","13C2-PFOA","13C2-
PFOA","94.0","%R","","-99","NA","","IS","94.0","","-99","NA","YES","100","","1.27","0.001","-99",""
"FT-SB507-1819","VAL - PFAS","Initial","1800140-07","Vista","13C8-PFOS","13C8-
PFOS","95.1","%R","","-99","NA","","IS","95.1","","-99","NA","YES","100","","1.27","0.001","-99",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","375-73-5","PFBS","0.855","ng/g
","U","0.310","LOD","","TRG","","","1.71","LOQ","YES","-99","","1.23","0.001","0.855",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","335-67-1","PFOA","3.46","ng/g
","","0.202","LOD","","TRG","","","1.71","LOQ","YES","-99","","1.23","0.001","0.855",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","1763-23-1","PFOS","2.07","ng/g
","","0.723","LOD","","TRG","","","1.71","LOQ","YES","-99","","1.23","0.001","0.855",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","13C3-PFBS","13C3-
PFBS","89.4","%R","","-99","NA","","IS","89.4","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","13C2-PFOA","13C2-
PFOA","87.2","%R","","-99","NA","","IS","87.2","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SB508-1617","VAL - PFAS","Initial","1800140-08","Vista","13C8-PFOS","13C8-
PFOS","101","%R","","-99","NA","","IS","101","","-99","NA","YES","100","","1.23","0.001","-99",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","375-73-5","PFBS","0.851","ng/g
","U","0.309","LOD","","TRG","","","1.70","LOQ","YES","-99","","1.33","0.001","0.851",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","335-67-1","PFOA","0.851","ng/g
","U","0.201","LOD","","TRG","","","1.70","LOQ","YES","-99","","1.33","0.001","0.851",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","1763-23-1","PFOS","30.0","ng/g
","","0.719","LOD","","TRG","","","1.70","LOQ","YES","-99","","1.33","0.001","0.851",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","13C3-PFBS","13C3-
PFBS","114","%R","","-99","NA","","IS","114","","-99","NA","YES","100","","1.33","0.001","-99",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","13C2-PFOA","13C2-
PFOA","86.3","%R","","-99","NA","","IS","86.3","","-99","NA","YES","100","","1.33","0.001","-99",""
"FT-SB509-1718","VAL - PFAS","Initial","1800140-09","Vista","13C8-PFOS","13C8-

PFOS","93.7","%R","","-99","NA","","IS","93.7","","-99","NA","YES","100","","1.33","0.001","-99",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","375-73-5","PFBS","0.925","ng/g
","U","0.336","LOD","","TRG","","","1.85","LOQ","YES","-99","","1.16","0.001","0.925",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","335-67-1","PFOA","0.925","ng/g
","U","0.218","LOD","","TRG","","","1.85","LOQ","YES","-99","","1.16","0.001","0.925",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","1763-23-1","PFOS","5.18","ng/g
","","0.781","LOD","","TRG","","","1.85","LOQ","YES","-99","","1.16","0.001","0.925",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","13C3-PFBS","13C3-
PFBS","93.7","%R","","-99","NA","","IS","93.7","","-99","NA","YES","100","","1.16","0.001","-99",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","13C2-PFOA","13C2-
PFOA","91.2","%R","","-99","NA","","IS","91.2","","-99","NA","YES","100","","1.16","0.001","-99",""
"FT-SB510-0910","VAL - PFAS","Initial","1800140-10","Vista","13C8-PFOS","13C8-
PFOS","91.2","%R","","-99","NA","","IS","91.2","","-99","NA","YES","100","","1.16","0.001","-99",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","375-73-5","PFBS","0.884","ng/g
","U","0.321","LOD","","TRG","","","1.77","LOQ","YES","-99","","1.22","0.001","0.884",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","335-67-1","PFOA","2.43","ng/g
","","0.209","LOD","","TRG","","","1.77","LOQ","YES","-99","","1.22","0.001","0.884",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","1763-23-1","PFOS","0.884","ng/g
","U","0.747","LOD","","TRG","","","1.77","LOQ","YES","-99","","1.22","0.001","0.884",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","13C3-PFBS","13C3-
PFBS","109","%R","","-99","NA","","IS","109","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","13C2-PFOA","13C2-
PFOA","108","%R","","-99","NA","","IS","108","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB510-1415","VAL - PFAS","Initial","1800140-11","Vista","13C8-PFOS","13C8-
PFOS","96.5","%R","","-99","NA","","IS","96.5","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","375-73-5","PFBS","0.931","ng/g
","U","0.338","LOD","","TRG","","","1.86","LOQ","YES","-99","","1.24","0.001","0.931",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","335-67-1","PFOA","2.53","ng/g
","","0.220","LOD","","TRG","","","1.86","LOQ","YES","-99","","1.24","0.001","0.931",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","1763-23-1","PFOS","0.931","ng/g
","U","0.787","LOD","","TRG","","","1.86","LOQ","YES","-99","","1.24","0.001","0.931",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","13C3-PFBS","13C3-
PFBS","109","%R","","-99","NA","","IS","109","","-99","NA","YES","100","","1.24","0.001","-99",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","13C2-PFOA","13C2-
PFOA","103","%R","","-99","NA","","IS","103","","-99","NA","YES","100","","1.24","0.001","-99",""
"FT-SB511-1617","VAL - PFAS","Initial","1800140-12","Vista","13C8-PFOS","13C8-
PFOS","91.4","%R","","-99","NA","","IS","91.4","","-99","NA","YES","100","","1.24","0.001","-99",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","375-73-5","PFBS","0.949","ng/g
","U","0.344","LOD","","TRG","","","1.90","LOQ","YES","-99","","1.20","0.001","0.949",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","335-67-1","PFOA","0.510","ng/g
","J","0.224","LOD","","TRG","","","1.90","LOQ","YES","-99","","1.20","0.001","0.949",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","1763-23-1","PFOS","1.52","ng/g
","J","0.802","LOD","","TRG","","","1.90","LOQ","YES","-99","","1.20","0.001","0.949",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","13C3-PFBS","13C3-
PFBS","121","%R","","-99","NA","","IS","121","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","13C2-PFOA","13C2-
PFOA","98.7","%R","","-99","NA","","IS","98.7","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SS512-0001","VAL - PFAS","Initial","1800140-13","Vista","13C8-PFOS","13C8-
PFOS","81.2","%R","","-99","NA","","IS","81.2","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","375-73-5","PFBS","0.868","ng/g
","U","0.315","LOD","","TRG","","","1.74","LOQ","YES","-99","","1.22","0.001","0.868",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","335-67-1","PFOA","0.868","ng/g
","U","0.205","LOD","","TRG","","","1.74","LOQ","YES","-99","","1.22","0.001","0.868",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","1763-23-1","PFOS","0.868","ng/g

","U","0.733","LOD","","TRG","","","1.74","LOQ","YES","-99","","1.22","0.001","0.868",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","13C3-PFBS","13C3-
PFBS","119","%R","","-99","NA","","IS","119","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","13C2-PFOA","13C2-
PFOA","86.6","%R","","-99","NA","","IS","86.6","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB512-0708","VAL - PFAS","Initial","1800140-14","Vista","13C8-PFOS","13C8-
PFOS","82.9","%R","","-99","NA","","IS","82.9","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","375-73-5","PFBS","0.979","ng/g
","U","0.355","LOD","","TRG","","","1.96","LOQ","YES","-99","","1.20","0.001","0.979",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","335-67-1","PFOA","0.979","ng/g
","U","0.231","LOD","","TRG","","","1.96","LOQ","YES","-99","","1.20","0.001","0.979",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","1763-23-1","PFOS","0.979","ng/g
","U","0.827","LOD","","TRG","","","1.96","LOQ","YES","-99","","1.20","0.001","0.979",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","13C3-PFBS","13C3-
PFBS","95.0","%R","","-99","NA","","IS","95.0","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","13C2-PFOA","13C2-
PFOA","90.5","%R","","-99","NA","","IS","90.5","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SB512-2223","VAL - PFAS","Initial","1800140-15","Vista","13C8-PFOS","13C8-
PFOS","89.9","%R","","-99","NA","","IS","89.9","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","375-73-5","PFBS","1.05","ng/g
","U","0.380","LOD","","TRG","","","2.09","LOQ","YES","-99","","1.19","0.001","1.05",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","335-67-1","PFOA","0.259","ng/g
","J","0.247","LOD","","TRG","","","2.09","LOQ","YES","-99","","1.19","0.001","1.05",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","1763-23-1","PFOS","1.05","ng/g
","U","0.884","LOD","","TRG","","","2.09","LOQ","YES","-99","","1.19","0.001","1.05",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","13C3-PFBS","13C3-
PFBS","135","%R","","-99","NA","","IS","135","","-99","NA","YES","100","","1.19","0.001","-99",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","13C2-PFOA","13C2-
PFOA","101","%R","","-99","NA","","IS","101","","-99","NA","YES","100","","1.19","0.001","-99",""
"FT-SS513-0001","VAL - PFAS","Initial","1800140-16","Vista","13C8-PFOS","13C8-
PFOS","87.4","%R","","-99","NA","","IS","87.4","","-99","NA","YES","100","","1.19","0.001","-99",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","375-73-5","PFBS","0.866","ng/g
","U","0.314","LOD","","TRG","","","1.73","LOQ","YES","-99","","1.22","0.001","0.866",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","335-67-1","PFOA","0.866","ng/g
","U","0.204","LOD","","TRG","","","1.73","LOQ","YES","-99","","1.22","0.001","0.866",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","1763-23-1","PFOS","0.866","ng/g
","U","0.732","LOD","","TRG","","","1.73","LOQ","YES","-99","","1.22","0.001","0.866",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","13C3-PFBS","13C3-
PFBS","110","%R","","-99","NA","","IS","110","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","13C2-PFOA","13C2-
PFOA","86.5","%R","","-99","NA","","IS","86.5","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-SB513-1819","VAL - PFAS","Initial","1800140-17","Vista","13C8-PFOS","13C8-
PFOS","105","%R","","-99","NA","","IS","105","","-99","NA","YES","100","","1.22","0.001","-99",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","375-73-5","PFBS","0.877","ng/g
","U","0.318","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.20","0.001","0.877",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","335-67-1","PFOA","0.557","ng/g
","J","0.207","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.20","0.001","0.877",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","1763-23-1","PFOS","0.877","ng/g
","U","0.741","LOD","","TRG","","","1.75","LOQ","YES","-99","","1.20","0.001","0.877",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","13C3-PFBS","13C3-
PFBS","102","%R","","-99","NA","","IS","102","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","13C2-PFOA","13C2-
PFOA","83.4","%R","","-99","NA","","IS","83.4","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-Dup01-20180116","VAL - PFAS","Initial","1800140-18","Vista","13C8-PFOS","13C8-

PFOS","83.6","%R","","-99","NA","","IS","83.6","","-99","NA","YES","100","","1.20","0.001","-99",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","375-73-5","PFBS","0.897","ng/g
","U","0.326","LOD","","TRG","","","1.79","LOQ","YES","-99","","1.21","0.001","0.897",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","335-67-1","PFOA","2.24","ng/g
","","0.212","LOD","","TRG","","","1.79","LOQ","YES","-99","","1.21","0.001","0.897",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","1763-23-1","PFOS","0.975","ng/g
","J","0.758","LOD","","TRG","","","1.79","LOQ","YES","-99","","1.21","0.001","0.897",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","13C3-PFBS","13C3-
PFBS","97.3","%R","","-99","NA","","IS","97.3","","-99","NA","YES","100","","1.21","0.001","-99",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","13C2-PFOA","13C2-
PFOA","91.3","%R","","-99","NA","","IS","91.3","","-99","NA","YES","100","","1.21","0.001","-99",""
"FT-Dup02-20180117","VAL - PFAS","Initial","1800140-19","Vista","13C8-PFOS","13C8-
PFOS","96.3","%R","","-99","NA","","IS","96.3","","-99","NA","YES","100","","1.21","0.001","-99",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","375-73-5","PFBS","1.00","ng/g
","U","0.363","LOD","","TRG","","","2.00","LOQ","YES","-99","","1.00","0.001","1.00",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","335-67-1","PFOA","1.00","ng/g
","U","0.236","LOD","","TRG","","","2.00","LOQ","YES","-99","","1.00","0.001","1.00",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","1763-23-1","PFOS","1.00","ng/g
","U","0.845","LOD","","TRG","","","2.00","LOQ","YES","-99","","1.00","0.001","1.00",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","13C3-PFBS","13C3-
PFBS","87.9","%R","","-99","NA","","IS","87.9","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","13C2-PFOA","13C2-
PFOA","85.8","%R","","-99","NA","","IS","85.8","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-BLK1","VAL - PFAS","Initial","B8A0197-BLK1","Vista","13C8-PFOS","13C8-
PFOS","89.3","%R","","-99","NA","","IS","89.3","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","375-73-5","PFBS","8.91","ng/g
","","0.363","LOD","","TRG","89.1","","2.00","LOQ","YES","10.0","","1.00","0.001","1.00",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","335-67-1","PFOA","10.7","ng/g
","","0.236","LOD","","TRG","107","","2.00","LOQ","YES","10.0","","1.00","0.001","1.00",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","1763-23-1","PFOS","10.4","ng/g
","","0.845","LOD","","TRG","104","","2.00","LOQ","YES","10.0","","1.00","0.001","1.00",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","13C3-PFBS","13C3-
PFBS","111","%R","","-99","NA","","IS","111","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","13C2-PFOA","13C2-
PFOA","90.8","%R","","-99","NA","","IS","90.8","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-BS1","VAL - PFAS","Initial","B8A0197-BS1","Vista","13C8-PFOS","13C8-
PFOS","88.6","%R","","-99","NA","","IS","88.6","","-99","NA","YES","100","","1.00","0.001","-99",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","375-73-5","PFBS","7.70","ng/g
","","0.303","LOD","","TRG","92.4","","1.67","LOQ","YES","8.33","FT-SB505-1618","1.27","0.001","0.833",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","335-67-1","PFOA","10.4","ng/g
","","0.197","LOD","","TRG","120","","1.67","LOQ","YES","8.33","FT-SB505-1618","1.27","0.001","0.833",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","1763-23-1","PFOS","8.69","ng/g
","","0.704","LOD","","TRG","96.2","","1.67","LOQ","YES","8.33","FT-SB505-1618","1.27","0.001","0.833",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","13C3-PFBS","13C3-
PFBS","104","%R","","-99","NA","","IS","104","","-99","NA","YES","100","FT-SB505-1618","1.27","0.001","-99",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","13C2-PFOA","13C2-
PFOA","95.1","%R","","-99","NA","","IS","95.1","","-99","NA","YES","100","FT-SB505-
1618","1.27","0.001","-99",""
"B8A0197-MS1","VAL - PFAS","Initial","B8A0197-MS1","Vista","13C8-PFOS","13C8-
PFOS","90.4","%R","","-99","NA","","IS","90.4","","-99","NA","YES","100","FT-SB505-
1618","1.27","0.001","-99",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","375-73-5","PFBS","9.52","ng/g
","","0.318","LOD","","TRG","109","16.5","1.75","LOQ","YES","8.75","FT-SB505-1618","1.21","0.001","0.875",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","335-67-1","PFOA","10.3","ng/g

","","0.206","LOD","","TRG","113","6.01","1.75","LOQ","YES","8.75","FT-SB505-1618","1.21","0.001","0.875",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","1763-23-1","PFOS","8.54","ng/g
","","0.739","LOD","","TRG","89.9","6.77","1.75","LOQ","YES","8.75","FT-SB505-1618","1.21","0.001","0.875",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","13C3-PFBS","13C3-
PFBS","107","%R","","-99","NA","","IS","107","","-99","NA","YES","100","FT-SB505-1618","1.21","0.001","-99",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","13C2-PFOA","13C2-
PFOA","87.7","%R","","-99","NA","","IS","87.7","","-99","NA","YES","100","FT-SB505-
1618","1.21","0.001","-99",""
"B8A0197-MSD1","VAL - PFAS","Initial","B8A0197-MSD1","Vista","13C8-PFOS","13C8-
PFOS","93.8","%R","","-99","NA","","IS","93.8","","-99","NA","YES","100","FT-SB505-
1618","1.21","0.001","-99",""
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01","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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02","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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03","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
06:10","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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06:33","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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06","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
06:44","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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07","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
06:56","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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08","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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09","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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10","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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11","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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12","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
08:27","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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13","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
08:39","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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14","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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15","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
09:02","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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16","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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17","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
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18","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
09:36","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
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19","NM","","6.60","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
09:48","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
00:00","7.86","B8A0197","B8A0197","NA","S8B0013","1800140","01/19/2018 09:28","01/01/1900 00:00",""
"112G08005-WE05","112G08005-WE05","B8A0197-BLK1","01/01/1900 00:00","SO","B8A0197-
BLK1","MB","","-99","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
05:12","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
00:00","0","B8A0197","B8A0197","NA","S8B0013","1800140","01/01/1900 00:00","01/01/1900 00:00",""
"112G08005-WE05","112G08005-WE05","B8A0197-BS1","01/01/1900 00:00","SO","B8A0197-
BS1","LCS","","-99","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
05:01","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
00:00","0","B8A0197","B8A0197","NA","S8B0013","1800140","01/01/1900 00:00","01/01/1900 00:00",""
"112G08005-WE05","112G08005-WE05","B8A0197-MS1","01/01/1900 00:00","SO","B8A0197-
MS1","MS","","-99","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
05:24","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
00:00","0","B8A0197","B8A0197","NA","S8B0013","1800140","01/01/1900 00:00","01/01/1900 00:00",""
"112G08005-WE05","112G08005-WE05","B8A0197-MSD1","01/01/1900 00:00","SO","B8A0197-
MSD1","MSD","","-99","VAL - PFAS","METHOD","Initial","02/01/2018 17:35","02/07/2018
05:35","Vista","COA","DRY","NA","1","NA","NA","01/01/1900
00:00","0","B8A0197","B8A0197","NA","S8B0013","1800140","01/01/1900 00:00","01/01/1900 00:00",""

TETRA TECH

INTERNAL CORRESPONDENCE

TO: **K. FRANCISCO** **DATE:** **MARCH 16, 2018**

FROM: **MICHELLE L. WOEBER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)**
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), CALVERTON
SITE 00002, FORMER FIRE TRAINING AREA
SAMPLE DELIVERY GROUP (SDG) 1800140

SAMPLES: 19/Soil/PFAS

FT-Dup01-20180116	FT-Dup02-20180117	FT-SB504-2022
FT-SB505-1618	FT-SB506-2022	FT-SB507-1819
FT-SB508-1617	FT-SB509-1718	FT-SB510-0910
FT-SB510-1415	FT-SB511-1617	FT-SB512-0708
FT-SB512-2223	FT-SB513-1819	FT-SS501-0001
FT-SS502-0001	FT-SS503-0001	FT-SS512-0001
FT-SS513-0001		

Overview

The sample set for NWIRP Calverton, SDG 1800140 consisted of nineteen (19) soil environmental samples. All nineteen (19) samples were analyzed for select polyfluoroalkyl substances (PFAS). Two field duplicate sample pairs were included in this SDG: FT-Dup01-20180116/FT-SB504-2022 and FT-Dup02-20180117/FT-SB510-1415.

The samples were collected by Tetra Tech, Inc. on January 16-18, 2018 and analyzed by Vista Analytical Laboratory. All analyses were conducted in accordance with VAL Method PFAS (version of EPA Method 537 Modified) analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

* • Data completeness
* • Hold times/Sample Preservation
* • LC/MS/MS System Tuning and Performance
* • Ion Transition Check
* • Initial/Continuing Calibrations
* • Laboratory Method Blank Results
* • Field Reagent Blank Results
* • Extraction Internal Standard Recoveries
• Injection Internal Standard Recoveries
* • Laboratory Control Sample Recoveries
* • Ongoing Precision Recovery (OPR) Results
* • Matrix Spike/Matrix Spike Sample Duplicate Results
* • Field Duplicate Precision
* • Compound Identification
* • Compound Quantitation
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results

are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, and documentation supporting these findings is presented in Appendix C.

PFAS

No issues were identified.

Additional Comments

It was noted in the laboratory case narrative that the initial analyses of samples FT-Dup01-20180116, FT-SB505-1618, FT-SB506-2022, FT-SB507-1819, FT-SB509-1718, FT-SB512-0708, FT-SB512-2223, FT-SB513-1819, and FT-SS512-0001 had one or more injected internal standards outside quality control limits. The laboratory re-injected the samples with similar results. All initial results were reported. No validation action was taken because the extraction internal standards were acceptable and results are not quantified with the injected internal standards.

Field Reagent Blanks (FRBs) were not included with the soil samples contained in this SDG.

Detected results reported below the Limit of Quantitation (LOQ) but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the LOD.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Superfund Methods Data Review" (January 2017), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (2013). The text of this report has been formulated to address only those areas affecting data quality.

Michelle L. Woeber

Tetra Tech, Inc.
Michelle L. Woeber
Chemist/Data Validator

Joseph A. Samchuck

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A - Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted method detection limit for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
R	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UR	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate
Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

PROJ_NO: 08005-WE05	NSAMPLE	FT-Dup01-20180116			FT-Dup02-20180117			FT-SB504-2022			FT-SB505-1618		
SDG: 1800140	LAB_ID	1800140-18			1800140-19			1800140-04			1800140-05		
FRACTION: PFAS	SAMP_DATE	1/16/2018			1/17/2018			1/16/2018			1/16/2018		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.1			92.1			94.7			94.5		
	DUP_OF	FT-SB504-2022			FT-SB510-1415								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.557	J	P	2.24			0.497	J	P	0.389	J	P
PERFLUOROBUTANESULFONIC ACID		0.877	U		0.897	U		0.838	U		0.875	U	
PERFLUOROOCTANE SULFONIC ACID		0.877	U		0.975	J	P	0.838	U		0.875	U	

PROJ_NO: 08005-WE05	NSAMPLE	FT-SB506-2022			FT-SB507-1819			FT-SB508-1617			FT-SB509-1718		
SDG: 1800140	LAB_ID	1800140-06			1800140-07			1800140-08			1800140-09		
FRACTION: PFAS	SAMP_DATE	1/16/2018			1/16/2018			1/18/2018			1/16/2018		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.5			94.4			95.1			88.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.831	U		5.52			3.46			0.851	U	
PERFLUOROBUTANESULFONIC ACID		0.831	U		0.834	U		0.855	U		0.851	U	
PERFLUOROOCTANE SULFONIC ACID		0.831	U		0.834	U		2.07			30		

PROJ_NO: 08005-WE05	NSAMPLE	FT-SB510-0910			FT-SB510-1415			FT-SB511-1617			FT-SB512-0708		
SDG: 1800140	LAB_ID	1800140-10			1800140-11			1800140-12			1800140-14		
FRACTION: PFAS	SAMP_DATE	1/17/2018			1/17/2018			1/17/2018			1/17/2018		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.2			92.7			86.6			94.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.925	U		2.43			2.53			0.868	U	
PERFLUOROBUTANESULFONIC ACID		0.925	U		0.884	U		0.931	U		0.868	U	
PERFLUOROOCTANE SULFONIC ACID		5.18			0.884	U		0.931	U		0.868	U	

PROJ_NO: 08005-WE05	NSAMPLE	FT-SB512-2223			FT-SB513-1819			FT-SS501-0001			FT-SS502-0001		
SDG: 1800140	LAB_ID	1800140-15			1800140-17			1800140-01			1800140-02		
FRACTION: PFAS	SAMP_DATE	1/17/2018			1/17/2018			1/16/2018			1/16/2018		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	85.2			94.7			86.0			89.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.979	U		0.866	U		0.468	J	P	0.955	U	
PERFLUOROBUTANESULFONIC ACID		0.979	U		0.866	U		0.946	U		0.955	U	
PERFLUOROOCTANE SULFONIC ACID		0.979	U		0.866	U		3.13			0.955	U	

PROJ_NO: 08005-WE05	NSAMPLE	FT-SS503-0001			FT-SS512-0001			FT-SS513-0001		
SDG: 1800140	LAB_ID	1800140-03			1800140-13			1800140-16		
FRACTION: PFAS	SAMP_DATE	1/17/2018			1/17/2018			1/17/2018		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.4			87.9			80.3		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		3.42			0.51	J	P	0.259	J	P
PERFLUOROBUTANESULFONIC ACID		0.917	U		0.949	U		1.05	U	
PERFLUOROOCTANE SULFONIC ACID		4.81			1.52	J	P	1.05	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Sample ID: FT-SS501-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:05

Laboratory Data

Lab Sample: 1800140-01
Date Received: 19-Jan-18 09:28
% Solids: 86.0

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.343	0.946	1.89		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
PFOA	0.468	0.223	0.946	1.89	J	B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
PFOS	3.13	0.799	0.946	1.89		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.9	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
13C2-PFOA	IS	102	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1
13C8-PFOS	IS	85.5	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 05:47	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS502-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:55

Laboratory Data

Lab Sample: 1800140-02
Date Received: 19-Jan-18 09:28
% Solids: 89.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.347	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
PFOA	ND	0.225	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
PFOS	ND	0.807	0.955	1.91		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
13C2-PFOA	IS	103	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1
13C8-PFOS	IS	84.9	50 - 150		B8A0197	01-Feb-18	1.17 g	07-Feb-18 05:58	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS503-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 10:45

Laboratory Data

Lab Sample: 1800140-03
Date Received: 19-Jan-18 09:28
% Solids: 81.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.333	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
PFOA	3.42	0.216	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
PFOS	4.81	0.775	0.917	1.83		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.1	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
13C2-PFOA	IS	93.2	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1
13C8-PFOS	IS	77.6	50 - 150		B8A0197	01-Feb-18	1.34 g	07-Feb-18 06:10	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB504-2022

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 14:43

Laboratory Data

Lab Sample: 1800140-04
Date Received: 19-Jan-18 09:28
% Solids: 94.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.304	0.838	1.68		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
PFOA	0.497	0.198	0.838	1.68	J	B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
PFOS	ND	0.708	0.838	1.68		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.8	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
13C2-PFOA	IS	107	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1
13C8-PFOS	IS	99.4	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:21	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB505-1618

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 15:36

Laboratory Data

Lab Sample: 1800140-05
Date Received: 19-Jan-18 09:28
% Solids: 94.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.318	0.875	1.75		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
PFOA	0.389	0.206	0.875	1.75	J	B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
PFOS	ND	0.739	0.875	1.75		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
13C2-PFOA	IS	84.7	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1
13C8-PFOS	IS	92.2	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 06:33	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB506-2022

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 12:08

Laboratory Data

Lab Sample: 1800140-06
Date Received: 19-Jan-18 09:28
% Solids: 95.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.302	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
PFOA	ND	0.196	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
PFOS	ND	0.702	0.831	1.66		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
13C2-PFOA	IS	96.4	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1
13C8-PFOS	IS	110	50 - 150		B8A0197	01-Feb-18	1.26 g	07-Feb-18 06:44	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB507-1819

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 13:08

Laboratory Data

Lab Sample: 1800140-07
Date Received: 19-Jan-18 09:28
% Solids: 94.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.303	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
PFOA	5.52	0.197	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
PFOS	ND	0.704	0.834	1.67		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
13C2-PFOA	IS	94.0	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1
13C8-PFOS	IS	95.1	50 - 150		B8A0197	01-Feb-18	1.27 g	07-Feb-18 06:56	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB508-1617

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 18-Jan-18 08:45

Laboratory Data

Lab Sample: 1800140-08
Date Received: 19-Jan-18 09:28
% Solids: 95.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.310	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
PFOA	3.46	0.202	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
PFOS	2.07	0.723	0.855	1.71		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	89.4	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
13C2-PFOA	IS	87.2	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1
13C8-PFOS	IS	101	50 - 150		B8A0197	01-Feb-18	1.23 g	07-Feb-18 07:07	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB509-1718

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 13:53

Laboratory Data

Lab Sample: 1800140-09
Date Received: 19-Jan-18 09:28
% Solids: 88.4

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.309	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
PFOA	ND	0.201	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
PFOS	30.0	0.719	0.851	1.70		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
13C2-PFOA	IS	86.3	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1
13C8-PFOS	IS	93.7	50 - 150		B8A0197	01-Feb-18	1.33 g	07-Feb-18 07:19	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB510-0910

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:05

Laboratory Data

Lab Sample: 1800140-10
Date Received: 19-Jan-18 09:28
% Solids: 93.2

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.336	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
PFOA	ND	0.218	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
PFOS	5.18	0.781	0.925	1.85		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.7	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
13C2-PFOA	IS	91.2	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1
13C8-PFOS	IS	91.2	50 - 150		B8A0197	01-Feb-18	1.16 g	07-Feb-18 07:30	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB510-1415

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:10

Laboratory Data

Lab Sample: 1800140-11
Date Received: 19-Jan-18 09:28
% Solids: 92.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.321	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
PFOA	2.43	0.209	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
PFOS	ND	0.747	0.884	1.77		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
13C2-PFOA	IS	108	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1
13C8-PFOS	IS	96.5	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:16	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB511-1617

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:47

Laboratory Data

Lab Sample: 1800140-12
Date Received: 19-Jan-18 09:28
% Solids: 86.6

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.338	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
PFOA	2.53	0.220	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
PFOS	ND	0.787	0.931	1.86		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
13C2-PFOA	IS	103	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1
13C8-PFOS	IS	91.4	50 - 150		B8A0197	01-Feb-18	1.24 g	07-Feb-18 08:27	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS512-0001

VAL - PFAS

Client Data

Name:	Tetra Tech	Matrix:	Soil
Project:	112G08005-WE05	Date Collected:	17-Jan-18 08:58
SDG:	WE05		

Laboratory Data

Lab Sample:	1800140-13	Column:	BEH C18
Date Received:	19-Jan-18 09:28		
% Solids:	87.9		

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.344	0.949	1.90		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
PFOA	0.510	0.224	0.949	1.90	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
PFOS	1.52	0.802	0.949	1.90	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	121	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
13C2-PFOA	IS	98.7	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1
13C8-PFOS	IS	81.2	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 08:39	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB512-0708

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:25

Laboratory Data

Lab Sample: 1800140-14
Date Received: 19-Jan-18 09:28
% Solids: 94.5

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.315	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
PFOA	ND	0.205	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
PFOS	ND	0.733	0.868	1.74		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
13C2-PFOA	IS	86.6	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1
13C8-PFOS	IS	82.9	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 08:50	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB512-2223

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:30

Laboratory Data

Lab Sample: 1800140-15
Date Received: 19-Jan-18 09:28
% Solids: 85.2

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.355	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
PFOA	ND	0.231	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
PFOS	ND	0.827	0.979	1.96		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.0	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
13C2-PFOA	IS	90.5	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1
13C8-PFOS	IS	89.9	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:02	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SS513-0001

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05
Matrix: Soil
Date Collected: 17-Jan-18 09:35

Laboratory Data

Lab Sample: 1800140-16
Date Received: 19-Jan-18 09:28
% Solids: 80.3
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.380	1.05	2.09		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
PFOA	0.259	0.247	1.05	2.09	J	B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
PFOS	ND	0.884	1.05	2.09		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	135	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
13C2-PFOA	IS	101	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1
13C8-PFOS	IS	87.4	50 - 150		B8A0197	01-Feb-18	1.19 g	07-Feb-18 09:13	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-SB513-1819

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 09:55

Laboratory Data

Lab Sample: 1800140-17
Date Received: 19-Jan-18 09:28
% Solids: 94.7

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.314	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
PFOA	ND	0.204	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
PFOS	ND	0.732	0.866	1.73		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
13C2-PFOA	IS	86.5	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1
13C8-PFOS	IS	105	50 - 150		B8A0197	01-Feb-18	1.22 g	07-Feb-18 09:25	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-Dup01-20180116

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 16-Jan-18 12:00

Laboratory Data

Lab Sample: 1800140-18
Date Received: 19-Jan-18 09:28
% Solids: 95.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.318	0.877	1.75		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
PFOA	0.557	0.207	0.877	1.75	J	B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
PFOS	ND	0.741	0.877	1.75		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
13C2-PFOA	IS	83.4	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1
13C8-PFOS	IS	83.6	50 - 150		B8A0197	01-Feb-18	1.20 g	07-Feb-18 09:36	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: FT-Dup02-20180117

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
SDG: WE05

Matrix: Soil
Date Collected: 17-Jan-18 12:00

Laboratory Data

Lab Sample: 1800140-19
Date Received: 19-Jan-18 09:28
% Solids: 92.1

Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.326	0.897	1.79		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
PFOA	2.24	0.212	0.897	1.79		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
PFOS	0.975	0.758	0.897	1.79	J	B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
13C2-PFOA	IS	91.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1
13C8-PFOS	IS	96.3	50 - 150		B8A0197	01-Feb-18	1.21 g	07-Feb-18 09:48	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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.

APPENDIX C

SUPPORT DOCUMENTATION

NWIRP CALVERTON
SDG 1800140

SAMPLE ID	**FT-SB509-1718 (1800140-09)**	
COMPOUND	**PFOS**	
INTERNAL STANDARD (IS) CONCENTRATION		12.5
AREA		3.44E+03
IS AREA		1.10E+03
WEIGHT/VOLUME (WT)		1.1751
y = AREA*(IS CONC/IS AREA)	y=	39.09090909

INITIAL CALIBRATION CURVE (y) = -0.000459849*x^2+1.13076*x-0.0806935

QUADRATIC EQUATION: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ x= 34.99720269

-0.000459846*x^2 + 1.13076*x - 0.0806935 = 39.0909091
-0.0050479*x^2 + 1.55973*x -39.0102156 = 0

Where:

a	-0.000459846	
b	1.13076	
c	-39.0102156	
b^2-4ac	1.206863411	
SQRT(b^2-4ac)	1.098573353	
CONCENTRATION (x/WT)	29.78231869	µg/Kg
REPORTED CONCENTRATION	30	µg/Kg

Vista Analytical Laboratory

Rev'd: MM 2/12/2018 Rev'd: MM 2/13/2018

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-106.qld

Last Altered: Monday, February 12, 2018 09:52:02 Pacific Standard Time
Printed: Monday, February 12, 2018 09:52:45 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020118.mdb 06 Feb 2018 14:10:51
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.38e3	1.1751		2.98				
2	11	L-PFOA	413 > 368.7	2.32e2	1.01e4	1.1751		4.30	4.30	0.289	0.140	
3	16	L-PFOS	499 > 79.9	3.44e3	1.10e3	1.1751		5.11	4.80	39.2	30.0	
4	36	13C3-PFBS	302. > 98.8	1.38e3	1.11e4	1.1751	0.109	2.98	2.70	1.55	12.1	113.8
5	41	13C2-PFOA	414.9 > 369.7	1.01e4	1.09e4	1.1751	1.069	4.30	4.30	11.5	9.18	86.3
6	44	13C8-PFOS	507.0 > 79.9	1.10e3	1.12e3	1.1751	1.041	5.11	4.80	12.2	9.97	93.7
7	58	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	1.1751	1.000	3.48	3.19	12.5	10.6	100.0
8	60	13C8-PFOA	421.3 > 376	1.09e4	1.09e4	1.1751	1.000	4.30	4.30	12.5	10.6	100.0

AD 2/12/2018

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.992041
Calibration curve: -0.000459849 * x^2 + 1.13076 * x + -0.0806935
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.84	56.526	3338.892	0.212	0.3	3.4	NO	0.992	NO	MM
2	2	180205M1_3	Standard	0.500	4.84	154.741	3430.266	0.564	0.6	14.0	NO	0.992	NO	MM
3	3	180205M1_4	Standard	1.000	4.84	243.113	3144.039	0.967	0.9	-7.3	NO	0.992	NO	MM
4	4	180205M1_5	Standard	2.000	4.84	489.550	2693.524	2.272	2.1	4.1	NO	0.992	NO	MM
5	5	180205M1_6	Standard	5.000	4.84	1307.860	2976.156	5.493	4.9	-1.2	NO	0.992	NO	MM
6	6	180205M1_7	Standard	10.000	4.84	2306.796	2690.889	10.716	9.6	-4.1	NO	0.992	NO	MM
7	7	180205M1_8	Standard	50.000	4.84	10948.096	2548.329	53.702	48.5	-3.0	NO	0.992	NO	MM
8	8	180205M1_9	Standard	100.000	4.84	24292.385	3309.513	91.752	84.1	-15.9	NO	0.992	NO	MM
9	9	180205M1_10	Standard	250.000	4.84	60558.227	2663.184	284.238	284.3	13.7	NO	0.992	NO	MM
10	10	180205M1_11	Standard	500.000	4.84	96929.016	2762.147	438.649	482.8	-3.4	NO	0.992	NO	MM

Compound name: PFDA
Coefficient of Determination: R^2 = 0.997055
Calibration curve: -0.000427494 * x^2 + 1.25663 * x + -0.168259
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.14	379.653	12269.099	0.387	0.4	76.7	YES	0.997	NO	bbX
2	2	180205M1_3	Standard	0.500	5.13	481.648	10364.091	0.581	0.6	19.3	NO	0.997	NO	bb
3	3	180205M1_4	Standard	1.000	5.13	1081.577	10718.264	1.261	1.1	13.8	NO	0.997	NO	bb
4	4	180205M1_5	Standard	2.000	5.13	1656.883	10135.015	2.044	1.8	-11.9	NO	0.997	NO	bb
5	5	180205M1_6	Standard	5.000	5.13	3814.475	10742.281	4.439	3.7	-26.6	NO	0.997	NO	bb
6	6	180205M1_7	Standard	10.000	5.14	10452.378	10607.220	12.318	10.0	-0.3	NO	0.997	NO	bb
7	7	180205M1_8	Standard	50.000	5.13	44272.516	8189.372	67.576	54.9	9.9	NO	0.997	NO	bb
8	8	180205M1_9	Standard	100.000	5.14	94081.914	10135.432	116.031	95.6	-4.4	NO	0.997	NO	bb
9	9	180205M1_10	Standard	250.000	5.13	223254.516	9683.636	288.185	250.9	0.4	NO	0.997	NO	bb
10	10	180205M1_11	Standard	500.000	5.13	466431.188	9066.951	643.038	660.1	32.0	YES	0.997	NO	bbX

ANALYTE	ORIGINAL	DUPLICATE	RL	RPD	RPD > 50%	ORIGINAL SAMPLE CONC >2xRL	DUPLICATE SAMPLE CONC >2xRL	DIFFERENCE >2xRL
PENTADECAFLUOROOCTANOIC ACID	0.497	0.577	1.75	14.90	FALSE	FALSE	FALSE	FALSE

FT-Dup01-20180218/FT-SB504-2022

PENTADECAFLUOROOCTANOIC ACID	2.43	2.24	1.79	8.14	FALSE	FALSE	FALSE	FALSE
PERFLUOROOCTANE SULFONIC ACID	0.884	0.975	1.79	9.79	FALSE	FALSE	FALSE	FALSE

FT-Dup02-20180218/FT-SB504-2023

SDG 1800140

1800140 6.6°C

TETRA TECH

CHAIN OF CUSTODY

Project No:	Facility:	Project Manger:	Phone:	Laboratory Name and Contact:
112G08005-WE05	NWIRP Calverton Site 2	Kristi Francisco	757-466-4902	Vista Karen Volpendesta

Samplers:	Field Ops. Leader:	Phone:	Address:
Jacob Birkett Beau Benfield	Jacob Birkett	757-814-9916	1104 Windfield Way
	Fed Ex Airbill Number: 8102 9107 0959		City, State, Zip: El Dorado Hills, CA 95762
	Container Type: Plastic (P) or Glass (G)	P	
	Preservative Used:	None	

Date Year: 2018	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	PFAS method 537 (ONLY PFOA, PFOS, PFBS)	Comments
1/16	1505	FT-SS501-0001	S501	0	1	SO	G	1		1	
1/16	1555	FT-SS502-0001	S502	0	1	SO	G	1		1	
1/17	1045	FT-SS503-0001	S503	0	1	SO	G	1		1	
1/16	1443	FT-SB504-2022	S504	4	22	SO	G	1		1	
1/16	1536	FT-SB505-1618	S505	5	18	SO	G	~~1~~ 3		3	Run MS/MSD
1/16	1208	FT-SB506-2022	S506	6	22	SO	G	1		1	
1/16	1308	FT-SB507-1819	S507	18	19	SO	G	1		1	
1/18	0845	FT-SB508-1617	S508	16	17	SO	G	1		1	
1/16	1353	FT-SB509-1718	S509	17	18	SO	G	1		1	
1/17	1205	FT-SB510-0910	S510	9	10	SO	G	1		1	
1/17	1210	FT-SB510-1415	S510	14	15	SO	G	1		1	
1/17	1247	FT-SB511-1617	S511	16	17	SO	G	1		1	
1/17	0858	FT-SS512-0001	S512	0	1	SO	G	1		1	
1/17	0925	FT-SB512-0708	S512	7	8	SO	G	1		1	
1/17	0930	FT-SB512-2223	S512	22	23	SO	G	1		1	
1/17	0935	FT-SS513-0001	S513	0	1	SO	G	1		1	
1/17	0955	FT-SB513-1819	S513	18	19	SO	G	1		1	

1. Relinquished By:	Date:	Time:	1. Received By:	Date:	Time:
Jacob Birkett	01/18/18	1530	FedEx		
2. Relinquished By: Ashwini Prakash	Date: 01/19/18	Time: 1018	2. Received By:	Date:	Time:

EXACT COPY OF ORIGINAL
Init BJB 1/19/18

1800140

TETRA TECH

CHAIN OF CUSTODY

Page 2 of 2

Project No:	Facility:	Project Manger:	Phone:	Laboratory Name and Contact:
112G08005-WE05	NWIRP Calverton Site 2	Kristi Francisco	757-466-4902	Vista Karen Volpendesta
Samplers: Jacob Birkett, Beau Benfield		Field Ops. Leader: Jacob Birkett	Phone: 757-814-9916	Address: 1104 Windfield Way
		Fed Ex Airbill Number: 8102 9107 0959		City, State, Zip: El Dorado Hills, CA 95762
		Container Type: Plastic (P) or Glass (G)	P	P	P
		Preservative Used:	None	None	Trizma

Date Year: 2018	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	PFAS method 537 (ONLY PFOA, PFOS, PFBS)	PFAS method 537 modified: List 14 compounds	PFAS method 537 V1.1: List 14 compounds	Comments
* 1/18	1030	FT-TW507-1924	S507	19	24	GW	G	6			6		Run MSMSD
* 1/18	0815	FT-TW510-1520	S510	15	20	GW	G	2			2		
* 1/18	0918	FT-TW511-1722	S511	17	22	GW	G	2			2		
* 1/18	0950	FT-TW513-2025	S513	20	25	GW	G	2			2		
1/16	1200	FT-Dup01-20180116	--	--	--	SO	G	1		1			Duplicate
1/17	1200	FT-Dup02-20180117	--	--	--	SO	G	1		1			Duplicate
* 1/18	0800	FT-Dup03-20180118	--	--	--	GW	G	2			2		Duplicate
* 1/18	1030	FT-TW507-1924-FRB	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/16	1600	FT-EB01-20180116	--	--	--	QC	G	2			2		Equipment Blank: Cutting shoe
* 1/17	1105	FT-EB02-20180117	--	--	--	QC	G	2			2		Equipment Blank: Cutting shoe/liner
* 1/18	1600	FT-EB03-20180118	--	--	--	QC	G	2			2		Equipment Blank: ~~Cutting shoe~~ point holder
* 1/16	1605	FT-FRB01-20180116	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/17	1140	FT-FRB02-20180117	--	--	--	QC	G	2			2		Field Reagent Blank
* 1/17	1100	FT-FB02-20180117	--	--	--	QC	G	2				2	Field Blank: drilling water tank

JBB 1-18-18

1. Relinquished By:	Date:	Time:	1. Received By:	Date:	Time:
Jacob Birkett [signature]	01/18/18	1530	FedEx		
2. Relinquished By: Ashweeni Prakash [signature]	01/19/18	1018	2. Received By:		

Note there is no FT-FB01 sample

* WO# 1800153

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1800140 **TAT** Std

Samples Arrival:	**Date/Time** 01/19/18 0928	**Initials:** AP	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 01/20/18 1135	**Initials:** BSB	**Location:** WR-2 **Shelf/Rack:** F4

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

Temp °C: 6.7 (uncorrected)	**Time:** 1015	**Thermometer ID:** IR-4
Temp °C: 6.6 (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 # 8102 9107 0959	✓		
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:

SDG Number WE05
Vista Work Order No. 1800140
Case Narrative

Sample Condition on Receipt:

Nineteen soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

VAL-PFAS

The samples were extracted and analyzed for a selected list of PFAS using VAL Method PFAS.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The extracts of the following samples, as well as the OPR, Matrix Spike and Matrix Spike Duplicate, were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria:

Laboratory ID	Sample Name
1800140-05	FT-SB505-1618
1800140-06	FT-SB506-2022
1800140-07	FT-SB507-1819
1800140-09	FT-SB509-1718
1800140-13	FT-SS512-0001
1800140-14	FT-SB512-0708
1800140-15	FT-SB512-2223
1800140-17	FT-SB513-1819
1800140-18	FT-Dup01-20180116

The results were similar in the second injections. The results from the original injections have been reported.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "FT-SB505-1618". The MS/MSD recoveries and RPDs were within the acceptance criteria.

In addition, the laboratory QC officer must read and sign a copy of the Quality Assurance Review Form displayed on the next page of this Attachment. Electronic deliverables are not considered to be complete without the accompanying Quality Assurance Review Form.

I Anna Helalc, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (916) 673 1520 If there are any questions or problems with the enclosed electronic deliverables.

Signature: Anna Title: QA Manager Date: 02/14/2017

Revision 9
ISG
08/18/16

Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1800140-01	FT-SS501-0001		16-Jan-18 15:05	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-02	FT-SS502-0001		16-Jan-18 15:55	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-03	FT-SS503-0001		17-Jan-18 10:45	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-04	FT-SB504-2022		16-Jan-18 14:43	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-05	FT-SB505-1618	MS/MSD	16-Jan-18 15:36	19-Jan-18 09:28	HDPE Jar, 6 oz
					HDPE Jar, 6 oz
					HDPE Jar, 6 oz
1800140-06	FT-SB506-2022		16-Jan-18 12:08	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-07	FT-SB507-1819		16-Jan-18 13:08	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-08	FT-SB508-1617		18-Jan-18 08:45	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-09	FT-SB509-1718		16-Jan-18 13:53	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-10	FT-SB510-0910		17-Jan-18 12:05	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-11	FT-SB510-1415		17-Jan-18 12:10	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-12	FT-SB511-1617		17-Jan-18 12:47	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-13	FT-SS512-0001		17-Jan-18 08:58	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-14	FT-SB512-0708		17-Jan-18 09:25	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-15	FT-SB512-2223		17-Jan-18 09:30	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-16	FT-SS513-0001		17-Jan-18 09:35	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-17	FT-SB513-1819		17-Jan-18 09:55	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-18	FT-Dup01-20180116		16-Jan-18 12:00	19-Jan-18 09:28	HDPE Jar, 6 oz
1800140-19	FT-Dup02-20180117		17-Jan-18 12:00	19-Jan-18 09:28	HDPE Jar, 6 oz

DATA QUALIFIERS & ABBREVIATIONS

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

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

Sample ID: Method Blank

VAL - PFAS

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
Matrix: Solid

Laboratory Data

Lab Sample: B8A0197-BLK1
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.363	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
PFOA	ND	0.236	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
PFOS	ND	0.845	1.00	2.00		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	87.9	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
13C2-PFOA	IS	85.8	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1
13C8-PFOS	IS	89.3	50 - 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:12	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.
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: OPR **VAL - PFAS**

Client Data

Name: Tetra Tech
Project: 112G08005-WE05
Matrix: Solid

Laboratory Data

Lab Sample: B8A0197-BS1
Column: BEH C18

Analyte	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	8.91	10.0	89.1	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
PFOA	10.7	10.0	107	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
PFOS	10.4	10.0	104	70-130		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
Labeled Standards	**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C3-PFBS	IS		111	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
13C2-PFOA	IS		90.8	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1
13C8-PFOS	IS		88.6	50- 150		B8A0197	01-Feb-18	1.00 g	07-Feb-18 05:01	1

Sample ID: FT-SB505-1618

VAL - PFAS

Name:	Tetra Tech	Lab Sample:	B8A0197-MS1/B8A0197-MSD1	Source Lab Sample:	1800140-05
Project:	112G08005-WE05	QC Batch:	B8A0197	Date Extracted:	01-Feb-18
Matrix:	Solid	Samp Size:	1.27/1.21 g	Column:	BEH C18

Analyte	Sample (ng/g)	MS (ng/g)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/g)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	7.70	8.33	92.4		9.52	8.75	109	16.5		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1
PFOA	0.389	10.4	8.33	120		10.3	8.75	113	6.01		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1
PFOS	ND	8.69	8.33	96.2		8.54	8.75	89.9	6.77		70-130	30	07-Feb-18 05:24	1	07-Feb-18 05:35	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	104		107		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1
13C2-PFOA	IS	95.1		87.7		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1
13C8-PFOS	IS	90.4		93.8		50-150	07-Feb-18 05:24	1	07-Feb-18 05:35	1

Process Sheet

Workorder: 1800140

Prep Expiration: 2018-Mar-17
Client: Tetra Tech

Workorder Due: 09-Feb-18 00:00

TAT: 21

Method: **VAL - PFAS DoD (LOQ as RL)**
Matrix: **Solid**

Prep Batch: B8A0197

Also run: **Percent Solids**
Version: PFOA, PFOS, PFBS Only (3 Analytes)
DoD: DoD QSM 5.1

Prep Data Entered: 02/05/18 MA
Date and Initials

Initial Sequence: S8B0013

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1800140-01	A	☑	☑	FT-SS501-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-02		☑	☑	FT-SS502-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-03		☑	☑	FT-SS503-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-04		☑	☑	FT-SB504-2022		WR-2 F-4	HDPE Jar, 6 oz
1800140-05		☑	☑	FT-SB505-1618	**MS/MSD**	WR-2 F-4	HDPE Jar, 6 oz
1800140-06		☑	☑	FT-SB506-2022		WR-2 F-4	HDPE Jar, 6 oz
1800140-07		☑	☑	FT-SB507-1819		WR-2 F-4	HDPE Jar, 6 oz
1800140-08		☑	☑	FT-SB508-1617		WR-2 F-4	HDPE Jar, 6 oz
1800140-09		☑	☑	FT-SB509-1718		WR-2 F-4	HDPE Jar, 6 oz
1800140-10		☑	☑	FT-SB510-0910		WR-2 F-4	HDPE Jar, 6 oz
1800140-11		☑	☑	FT-SB510-1415		WR-2 F-4	HDPE Jar, 6 oz
1800140-12		☑	☑	FT-SB511-1617		WR-2 F-4	HDPE Jar, 6 oz
1800140-13		☑	☑	FT-SS512-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-14		☑	☑	FT-SB512-0708		WR-2 F-4	HDPE Jar, 6 oz
1800140-15		☑	☑	FT-SB512-2223		WR-2 F-4	HDPE Jar, 6 oz
1800140-16		☑	☑	FT-SS513-0001		WR-2 F-4	HDPE Jar, 6 oz
1800140-17		☑	☑	FT-SB513-1819		WR-2 F-4	HDPE Jar, 6 oz
1800140-18		☑	☑	FT-Dup01-20180116		WR-2 F-4	HDPE Jar, 6 oz
1800140-19		☑	☑	FT-Dup02-20180117		WR-2 F-4	HDPE Jar, 6 oz

WO Comments: **Provide all analytical runs.**
MS/MSD per batch, if MS/MSD is not provided - LCS/LCSD.

Pre-Prep Check Out: JR 2.1.18
Pre-Prep Check In: JR 2.1.18

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: JR 2.1.18
Spike Reconciled Initals/Date: JR 2.1.18
VialBoxID: La-tea-da 2

PREPARATION BENCH SHEET

Matrix: Solid

B8A0197

Chemist: KC

Method: VAL - PFAS DoD (LOQ as RL)

Prepared using: LCMS - Sonication/SPE Extraction

Prep Date/Time: 31-Jan-18 10:04 ~~2-1-18~~ 2-1-18 1735 JTC

BalanceID: HRMS-8

VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	RS CHEM/WIT DATE
B8A0197-BLK1	(1.00)	KC JTC 2/1/18	JTC 2-1-18	MA 2-2-18	MA 2-2-18	KC MA 2/2/18
B8A0197-BS1	↓	↓	↓	↓	↓	↓
B8A0197-MS1 1800140-05	1.27					
B8A0197-MSD1 1800140-05	1.21					
1800140-01	1.23					
1800140-02	1.17					
1800140-03	1.34					
1800140-04	1.26					
1800140-05	1.21					
1800140-06	1.26					
1800140-07	1.27					
1800140-08	1.23					
1800140-09	1.33					
1800140-10	1.16					
1800140-11	1.22					
1800140-12	1.24	↓	↓	↓	↓	↓

IS: 17L2601, 10µL (V4)

IS SUP: NA

NS: 17L2103, 10µL (V3)

RS: 17L2332, 10µL (V4)

Ext SOLV: 1:1 MeOH/ACN

SPE Chem: Strata X-AW 33µm 200mg/6mL

Ele SOLV: 0.5% NH4OH in MeOH, MeOH

Final Volume(s): 1mL

Notes:

PREPARATION BENCH SHEET

Matrix: Solid

B8A0197

Chemist: KC

Method: VAL - PFAS DoD (LOQ as RL)

Prepared using: LCMS - Sonication/SPE Extraction

Prep Date/Time: 31-Jan-18 10:04 2·1·18 17:35 HC

BalanceID: HRMS-8

VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	RS CHEM/WIT DATE
1800140-13	1.20	KC HC 2/1/18	HC 2·1·18	MA 2·2·18	MA 2·2·18	KC MA 2/2/18
1800140-14	1.22					
1800140-15	1.20					
1800140-16	1.19					
1800140-17	1.22					
1800140-18	1.20					
1800140-19	1.21					

IS: 17L2601, 10µL (V4)

IS SUP: NA

NS: 17L2103, 10µL (V3)

RS: 17L2332, 10µL (V4)

Ext SOLV: 1:1 MeOH/ACN

SPE Chem: Strata X-AW 33µm 200mg 6mL

Ele SOLV: 0.5% NH4OH in MeOH, MeOH

Final Volume(s): 1mL

Notes:

Batch: B8A0197

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1800140-01	1.23	85.96491	**1.0574**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-02	1.17	89.48547	**1.0470**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-03	1.34	81.35049	**1.0901**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-04	1.26	94.67787	**1.1929**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-05	1.21	94.47852	**1.1432**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-06	1.26	95.52716	**1.2036**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-07	1.27	94.44444	**1.1994**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-08	1.23	95.07772	**1.1695**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-09	1.33	88.35443	**1.1751**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-10	1.16	93.23944	**1.0816**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-11	1.22	92.69841	**1.1309**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-12	1.24	86.62614	**1.0742**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-13	1.2	87.8531	**1.0542**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-14	1.22	94.47115	**1.1525**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-15	1.2	85.16321	**1.0220**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-16	1.19	80.28986	**0.9554**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-17	1.22	94.68437	**1.1551**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-18	1.2	95.07042	**1.1408**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
1800140-19	1.21	92.14092	**1.1149**	1000	01-Feb-18 17:35	KC			Soil	VAL - PFAS DoD (LOQ as
B8A0197-BLK1	1	100.0000	1.0000	1000	01-Feb-18 17:35	KC				QC
B8A0197-BS1	1	100.0000	1.0000	1000	01-Feb-18 17:35	KC	17L2103	10		QC
B8A0197-MS1	1.27	94.47852	1.2000	1000	01-Feb-18 17:35	KC	17L2103	10		QC
B8A0197-MSD1	1.21	94.47852	1.143	1000	01-Feb-18 17:35	KC	17L2103	10		QC

✓ MA 02105/18

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B8A0196

Analyst: 7R **Test Code:** %Moist/%Solids

Analyte: **Units:** %

Dried at 110°C+/-5°C

Data Entry Verified by: (Initial and Date) NA

Inst HR MS-8

Date/Time IN: 2·1·18 15:49 Date/Time OUT 2·2·18 8:00

	B	C	D	E	F	G	H	K	M	N	O	P	Q
				Intial and Date:	~~7R~~ 2·1·18	7R 2·2·18						2·1·18 7R	
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH Before	pH After	Acid Added	Cl-	Visual Inspection
NA	1800140-01		Sample	1.29	4.71	4.23			NA	NA	NA		damp sand
	1800140-02		Sample	1.30	5.77	5.30							damp sand
	1800140-03		Sample	1.30	4.41	3.83							wet sand
	1800140-04		Sample	1.30	4.87	4.68							dampsand
	1800140-05		Sample	1.31	4.57	4.39							damp sand
	1800140-06		Sample	1.27	4.40	4.26							damp sand
	1800140-07		Sample	1.29	5.07	4.86							damp sand
	1800140-08		Sample	1.26	5.12	4.93							dampsand
	1800140-09		Sample	1.30	5.25	4.79			7R				wet sand
	1800140-10		Sample	1.28	4.83	4.59			2·1·18				damp sand
	1800140-11		Sample	1.30	4.45	4.22							dampsand
	1800140-12		Sample	1.32	4.61	4.17							dampsand
	1800140-13		Sample	1.28	4.82	4.39							Sand/soil
	1800140-14		Sample	1.28	5.44	5.21							sand
	1800140-15		Sample	1.26	4.63	4.13							dampsand
	1800140-16		Sample	1.29	4.74	4.06							sand/soil
	1800140-17		Sample	1.29	4.30	4.14							sand
	1800140-18		Sample	1.29	4.13	3.99							sand
	1800140-19		Sample	1.29	4.98	4.69							sand

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B8A0196

Analyst: FR **Test Code:** %Moist/%Solids

Analyte: Dried at 110°C+/-5°C **Units:** %

Data Entry Verified by: (Initial and Date) FR 2.2.18

Inst: HRMS-8

Date/Time IN: 2/1/18 15:49 Date/Time OUT 2/2/18 8:00

	B	C	D	E	F	G	H	K	M	N	O	P	Q
				Intial and Date:	FR 2/1/18	FR 2/2/18			FR 2/1/18				FR 2/1/18
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH Before	pH After	Acid Added	Cl-	Visual Inspection
NA	1800140-01		Sample	1.2900	4.7100	4.2300	2.9400	85.96	NA	NA	NA	NA	See Attachment
NA	1800140-02		Sample	1.3000	5.7700	5.3000	4.0000	89.49	NA	NA	NA	NA	See Attachment
NA	1800140-03		Sample	1.3000	4.4100	3.8300	2.5300	81.35	NA	NA	NA	NA	See Attachment
NA	1800140-04		Sample	1.3000	4.8700	4.6800	3.3800	94.68	NA	NA	NA	NA	See Attachment
NA	1800140-05		Sample	1.3100	4.5700	4.3900	3.0800	94.48	NA	NA	NA	NA	See Attachment
NA	1800140-06		Sample	1.2700	4.4000	4.2600	2.9900	95.53	NA	NA	NA	NA	See Attachment
NA	1800140-07		Sample	1.2900	5.0700	4.8600	3.5700	94.44	NA	NA	NA	NA	See Attachment
NA	1800140-08		Sample	1.2600	5.1200	4.9300	3.6700	95.08	NA	NA	NA	NA	See Attachment
NA	1800140-09		Sample	1.3000	5.2500	4.7900	3.4900	88.35	NA	NA	NA	NA	See Attachment
NA	1800140-10		Sample	1.2800	4.8300	4.5900	3.3100	93.24	NA	NA	NA	NA	See Attachment
NA	1800140-11		Sample	1.3000	4.4500	4.2200	2.9200	92.70	NA	NA	NA	NA	See Attachment
NA	1800140-12		Sample	1.3200	4.6100	4.1700	2.8500	86.63	NA	NA	NA	NA	See Attachment
NA	1800140-13		Sample	1.2800	4.8200	4.3900	3.1100	87.85	NA	NA	NA	NA	See Attachment
NA	1800140-14		Sample	1.2800	5.4400	5.2100	3.9300	94.47	NA	NA	NA	NA	See Attachment
NA	1800140-15		Sample	1.2600	4.6300	4.1300	2.8700	85.16	NA	NA	NA	NA	See Attachment
NA	1800140-16		Sample	1.2900	4.7400	4.0600	2.7700	80.29	NA	NA	NA	NA	See Attachment
NA	1800140-17		Sample	1.2900	4.3000	4.1400	2.8500	94.68	NA	NA	NA	NA	See Attachment
NA	1800140-18		Sample	1.2900	4.1300	3.9900	2.7000	95.07	NA	NA	NA	NA	See Attachment
NA	1800140-19		Sample	1.2900	4.9800	4.6900	3.4000	92.14	NA	NA	NA	NA	See Attachment

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, February 06, 2018 09:00:10 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:00:46 Pacific Standard Time

INITIAL CALIBRATION

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 08:49:29

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180205M1_1	IPA	05-Feb-18	11:53:14
2	180205M1_2	ST180205M1-1 PFC CS-2 18A3007	05-Feb-18	12:04:38
3	180205M1_3	ST180205M1-2 PFC CS-1 18A3008	05-Feb-18	12:16:04
4	180205M1_4	ST180205M1-3 PFC CS0 18A3009	05-Feb-18	12:27:31
5	180205M1_5	ST180205M1-4 PFC CS1 18A3010	05-Feb-18	12:38:58
6	180205M1_6	ST180205M1-5 PFC CS2 18A3011	05-Feb-18	12:50:27
7	180205M1_7	ST180205M1-6 PFC CS3 18A3012	05-Feb-18	13:01:56
8	180205M1_8	ST180205M1-7 PFC CS4 18A3013	05-Feb-18	13:13:25
9	180205M1_9	ST180205M1-8 PFC CS5 18A3014	05-Feb-18	13:24:55
10	180205M1_10	ST180205M1-9 PFC CS6 18A3015	05-Feb-18	13:36:22
11	180205M1_11	ST180205M1-10 PFC CS7 18A3016	05-Feb-18	13:47:52
12	180205M1_12	IPA	05-Feb-18	13:59:22
13	180205M1_13	ICV180205M1-1 PFC ICV 18A3006	05-Feb-18	14:10:49

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	34	0.9988	NO	
2	2	PFPeA	35	0.9996	NO	
3	3	PFBS	36	0.9993	NO	
4	4	4:2 FTS	36	0.9994	NO	
5	5	PFHxA	37	0.9999	NO	
6	6	PFPeS	36	0.9943	NO	
7	7	PFHpA	38	0.9985	NO	
8	8	L-PFHxS	39	0.9993	NO	
9	10	6:2 FTS	41	0.9990	NO	
10	11	L-PFOA	41	0.9949	NO	
11	13	PFHpS	44	0.9989	NO	
12	14	PFNA	42	0.9997	NO	
13	15	PFOSA	43	0.9925	NO	
14	16	L-PFOS	44	0.9920	NO	
15	18	PFDA	45	0.9971	NO	
16	19	8:2 FTS	41	0.9991	NO	
17	20	PFNS	44	0.9930	NO	
18	21	N-MeFOSAA	47	0.9988	NO	
19	22	N-EtFOSAA	48	0.9973	NO	
20	23	PFUdA	49	0.9976	NO	
21	24	PFDS	50	0.9958	NO	
22	25	PFDoA	50	0.9991	NO	
23	26	N-MeFOSA	51	0.9949	NO	
24	27	PFTrDA	52	0.9939	NO	
25	28	PFTeDA	52	0.9950	NO	
26	29	N-EtFOSA	53	0.9995	NO	
27	30	PFHxDA	54	0.9987	NO	
28	31	PFODA	54	0.9959	NO	
29	32	N-MeFOSE	55	0.9997	NO	
30	33	N-EtFOSE	56	0.9974	NO	
31	34	13C3-PFBA	57		NO	3.626

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Name: 180205M1_2, Date: 05-Feb-2018, Time: 12:04:38, ID: ST180205M1-1 PFC CS-2 18A3007, Description: PFC CS-2 18A3007

	#	Name	IS#	CoD	CoD Flag	%RSD
32	35	13C3-PFPeA	58		NO	7.854
33	36	13C3-PFBS	58		NO	5.639
34	37	13C2-PFHxA	58		NO	5.027
35	38	13C4-PFHpA	58		NO	5.049
36	39	18O2-PFHxS	59		NO	7.288
37	40	13C2-6:2 FTS	60		NO	19.106
38	41	13C2-PFOA	60		NO	10.435
39	42	13C5-PFNA	61		NO	12.887
40	43	13C8-PFOSA	64		NO	5.536
41	44	13C8-PFOS	62		NO	8.115
42	45	13C2-PFDA	63		NO	12.125
43	46	13C2-8:2 FTS	58		NO	14.021
44	47	d3-N-MeFOSAA	64		NO	9.072
45	48	d5-N-EtFOSAA	64		NO	12.398
46	49	13C2-PFUdA	64		NO	18.120
47	50	13C2-PFDoA	64		NO	10.818
48	51	d3-N-MeFOSA	64		NO	8.869
49	52	13C2-PFTeDA	64		NO	16.188
50	53	d5-N-ETFOSA	64		NO	7.909
51	54	13C2-PFHxDA	64		NO	17.686
52	55	d7-N-MeFOSE	64		NO	12.059
53	56	d9-N-EtFOSE	64		NO	16.572
54	57	13C4-PFBA	57		NO	0.000
55	58	13C5-PFHxA	58		NO	0.000
56	59	13C3-PFHxS	59		NO	0.000
57	60	13C8-PFOA	60		NO	0.000
58	61	13C9-PFNA	61		NO	0.000
59	62	13C4-PFOS	62		NO	0.000
60	63	13C6-PFDA	63		NO	0.000
61	64	13C7-PFUdA	64		NO	0.000
62	72	13C2-4:2 FTS	58		NO	47.367

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

Last Altered: Tuesday, February 06, 2018 09:06:52 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:08:40 Pacific Standard Time

Compound name: PFPeA

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10	180205M1_11	Standard	500.000	2.41	372788.688	9816.358	474.703	491.9	-1.6	NO	1.000	NO	bb

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999344
Calibration curve: -0.00019974 * x^2 + 1.89439 * x + -0.0235196
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	2.69	55.497	1489.336	0.466	0.3	3.3	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	2.70	96.497	1446.984	0.834	0.5	-9.5	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	2.69	233.299	1439.827	2.025	1.1	8.2	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	2.69	425.275	1296.600	4.100	2.2	8.9	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	2.69	977.682	1378.333	8.867	4.7	-6.1	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	2.69	2159.505	1425.968	18.930	10.0	0.2	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	2.69	9767.403	1371.053	89.050	47.3	-5.5	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	2.69	20174.291	1375.398	183.350	97.8	-2.2	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	2.69	48242.711	1263.901	477.121	258.9	3.6	NO	0.999	NO	bb
10	10	180205M1_11	Standard	500.000	2.69	85168.273	1195.437	890.556	496.1	-0.8	NO	0.999	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999379
Calibration curve: -0.000386556 * x^2 + 1.68052 * x + -0.0388557
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	3.10	57.992	1489.336	0.487	0.3	25.1	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	3.10	83.684	1446.984	0.723	0.5	-9.3	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	3.10	188.998	1439.827	1.641	1.0	-0.0	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	3.09	286.151	1296.600	2.759	1.7	-16.7	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	3.10	847.487	1378.333	7.686	4.6	-8.0	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	3.10	2053.220	1425.968	17.998	10.8	7.6	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	3.10	9540.633	1371.053	86.983	52.4	4.8	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.994873
Calibration curve: -0.000138522 * x^2 + 0.942967 * x + 0.133643
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.33	397.929	14371.031	0.346	0.2	-9.9	NO	0.995	NO	bb
2	2	180205M1_3	Standard	0.500	4.33	595.393	12959.139	0.574	0.5	-6.5	NO	0.995	NO	bb
3	3	180205M1_4	Standard	1.000	4.33	1085.234	12753.312	1.064	1.0	-1.4	NO	0.995	NO	bb
4	4	180205M1_5	Standard	2.000	4.33	2056.617	12828.711	2.004	2.0	-0.8	NO	0.995	NO	bb
5	5	180205M1_6	Standard	5.000	4.33	5293.996	11953.538	5.536	5.7	14.7	NO	0.995	NO	bb
6	6	180205M1_7	Standard	10.000	4.33	10151.471	11925.250	10.641	11.2	11.6	NO	0.995	NO	bb
7	7	180205M1_8	Standard	50.000	4.33	46435.820	12257.613	47.354	50.5	0.9	NO	0.995	NO	bb
8	8	180205M1_9	Standard	100.000	4.33	82386.273	13066.736	78.813	84.5	-15.5	NO	0.995	NO	bb
9	9	180205M1_10	Standard	250.000	4.33	242828.266	12344.222	245.893	271.4	8.6	NO	0.995	NO	bb
10	10	180205M1_11	Standard	500.000	4.33	391155.906	11359.581	430.425	491.9	-1.6	NO	0.995	NO	bb

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998876
Calibration curve: -0.00320317 * x^2 + 1.18129 * x + -0.0785414
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, 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	180205M1_2	Standard	0.250	4.44	38.241	3338.892	0.143	0.2	-24.9	NO	0.999	NO	MM
2	2	180205M1_3	Standard	0.500	4.44	123.096	3430.266	0.449	0.4	-10.6	NO	0.999	NO	bb
3	3	180205M1_4	Standard	1.000	4.44	272.994	3144.039	1.085	1.0	-1.2	NO	0.999	NO	bb
4	4	180205M1_5	Standard	2.000	4.43	523.749	2693.524	2.431	2.1	6.8	NO	0.999	NO	bb
5	5	180205M1_6	Standard	5.000	4.44	1345.688	2976.156	5.652	4.9	-1.7	NO	0.999	NO	bb
6	6	180205M1_7	Standard	10.000	4.44	2624.799	2690.889	12.193	10.7	7.0	NO	0.999	NO	bb
7	7	180205M1_8	Standard	50.000	4.44	10141.354	2548.329	49.745	48.6	-2.8	NO	0.999	NO	bb
8	8	180205M1_9	Standard	100.000	4.44	22917.609	3309.513	86.560	101.0	1.0	NO	0.999	NO	bb
9	9	180205M1_10	Standard	250.000	4.44	60645.820	2663.184	284.649			NO	0.999	NO	bbXI
10	10	180205M1_11	Standard	500.000	4.44	98782.766	2762.147	447.038			NO	0.999	NO	bbXI

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.992041
Calibration curve: -0.000459849 * x^2 + 1.13076 * x + -0.0806935
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	4.84	56.526	3338.892	0.212	0.3	3.4	NO	0.992	NO	MM
2	2	180205M1_3	Standard	0.500	4.84	154.741	3430.266	0.564	0.6	14.0	NO	0.992	NO	MM
3	3	180205M1_4	Standard	1.000	4.84	243.113	3144.039	0.967	0.9	-7.3	NO	0.992	NO	MM
4	4	180205M1_5	Standard	2.000	4.84	489.550	2693.524	2.272	2.1	4.1	NO	0.992	NO	MM
5	5	180205M1_6	Standard	5.000	4.84	1307.860	2976.156	5.493	4.9	-1.2	NO	0.992	NO	MM
6	6	180205M1_7	Standard	10.000	4.84	2306.796	2690.889	10.716	9.6	-4.1	NO	0.992	NO	MM
7	7	180205M1_8	Standard	50.000	4.84	10948.096	2548.329	53.702	48.5	-3.0	NO	0.992	NO	MM
8	8	180205M1_9	Standard	100.000	4.84	24292.385	3309.513	91.752	84.1	-15.9	NO	0.992	NO	MM
9	9	180205M1_10	Standard	250.000	4.84	60558.227	2663.184	284.238	284.3	13.7	NO	0.992	NO	MM
10	10	180205M1_11	Standard	500.000	4.84	96929.016	2762.147	438.649	482.8	-3.4	NO	0.992	NO	MM

Compound name: PFDA
Coefficient of Determination: R^2 = 0.997055
Calibration curve: -0.000427494 * x^2 + 1.25663 * x + -0.168259
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, 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	180205M1_2	Standard	0.250	5.14	379.653	12269.099	0.387	0.4	76.7	YES	0.997	NO	bbX
2	2	180205M1_3	Standard	0.500	5.13	481.648	10364.091	0.581	0.6	19.3	NO	0.997	NO	bb
3	3	180205M1_4	Standard	1.000	5.13	1081.577	10718.264	1.261	1.1	13.8	NO	0.997	NO	bb
4	4	180205M1_5	Standard	2.000	5.13	1656.883	10135.015	2.044	1.8	-11.9	NO	0.997	NO	bb
5	5	180205M1_6	Standard	5.000	5.13	3814.475	10742.281	4.439	3.7	-26.6	NO	0.997	NO	bb
6	6	180205M1_7	Standard	10.000	5.14	10452.378	10607.220	12.318	10.0	-0.3	NO	0.997	NO	bb
7	7	180205M1_8	Standard	50.000	5.13	44272.516	8189.372	67.576	54.9	9.9	NO	0.997	NO	bb
8	8	180205M1_9	Standard	100.000	5.14	94081.914	10135.432	116.031	95.6	-4.4	NO	0.997	NO	bb
9	9	180205M1_10	Standard	250.000	5.13	223254.516	9683.636	288.185	250.9	0.4	NO	0.997	NO	bb
10	10	180205M1_11	Standard	500.000	5.13	466431.188	9066.951	643.038	660.1	32.0	YES	0.997	NO	bbX

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Compound name: 13C3-PFPeA
Response Factor: 0.867829
RRF SD: 0.0681601, Relative SD: 7.8541
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	2.41	11632.453	14207.144	10.235	11.8	-5.7	NO		NO	bb
2	2	180205M1_3	Standard	12.500	2.42	11389.154	14180.340	10.040	11.6	-7.5	NO		NO	bb
3	3	180205M1_4	Standard	12.500	2.41	11172.025	12421.671	11.242	13.0	3.6	NO		NO	bb
4	4	180205M1_5	Standard	12.500	2.41	11007.866	12960.338	10.617	12.2	-2.1	NO		NO	bb
5	5	180205M1_6	Standard	12.500	2.41	10975.869	12194.845	11.251	13.0	3.7	NO		NO	bb
6	6	180205M1_7	Standard	12.500	2.41	11146.144	12713.140	10.959	12.6	1.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	2.41	10337.492	12854.285	10.053	11.6	-7.3	NO		NO	bb
8	8	180205M1_9	Standard	12.500	2.41	10256.807	13082.049	9.800	11.3	-9.7	NO		NO	bb
9	9	180205M1_10	Standard	12.500	2.41	10776.180	10958.029	12.293	14.2	13.3	NO		NO	bb
10	10	180205M1_11	Standard	12.500	2.42	9816.358	10234.262	11.990	13.8	10.5	NO		NO	bb

Compound name: 13C3-PFBS
Response Factor: 0.109196
RRF SD: 0.00615716, Relative SD: 5.63862
Response type: Internal Std (Ref 58), 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	180205M1_2	Standard	12.500	2.69	1489.336	14207.144	1.310	12.0	-4.0	NO		NO	bb
2	2	180205M1_3	Standard	12.500	2.69	1446.984	14180.340	1.276	11.7	-6.6	NO		NO	bb
3	3	180205M1_4	Standard	12.500	2.69	1439.827	12421.671	1.449	13.3	6.2	NO		NO	bb
4	4	180205M1_5	Standard	12.500	2.69	1296.600	12960.338	1.251	11.5	-8.4	NO		NO	bb
5	5	180205M1_6	Standard	12.500	2.69	1378.333	12194.845	1.413	12.9	3.5	NO		NO	bb
6	6	180205M1_7	Standard	12.500	2.69	1425.968	12713.140	1.402	12.8	2.7	NO		NO	bb
7	7	180205M1_8	Standard	12.500	2.69	1371.053	12854.285	1.333	12.2	-2.3	NO		NO	bb
8	8	180205M1_9	Standard	12.500	2.69	1375.398	13082.049	1.314	12.0	-3.7	NO		NO	bb
9	9	180205M1_10	Standard	12.500	2.69	1263.901	10958.029	1.442	13.2	5.6	NO		NO	bb
10	10	180205M1_11	Standard	12.500	2.69	1195.437	10234.262	1.460	13.4	7.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Compound name: 13C2-PFOA
Response Factor: 1.06934
RRF SD: 0.111591, Relative SD: 10.4355
Response type: Internal Std (Ref 60), 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	180205M1_2	Standard	12.500	4.33	14371.031	12123.608	14.817	13.9	10.9	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.33	12959.139	13477.624	12.019	11.2	-10.1	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.33	12753.312	10117.108	15.757	14.7	17.9	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.33	12828.711	12771.222	12.556	11.7	-6.1	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.33	11953.538	12492.501	11.961	11.2	-10.5	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.33	11925.250	12093.818	12.326	11.5	-7.8	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.33	12257.613	12684.229	12.080	11.3	-9.6	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.33	13066.736	11402.758	14.324	13.4	7.2	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.33	12344.222	10556.547	14.617	13.7	9.4	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.33	11359.581	10748.326	13.211	12.4	-1.2	NO		NO	bb

Compound name: 13C5-PFNA
Response Factor: 0.929137
RRF SD: 0.119735, Relative SD: 12.8867
Response type: Internal Std (Ref 61), 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	180205M1_2	Standard	12.500	4.76	11386.309	12074.349	11.788	12.7	1.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.76	12361.640	13534.756	11.417	12.3	-1.7	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.76	9874.763	9758.258	12.649	13.6	8.9	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.76	10621.063	10320.535	12.864	13.8	10.8	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.76	10309.997	10986.663	11.730	12.6	1.0	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.76	11520.252	11350.685	12.687	13.7	9.2	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.76	9323.253	13201.425	8.828	9.5	-24.0	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.76	10774.762	14456.489	9.317	10.0	-19.8	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.76	12012.619	13110.623	11.453	12.3	-1.4	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.76	9807.670	9141.967	13.410	14.4	15.5	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-CRV.qld

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Compound name: 13C8-PFOSA
Response Factor: 0.225978
RRF SD: 0.0125107, Relative SD: 5.53627
Response type: Internal Std (Ref 64), 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	180205M1_2	Standard	12.500	4.83	2998.812	13471.515	2.783	12.3	-1.5	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.83	2668.477	11548.412	2.888	12.8	2.3	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.83	3051.908	13419.694	2.843	12.6	0.6	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.83	2754.330	11848.722	2.906	12.9	2.9	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.83	2891.491	11713.126	3.086	13.7	9.2	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.83	2384.795	11993.388	2.486	11.0	-12.0	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.83	2298.451	10052.904	2.858	12.6	1.2	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.83	2844.106	12276.690	2.896	12.8	2.5	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.83	2504.160	11632.112	2.691	11.9	-4.7	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.83	2203.638	9796.340	2.812	12.4	-0.5	NO		NO	bb

Compound name: 13C8-PFOS
Response Factor: 1.04148
RRF SD: 0.0845141, Relative SD: 8.11479
Response type: Internal Std (Ref 62), 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	180205M1_2	Standard	12.500	4.85	3338.892	3131.725	13.327	12.8	2.4	NO		NO	bb
2	2	180205M1_3	Standard	12.500	4.85	3430.266	3507.721	12.224	11.7	-6.1	NO		NO	bb
3	3	180205M1_4	Standard	12.500	4.84	3144.039	2652.612	14.816	14.2	13.8	NO		NO	bb
4	4	180205M1_5	Standard	12.500	4.84	2693.524	2781.547	12.104	11.6	-7.0	NO		NO	bb
5	5	180205M1_6	Standard	12.500	4.85	2976.156	2723.605	13.659	13.1	4.9	NO		NO	bb
6	6	180205M1_7	Standard	12.500	4.85	2690.889	2578.392	13.045	12.5	0.2	NO		NO	bb
7	7	180205M1_8	Standard	12.500	4.84	2548.329	2857.920	11.146	10.7	-14.4	NO		NO	bb
8	8	180205M1_9	Standard	12.500	4.85	3309.513	3102.518	13.334	12.8	2.4	NO		NO	bb
9	9	180205M1_10	Standard	12.500	4.84	2663.184	2659.200	12.519	12.0	-3.8	NO		NO	bb
10	10	180205M1_11	Standard	12.500	4.85	2762.147	2464.244	14.011	13.5	7.6	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-13.qld

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(A) No SS available.

AC
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YA. 02/06/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 05 Feb 2018 15:16:58
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	9.22e3	9.21e3		1.0000	1.46	1.46	12.5	11.42	114.2
2	2	PFPeA	263.1 > 218.9	8.98e3	1.11e4		1.0000	2.42	2.42	10.2	10.43	104.3
3	3	PFBS	299.0 > 79.7	1.75e3	1.32e3		1.0000	2.69	2.69	16.6	8.779	87.8
4	4	4:2 FTS	327.2>307.2	1.77e3	1.32e3		1.0000	3.10	3.09	16.8	10.02	100.2
5	5	PFHxA	313.2 > 268.9	1.06e4	3.32e3		1.0000	3.19	3.19	16.0	10.57	105.7
6	6	PFPeS	349.1>80.1	2.23e3	1.32e3		1.0000	3.39	3.39	21.1	10.79	107.9
7	7	PFHpA	363.0 > 318.9	9.77e3	9.09e3		1.0000	3.81	3.81	13.4	10.83	108.3
8	8	L-PFHxS	398.9 > 79.6	1.22e3	1.12e3		1.0000	3.96	3.96	13.6	7.386	73.9
9	10	6:2 FTS	427.1 > 407	2.30e3	1.26e4		1.0000	4.28	4.27	2.29	8.870	88.7
10	11	L-PFOA	413 > 368.7	9.98e3	1.26e4		1.0000	4.33	4.33	9.94	10.41	104.1
11	13	PFHpS	449 > 80.0	2.00e3	3.09e3		1.0000	4.44	4.44	8.07	7.029	70.3
12	14	PFNA	463.0 > 418.8	1.08e4	1.19e4		1.0000	4.76	4.76	11.3	9.203	92.0
13	15	PFOSA	498.1 > 77.8	2.26e3	2.67e3		1.0000	4.83	4.82	10.6	9.956	99.6
14	16	L-PFOS	499 > 79.9	2.28e3	3.09e3		1.0000	4.84	4.84	9.21	8.246	82.5
15	18	PFDA	513 > 468.8	1.14e4	9.11e3		1.0000	5.14	5.13	15.7	12.68	126.8
16	19	8:2 FTS	527 > 506.9	2.53e3	1.26e4		1.0000	5.12	5.10	2.52	10.94	109.4
17	20	PFNS	549.1>80.1	2.00e3	3.09e3		1.0000	5.20	5.19	8.07	9.466	94.7
18	21	N-MeFOSAA	570.1 > 419	5.94e3	4.68e3		1.0000	5.29	5.28	15.9	11.76	117.6
19	22	N-EtFOSAA	584.2 > 419	5.70e3	6.12e3		1.0000	5.45	5.44	11.6	10.91	109.1
20	23	PFUdA	563.0 > 518.9	1.01e4	1.24e4		1.0000	5.46	5.46	10.2	9.811	98.1
21	24	PFDS	598.8 > 80	2.43e3	8.45e3		1.0000	5.51	5.51	3.59	7.690	76.9
22	25	PFDoA	612.9 > 569.0	1.06e4	8.45e3		1.0000	5.74	5.74	15.7	10.30	103.0
23	26	N-MeFOSA	512.1 > 168.9		1.63e4		1.0000	5.84				(A)
24	27	PFTrDA	662.9 > 618.9	9.97e3	4.37e3		1.0000	5.98	5.98	28.5	7.257	72.6
25	28	PFTeDA	712.9 > 668.8	6.59e3	4.37e3		1.0000	6.20	6.20	18.9	8.597	86.0
26	29	N-EtFOSA	526.1 > 168.9		2.43e4		1.0000	6.22				(A)
27	30	PFHxDA	813.1 > 768.6		2.92e3		1.0000	6.51				
28	31	PFODA	913.1 > 868.8		2.92e3		1.0000	6.74				
29	32	N-MeFOSE	616.1 > 58.9		1.86e4		1.0000	6.31				
30	33	N-EtFOSE	630.1 > 58.9		1.94e4		1.0000	6.45				
31	34	13C2-PFHxA	216.1 > 171.8	9.21e3	1.08e4	0.876	1.0000	1.46	1.45	10.6	12.13	97

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Dataset: F:\Projects\PFAS.PRO\Results\180205M1\180205M1-13.qld

Last Altered: Tuesday, February 06, 2018 09:20:47 Pacific Standard Time
Printed: Tuesday, February 06, 2018 09:21:07 Pacific Standard Time

Name: 180205M1_13, Date: 05-Feb-2018, Time: 14:10:49, ID: ICV180205M1-1 PFC ICV 18A3006, Description: PFC ICV 18A3006

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.11e4	1.25e4	0.868	1.0000	2.42	2.42	11.1	12.79	102.3
33	36	13C3-PFBS	302. > 98.8	1.32e3	1.25e4	0.109	1.0000	2.69	2.69	1.32	12.13	97.0
34	37	13C2-PFHxA	315 > 269.8	3.32e3	1.25e4	0.694	1.0000	3.19	3.19	3.34	4.805	96.1
35	38	13C4-PFHpA	367.2 > 321.8	9.09e3	1.25e4	0.694	1.0000	3.81	3.81	9.12	13.14	105.1
36	39	18O2-PFHxS	403.0 > 102.6	1.12e3	3.14e3	0.350	1.0000	3.96	3.96	4.45	12.71	101.7
37	40	13C2-6:2 FTS	429.1 > 408.9	2.77e3	1.32e4	0.242	1.0000	4.28	4.27	2.62	10.83	86.6
38	41	13C2-PFOA	414.9 > 369.7	1.26e4	1.32e4	1.069	1.0000	4.33	4.33	11.9	11.11	88.9
39	42	13C5-PFNA	468.2 > 422.9	1.19e4	1.25e4	0.929	1.0000	4.76	4.76	11.9	12.83	102.7
40	43	13C8-PFOSA	506.1 > 77.7	2.67e3	1.17e4	0.226	1.0000	4.83	4.83	2.85	12.59	100.7
41	44	13C8-PFOS	507.0 > 79.9	3.09e3	3.19e3	1.041	1.0000	4.84	4.85	12.1	11.63	93.1
42	45	13C2-PFDA	515.1 > 469.9	9.11e3	9.59e3	1.217	1.0000	5.14	5.13	11.9	9.747	78.0
43	46	13C2-8:2 FTS	529.1 > 508.7	1.79e3	1.25e4	0.131	1.0000	5.12	5.11	1.80	13.70	109.6
44	47	d3-N-MeFOSAA	573.3 > 419	4.68e3	1.17e4	0.432	1.0000	5.29	5.28	4.98	11.53	92.2
45	48	d5-N-EtFOSAA	589.3 > 419	6.12e3	1.17e4	0.476	1.0000	5.45	5.44	6.53	13.71	109.7
46	49	13C2-PFUdA	565 > 519.8	1.24e4	1.17e4	0.969	1.0000	5.46	5.45	13.2	13.65	109.2
47	50	13C2-PFDoA	615.0 > 569.7	8.45e3	1.17e4	0.605	1.0000	5.74	5.74	9.01	14.89	119.1
48	51	d3-N-MeFOSA	515.2 > 168.9	1.63e4	1.17e4	0.116	1.0000	5.84	5.86	17.4	150.5	100.3
49	52	13C2-PFTeDA	714.8 > 669.6	4.37e3	1.17e4	0.331	1.0000	6.20	6.20	4.66	14.07	112.5
50	53	d5-N-ETFOSA	531.1 > 168.9	2.43e4	1.17e4	0.171	1.0000	6.22	6.23	25.9	151.3	100.9
51	54	13C2-PFHxDA	815 > 769.7	2.92e3	1.17e4	0.577	1.0000	6.51	6.51	3.12	5.400	108.0
52	55	d7-N-MeFOSE	623.1 > 58.9	1.86e4	1.17e4	0.152	1.0000	6.31	6.33	19.9	130.9	87.3
53	56	d9-N-EtFOSE	639.2 > 58.8	1.94e4	1.17e4	0.142	1.0000	6.45	6.48	20.7	145.5	97.0
54	57	13C4-PFBA	217. > 171.8	1.08e4	1.08e4	1.000	1.0000	1.46	1.45	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.25e4	1.25e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.14e3	3.14e3	1.000	1.0000	3.96	3.96	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.32e4	1.32e4	1.000	1.0000	4.33	4.33	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.25e4	1.25e4	1.000	1.0000	5.76	4.76	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	3.19e3	3.19e3	1.000	1.0000	4.84	4.84	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	9.59e3	9.59e3	1.000	1.0000	5.14	5.13	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.17e4	1.17e4	1.000	1.0000	5.46	5.45	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	2.98e3	1.25e4	0.287	1.0000	3.10	3.10	2.99	10.44	83.5

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Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180206M1_1	IPA	06-Feb-18	10:56:05
2	180206M1_2	CS3 TESTER	06-Feb-18	11:07:35
3	180206M1_3	IPA	06-Feb-18	11:19:04
4	180206M1_4	ST180206M1-1 PFC CS0 18A3009	06-Feb-18	11:30:34
5	180206M1_5	B8A0172-BS1 OPR 0.125	06-Feb-18	11:41:58
6	180206M1_6	B8A0172-BLK1 Method Blank 0.125	06-Feb-18	11:53:25
7	180206M1_7	1800180-07 YEAGR-EB-02-012018 0.11998	06-Feb-18	12:04:52
8	180206M1_8	B8A0166-BS1 OPR 0.25	06-Feb-18	12:16:19
9	180206M1_9	IPA	06-Feb-18	12:27:46
10	180206M1_10	ST180206M1-2 PFC CS3 18A3012	06-Feb-18	12:39:16
11	180206M1_11	IPA	06-Feb-18	12:50:42
12	180206M1_12	B8A0155-BS1 OPR 0.125	06-Feb-18	13:20:45
13	180206M1_13	B8A0155-BLK1 Method Blank 0.125	06-Feb-18	13:32:14
14	180206M1_14	B8A0155-MS1 Matrix Spike 0.1176	06-Feb-18	13:43:41
15	180206M1_15	B8A0155-MSD1 Matrix Spike Dup 0.11695	06-Feb-18	13:55:10
16	180206M1_16	1800100-09 MINNE-GW-TW12-010918 0.11992	06-Feb-18	14:06:41
17	180206M1_17	1800100-10 MINNE-GW-TW14-010918 0.11685	06-Feb-18	14:18:07
18	180206M1_18	1800100-11 MINNE-GW-TW15-010918 0.11738	06-Feb-18	14:29:37
19	180206M1_19	no data		
20	180206M1_20	no data		
21	180206M1_21	1800100-17 MINNE-GW-TW11-011018 0.11832	06-Feb-18	14:41:06
22	180206M1_22	1800100-18 MINNE-GW-TW17-011018 0.11988	06-Feb-18	14:52:37
23	180206M1_23	1800100-19 MINNE-GW-TW18-011018 0.11609	06-Feb-18	15:04:03
24	180206M1_24	B8A0162-MS1 Matrix Spike 0.12293	06-Feb-18	15:15:30
25	180206M1_25	B8A0162-MSD1 Matrix Spike Dup 0.12128	06-Feb-18	15:26:57
26	180206M1_26	B8A0162-MS2 Matrix Spike 0.11755	06-Feb-18	15:38:23
27	180206M1_27	B8A0162-MSD2 Matrix Spike Dup 0.12186	06-Feb-18	15:49:51
28	180206M1_28	1800177-06 YEAGR-06-SW01-011718 0.12192	06-Feb-18	16:01:17
29	180206M1_29	no data		
30	180206M1_30	1800195-03 PITTS-GW-DUP01-011618 0.12017	06-Feb-18	16:12:44
31	180206M1_31	IPA	06-Feb-18	16:24:14

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Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
32	180206M1_32	ST180206M1-3 PFC CS3 18A3012	06-Feb-18	16:35:41
33	180206M1_33	IPA	06-Feb-18	16:47:08
34	180206M1_34	1800195-04 PITTS-GW-TW01B-011618 0.11986	06-Feb-18	16:58:35
35	180206M1_35	1800195-05 PITTS-GW-TW03-011718 0.12099	06-Feb-18	17:10:04
36	180206M1_36	1800195-06 PITTS-GW-TW07-011718 0.12041	06-Feb-18	17:21:34
37	180206M1_37	no data		
38	180206M1_38	1800195-07 PITTS-GW-TW13-011618 0.12	06-Feb-18	17:33:03
39	180206M1_39	1800195-08 PITTS-GW-TW15-011618 0.12086	06-Feb-18	17:44:33
40	180206M1_40	1800195-09 PITTS-GW-TW16-011618 0.11819	06-Feb-18	17:56:01
41	180206M1_41	1800195-10 PITTS-GW-TW17-011618 0.11997	06-Feb-18	18:07:31
42	180206M1_42	1800195-11 PITTS-GW-TW18-011618 0.12121	06-Feb-18	18:19:02
43	180206M1_43	1800177-06@5X YEAGR-06-SW01-011718 0.1...	06-Feb-18	18:30:28
44	180206M1_44	B8A0162-MS1@5X Matrix Spike 0.12293	06-Feb-18	18:41:55
45	180206M1_45	B8A0162-MSD1@5X Matrix Spike Dup 0.12128	06-Feb-18	18:53:22
46	180206M1_46	1800195-06@5X PITTS-GW-TW07-011718 0.1...	06-Feb-18	19:04:49
47	180206M1_47	B8A0162-MS2@5X Matrix Spike 0.11755	06-Feb-18	19:16:15
48	180206M1_48	1702193-01 921691257 3	06-Feb-18	20:13:42
49	180206M1_49	B8A0172-MS1@5X Matrix Spike 0.119	06-Feb-18	20:25:06
50	180206M1_50	B8A0172-MSD1@5X Matrix Spike Dup 0.11886	06-Feb-18	20:36:33
51	180206M1_51	1800180-10@5X YEAGR-GW-DUP01-011918 0...	06-Feb-18	20:48:03
52	180206M1_52	1800180-11@5X YEAGR-GW-ML-FL014-MW0...	06-Feb-18	20:59:31
53	180206M1_53	IPA	06-Feb-18	21:11:00
54	180206M1_54	1800180-17 YEAGR-09-SW01-012018 0.1174	06-Feb-18	21:22:30
55	180206M1_55	B8B0018-BS1 OPR 3	06-Feb-18	21:33:59
56	180206M1_56	B8B0018-BLK1 Method Blank 3	06-Feb-18	21:45:30
57	180206M1_57	1800219-01 Kenneth Kolker 3	06-Feb-18	21:56:59
58	180206M1_58	B8B0017-BS1 OPR 0.25	06-Feb-18	22:08:26
59	180206M1_59	B8B0017-BSD1 LCSD 0.25	06-Feb-18	22:19:56
60	180206M1_60	B8B0017-BLK1 Method Blank 0.25	06-Feb-18	22:31:25
61	180206M1_61	1800186-01RE1 REEPDW132 0.11965	06-Feb-18	22:42:55
62	180206M1_62	1800186-02RE1 REEPDW133 0.11325	06-Feb-18	22:54:22
63	180206M1_63	1800186-03RE1 REEPDW134 0.12036	06-Feb-18	23:05:52
64	180206M1_64	1800218-01 BZ79699 0.26192	06-Feb-18	23:17:19
65	180206M1_65	1800218-02 BZ79700 0.25325	06-Feb-18	23:28:46

(A) RI. AC 2/7/18

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Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
66	180206M1_66	IPA	06-Feb-18	23:40:13
67	180206M1_67	ST180206M1-5 PFC CS0 18A3009	06-Feb-18	23:51:40
68	180206M1_68	IPA	07-Feb-18	00:03:06
69	180206M1_69	1800225-01 WT1801251435MK 0.26369	07-Feb-18	00:14:36
70	180206M1_70	1800225-02 FB1801251440MK 0.25785	07-Feb-18	00:26:05
71	180206M1_71	1800225-03 WT1801251450MK 0.26447	07-Feb-18	00:37:34
72	180206M1_72	1800225-04 WSOFT1801251520MK 0.26174	07-Feb-18	00:49:03
73	180206M1_73	1800225-05 WR1801251535MK 0.26502	07-Feb-18	01:00:33
74	180206M1_74	1800235-01 SW1801230935JLB 0.25866	07-Feb-18	01:12:00
75	180206M1_75	1800235-03 SW1801231035JLB 0.25488	07-Feb-18	01:23:29
76	180206M1_76	1800245-01 GW1923180125RAP 0.26309	07-Feb-18	01:34:56
77	180206M1_77	1800245-02 GW2933180125RAP 0.24912	07-Feb-18	01:46:23
78	180206M1_78	1800245-03 GW3943180125RAP 0.24954	07-Feb-18	01:57:50
79	180206M1_79	IPA	07-Feb-18	02:09:20
80	180206M1_80	ST180206M1-6 PFC CS3 18A3012	07-Feb-18	02:20:49
81	180206M1_81	IPA	07-Feb-18	02:32:19
82	180206M1_82	B8A0167-BS1 OPR 0.125	07-Feb-18	02:43:48
83	180206M1_83	B8A0167-BSD1 LCSD 0.125	07-Feb-18	02:55:18
84	180206M1_84	B8A0167-BLK1 Method Blank 0.125	07-Feb-18	03:06:44
85	180206M1_85	1800156-09 MINNE-06-SW01-011718 0.12113	07-Feb-18	03:18:14
86	180206M1_86	1800156-10 MINNE-GW-DUP02-011218 0.12287	07-Feb-18	03:29:43
87	180206M1_87	1800156-11 MINNE-GW-TW01A-011218 0.12321	07-Feb-18	03:41:10
88	180206M1_88	1800159-12 MINNE-GW-TW10-011718 0.1059	07-Feb-18	03:52:37
89	180206M1_89	1800178-12 YEAGR-SW-DUP01-011718 0.12161	07-Feb-18	04:04:04
90	180206M1_90	1800179-12 YEAGR-GW-BW02-011918 0.11851	07-Feb-18	04:15:30
91	180206M1_91	IPA	07-Feb-18	04:26:57
92	180206M1_92	ST180206M1-7 PFC CS3 18A3012	07-Feb-18	04:38:27
93	180206M1_93	IPA	07-Feb-18	04:49:56
94	180206M1_94	B8A0197-BS1 OPR 1	07-Feb-18	05:01:25
95	180206M1_95	B8A0197-BLK1 Method Blank 1	07-Feb-18	05:12:54
96	180206M1_96	B8A0197-MS1 Matrix Spike 1.27	07-Feb-18	05:24:25
97	180206M1_97	B8A0197-MSD1 Matrix Spike Dup 1.21	07-Feb-18	05:35:54
98	180206M1_98	1800140-01 FT-SS501-0001 1.23	07-Feb-18	05:47:24
99	180206M1_99	1800140-02 FT-SS502-0001 1.17	07-Feb-18	05:58:52

Dataset: Untitled

Last Altered: Wednesday, February 07, 2018 10:41:30 Pacific Standard Time
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Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
100	180206M1_100	1800140-03 FT-SS503-0001 1.34	07-Feb-18	06:10:21
101	180206M1_101	1800140-04 FT-SB504-2022 1.26	07-Feb-18	06:21:51
102	180206M1_102	1800140-05 FT-SB505-1618 1.21	07-Feb-18	06:33:20
103	180206M1_103	1800140-06 FT-SB506-2022 1.26	07-Feb-18	06:44:47
104	180206M1_104	1800140-07 FT-SB507-1819 1.27	07-Feb-18	06:56:17
105	180206M1_105	1800140-08 FT-SB508-1617 1.23	07-Feb-18	07:07:44
106	180206M1_106	1800140-09 FT-SB509-1718 1.33	07-Feb-18	07:19:10
107	180206M1_107	1800140-10 FT-SB510-0910 1.16	07-Feb-18	07:30:38
108	180206M1_108	IPA	07-Feb-18	07:42:05
109	180206M1_109	ST180206M1-8 PFC CS3 18A3012	07-Feb-18	07:53:31
110	180206M1_110	IPA	07-Feb-18	08:04:58
111	180206M1_111	1800140-11 FT-SB510-1415 1.22	07-Feb-18	08:16:25
112	180206M1_112	1800140-12 FT-SB511-1617 1.24	07-Feb-18	08:27:54
113	180206M1_113	1800140-13 FT-SS512-0001 1.2	07-Feb-18	08:39:24
114	180206M1_114	1800140-14 FT-SB512-0708 1.22	07-Feb-18	08:50:54
115	180206M1_115	1800140-15 FT-SB512-2223 1.2	07-Feb-18	09:02:22
116	180206M1_116	1800140-16 FT-SS513-0001 1.19	07-Feb-18	09:13:52
117	180206M1_117	1800140-17 FT-SB513-1819 1.22	07-Feb-18	09:25:21
118	180206M1_118	1800140-18 FT-Dup01-20180116 1.2	07-Feb-18	09:36:51
119	180206M1_119	1800140-19 FT-Dup02-20180117 1.21	07-Feb-18	09:48:20
120	180206M1_120	IPA	07-Feb-18	09:59:50
121	180206M1_121	ST180206M1-9 PFC CS3 18A3012	07-Feb-18	10:11:19
122	180206M1_122	IPA	07-Feb-18	10:22:48

Quantify Sample Summary Report **MassLynx MassLynx V4.1 SCN945 SCN960**
Vista Analytical Laboratory

Ⓐ = 8:2 FTS < 70%.
Ⓑ = PFUdA, PFTrDA, PFTeDA > 130%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

CCV

AD 2/7/18
JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

70-130%.

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.21e3	1.32e4		1.0000	1.46	1.48	1.15	1.025	102.5
2	2	PFPeA	263.1 > 218.9	1.31e3	1.65e4		1.0000	2.42	2.42	0.992	0.9316	93.2
3	3	PFBS	299.0 > 79.7	2.87e2	1.93e3		1.0000	2.69	2.70	1.85	0.9906	99.1
4	4	4:2 FTS	327.2>307.2	3.08e2	1.93e3		1.0000	3.10	3.09	1.99	1.207	120.7
5	5	PFHxA	313.2 > 268.9	1.55e3	4.75e3		1.0000	3.19	3.19	1.63	1.056	105.6
6	6	PFPeS	349.1>80.1	3.00e2	1.93e3		1.0000	3.39	3.38	1.94	0.9302	93.0
7	7	PFHpA	363.0 > 318.9	1.43e3	1.24e4		1.0000	3.81	3.79	1.44	1.106	110.6
8	8	L-PFHxS	398.9 > 79.6	2.05e2	1.32e3		1.0000	3.96	3.94	1.94	1.008	100.8
9	10	6:2 FTS	427.1 > 407	2.91e2	1.64e4		1.0000	4.28	4.24	0.222	0.8736	87.4
10	11	L-PFOA	413 > 368.7	1.22e3	1.64e4		1.0000	4.33	4.30	0.931	0.8452	84.5
11	13	PFHpS	449 > 80.0	3.15e2	3.85e3		1.0000	4.44	4.40	1.02	0.9348	93.5
12	14	PFNA	463.0 > 418.8	1.47e3	1.54e4		1.0000	4.76	4.72	1.19	0.9295	93.0
13	15	PFOSA	498.1 > 77.8	3.41e2	3.24e3		1.0000	4.83	4.79	1.32	1.251	125.1
14	16	L-PFOS	499 > 79.9	2.96e2	3.85e3		1.0000	4.84	4.80	0.961	0.9220	92.2
15	18	PFDA	513 > 468.8	1.67e3	1.44e4		1.0000	5.14	5.08	1.46	1.294	129.4
16	19	8:2 FTS	527 > 506.9	2.17e2	1.64e4		1.0000	5.12	5.05	0.165	0.6869	68.7 Ⓐ
17	20	PFNS	549.1>80.1	2.89e2	3.85e3		1.0000	5.20	5.14	0.937	1.099	109.9
18	21	N-MeFOSAA	570.1 > 419	8.41e2	6.63e3		1.0000	5.29	5.23	1.59	1.231	123.1
19	22	N-EtFOSAA	584.2 > 419	5.62e2	7.69e3		1.0000	5.45	5.38	0.913	0.9156	91.6
20	23	PFUdA	563.0 > 518.9	1.74e3	1.42e4		1.0000	5.46	5.40	1.53	1.354	135.4 Ⓑ
21	24	PFDS	598.8 > 80	3.62e2	1.10e4		1.0000	5.51	5.44	0.412	0.9278	92.8
22	25	PFDoA	612.9 > 569.0	1.69e3	1.10e4		1.0000	5.74	5.67	1.92	0.9069	90.7
23	26	N-MeFOSA	512.1 > 168.9	6.93e2	1.87e4		1.0000	5.84	5.82	5.55	5.794	115.9
24	27	PFTrDA	662.9 > 618.9	1.72e3	3.57e3		1.0000	5.98	5.91	6.03	1.503	150.3 Ⓑ
25	28	PFTeDA	712.9 > 668.8	8.61e2	3.57e3		1.0000	6.20	6.12	3.02	1.370	137.0 Ⓑ
26	29	N-EtFOSA	526.1 > 168.9	9.08e2	2.84e4		1.0000	6.22	6.18	4.80	5.223	104.5
27	30	PFHxDA	813.1 > 768.6	4.61e2	2.84e3		1.0000	6.51	6.45	0.813	0.9942	99.4
28	31	PFODA	913.1 > 868.8	6.30e2	2.84e3		1.0000	6.74	6.67	1.11	1.190	119.0
29	32	N-MeFOSE	616.1 > 58.9	7.06e2	2.51e4		1.0000	6.31	6.27	4.22	4.202	84.0
30	33	N-EtFOSE	630.1 > 58.9	1.06e3	2.65e4		1.0000	6.45	6.42	5.97	5.150	103.0
31	34	MPFBA	216.1 > 171.8	1.32e4	1.47e4	0.876	1.0000	1.46	1.48	11.2	12.83	102.7

50-150%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-67.qld

Last Altered: Wednesday, February 07, 2018 08:55:58 Pacific Standard Time
Printed: Wednesday, February 07, 2018 08:59:30 Pacific Standard Time

Name: 180206M1_67, Date: 06-Feb-2018, Time: 23:51:40, ID: ST180206M1-5 PFC CS0 18A3009, Description: PFC CS0 18A3009

50-150%.

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.65e4	1.82e4	0.868	1.0000	2.42	2.42	11.3	13.05	104.4
33	36	13C3-PFBS	302. > 98.8	1.93e3	1.82e4	0.109	1.0000	2.69	2.69	1.33	12.14	97.1
34	37	13C2-PFHxA	315 > 269.8	4.75e3	1.82e4	0.694	1.0000	3.19	3.19	3.26	4.691	93.8
35	38	13C4-PFHpA	367.2 > 321.8	1.24e4	1.82e4	0.694	1.0000	3.81	3.79	8.48	12.21	97.7
36	39	18O2-PFHxS	403.0 > 102.6	1.32e3	3.78e3	0.350	1.0000	3.96	3.94	4.37	12.50	100.0
37	40	13C2-6:2 FTS	429.1 > 408.9	3.35e3	1.35e4	0.242	1.0000	4.28	4.24	3.10	12.79	102.3
38	41	13C2-PFOA	414.9 > 369.7	1.64e4	1.35e4	1.069	1.0000	4.33	4.30	15.2	14.20	113.6
39	42	13C5-PFNA	468.2 > 422.9	1.54e4	1.63e4	0.929	1.0000	4.76	4.72	11.8	12.69	101.5
40	43	13C8-PFOSA	506.1 > 77.7	3.24e3	1.50e4	0.226	1.0000	4.83	4.79	2.70	11.96	95.7
41	44	13C8-PFOS	507.0 > 79.9	3.85e3	4.18e3	1.041	1.0000	4.84	4.80	11.5	11.06	88.5
42	45	13C2-PFDA	515.1 > 469.9	1.44e4	1.36e4	1.217	1.0000	5.14	5.08	13.2	10.83	86.6
43	46	13C2-8:2 FTS	529.1 > 508.7	2.17e3	1.82e4	0.131	1.0000	5.12	5.05	1.49	11.33	90.6
44	47	d3-N-MeFOSAA	573.3 > 419	6.63e3	1.50e4	0.432	1.0000	5.29	5.22	5.53	12.79	102.3
45	48	d5-N-EtFOSAA	589.3 > 419	7.69e3	1.50e4	0.476	1.0000	5.45	5.37	6.42	13.49	107.9
46	49	13C2-PFUdA	565 > 519.8	1.42e4	1.50e4	0.969	1.0000	5.46	5.40	11.9	12.24	97.9
47	50	13C2-PFDoA	615.0 > 569.7	1.10e4	1.50e4	0.605	1.0000	5.74	5.67	9.17	15.15	121.2
48	51	d3-N-MeFOSA	515.2 > 168.9	1.87e4	1.50e4	0.116	1.0000	5.84	5.84	15.6	135.3	90.2
49	52	13C2-PFTeDA	714.8 > 669.6	3.57e3	1.50e4	0.331	1.0000	6.20	6.12	2.98	8.996	72.0
50	53	d5-N-ETFOSA	531.1 > 168.9	2.84e4	1.50e4	0.171	1.0000	6.22	6.19	23.7	138.2	92.1
51	54	13C2-PFHxDA	815 > 769.7	2.84e3	1.50e4	0.577	1.0000	6.51	6.44	2.37	4.102	82.0
52	55	d7-N-MeFOSE	623.1 > 58.9	2.51e4	1.50e4	0.152	1.0000	6.31	6.26	21.0	138.1	92.1
53	56	d9-N-EtFOSE	639.2 > 58.8	2.65e4	1.50e4	0.142	1.0000	6.45	6.42	22.1	155.6	103.8
54	57	13C4-PFBA	217. > 171.8	1.47e4	1.47e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.82e4	1.82e4	1.000	1.0000	3.19	3.18	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.78e3	3.78e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.35e4	1.35e4	1.000	1.0000	4.33	4.29	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.63e4	1.63e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.18e3	4.18e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.36e4	1.36e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.50e4	1.50e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	3.86e3	1.82e4	0.287	1.0000	3.10	3.09	2.64	9.217	73.7

50-150%.

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

Ⓐ = 6:2 FTS < 70%

Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

CCV

AD 2/7/18

JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.29e4	1.39e4		1.0000	1.46	1.48	11.6	10.54	105.4
2	2	PFPeA	263.1 > 218.9	1.28e4	1.58e4		1.0000	2.42	2.42	10.1	10.34	103.4
3	3	PFBS	299.0 > 79.7	2.70e3	2.00e3		1.0000	2.69	2.70	16.9	8.937	89.4
4	4	4:2 FTS	327.2>307.2	2.69e3	2.00e3		1.0000	3.10	3.09	16.8	10.05	100.5
5	5	PFHxA	313.2 > 268.9	1.45e4	4.96e3		1.0000	3.19	3.19	14.6	9.662	96.6
6	6	PFPeS	349.1>80.1	3.24e3	2.00e3		1.0000	3.39	3.38	20.3	10.35	103.5
7	7	PFHpA	363.0 > 318.9	1.38e4	1.29e4		1.0000	3.81	3.79	13.3	10.75	107.5
8	8	L-PFHxS	398.9 > 79.6	2.08e3	1.41e3		1.0000	3.96	3.94	18.4	9.975	99.8
9	10	6:2 FTS	427.1 > 407	2.86e3	2.03e4		1.0000	4.28	4.24	1.76	6.800	68.0Ⓐ
10	11	L-PFOA	413 > 368.7	1.59e4	2.03e4		1.0000	4.33	4.30	9.76	10.22	102.2
11	13	PFHpS	449 > 80.0	3.73e3	4.43e3		1.0000	4.44	4.40	10.5	9.202	92.0
12	14	PFNA	463.0 > 418.8	1.74e4	1.62e4		1.0000	4.76	4.72	13.4	10.89	108.9
13	15	PFOSA	498.1 > 77.8	2.81e3	2.99e3		1.0000	4.83	4.79	11.7	11.05	110.5
14	16	L-PFOS	499 > 79.9	3.63e3	4.43e3		1.0000	4.84	4.80	10.2	9.145	91.5
15	18	PFDA	513 > 468.8	1.55e4	1.54e4		1.0000	5.14	5.08	12.6	10.17	101.7
16	19	8:2 FTS	527 > 506.9	3.35e3	2.03e4		1.0000	5.12	5.05	2.06	8.934	89.3
17	20	PFNS	549.1>80.1	3.21e3	4.43e3		1.0000	5.20	5.14	9.06	10.62	106.2
18	21	N-MeFOSAA	570.1 > 419	8.48e3	7.44e3		1.0000	5.29	5.23	14.3	10.57	105.7
19	22	N-EtFOSAA	584.2 > 419	6.69e3	8.51e3		1.0000	5.45	5.38	9.83	9.225	92.3
20	23	PFUdA	563.0 > 518.9	1.26e4	1.93e4		1.0000	5.46	5.39	8.14	7.799	78.0
21	24	PFDS	598.8 > 80	4.31e3	1.17e4		1.0000	5.51	5.44	4.60	9.819	98.2
22	25	PFDoA	612.9 > 569.0	1.59e4	1.17e4		1.0000	5.74	5.67	16.9	11.09	110.9
23	26	N-MeFOSA	512.1 > 168.9	6.68e3	1.97e4		1.0000	5.84	5.83	51.0	56.02	112.0
24	27	PFTrDA	662.9 > 618.9	1.66e4	4.11e3		1.0000	5.98	5.91	50.4	12.96	129.6
25	28	PFTeDA	712.9 > 668.8	8.24e3	4.11e3		1.0000	6.20	6.12	25.0	11.44	114.4
26	29	N-EtFOSA	526.1 > 168.9	9.11e3	3.03e4		1.0000	6.22	6.18	45.1	49.67	99.3
27	30	PFHxDA	813.1 > 768.6	5.22e3	3.60e3		1.0000	6.51	6.44	7.25	9.963	99.6
28	31	PFODA	913.1 > 868.8	7.01e3	3.60e3		1.0000	6.74	6.67	9.73	10.51	105.1
29	32	N-MeFOSE	616.1 > 58.9	8.81e3	2.19e4		1.0000	6.31	6.27	60.4	60.15	120.3
30	33	N-EtFOSE	630.1 > 58.9	1.13e4	2.40e4		1.0000	6.45	6.42	70.7	60.69	121.4
31	34	13C3PFBA	216.1 > 171.8	1.39e4	1.58e4	0.876	1.0000	1.46	1.48	11.1	12.62	101.0

70-130%

50-150%

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-92.qld

Last Altered: Wednesday, February 07, 2018 09:04:43 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:43 Pacific Standard Time

Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.58e4	1.82e4	0.868	1.0000	2.42	2.42	10.9	12.54	100.4
33	36	13C3-PFBS	302. > 98.8	2.00e3	1.82e4	0.109	1.0000	2.69	2.70	1.37	12.58	100.6
34	37	13C2-PFHxA	315 > 269.8	4.96e3	1.82e4	0.694	1.0000	3.19	3.19	3.41	4.906	98.1
35	38	13C4-PFHpA	367.2 > 321.8	1.29e4	1.82e4	0.694	1.0000	3.81	3.79	8.87	12.78	102.2
36	39	18O2-PFHxS	403.0 > 102.6	1.41e3	3.83e3	0.350	1.0000	3.96	3.94	4.61	13.18	105.5
37	40	13C2-6:2 FTS	429.1 > 408.9	3.96e3	1.98e4	0.242	1.0000	4.28	4.24	2.50	10.30	82.4
38	41	13C2-PFOA	414.9 > 369.7	2.03e4	1.98e4	1.069	1.0000	4.33	4.30	12.8	11.99	95.9
39	42	13C5-PFNA	468.2 > 422.9	1.62e4	1.96e4	0.929	1.0000	4.76	4.72	10.4	11.14	89.1
40	43	13C8-PFOSA	506.1 > 77.7	2.99e3	1.45e4	0.226	1.0000	4.83	4.79	2.59	11.44	91.5
41	44	13C8-PFOS	507.0 > 79.9	4.43e3	4.16e3	1.041	1.0000	4.84	4.80	13.3	12.78	102.3
42	45	13C2-PFDA	515.1 > 469.9	1.54e4	1.49e4	1.217	1.0000	5.14	5.08	12.9	10.61	84.9
43	46	13C2-8:2 FTS	529.1 > 508.7	2.13e3	1.82e4	0.131	1.0000	5.12	5.05	1.46	11.14	89.1
44	47	d3-N-MeFOSAA	573.3 > 419	7.44e3	1.45e4	0.432	1.0000	5.29	5.22	6.42	14.85	118.8
45	48	d5-N-EtFOSAA	589.3 > 419	8.51e3	1.45e4	0.476	1.0000	5.45	5.37	7.35	15.44	123.5
46	49	13C2-PFUdA	565 > 519.8	1.93e4	1.45e4	0.969	1.0000	5.46	5.39	16.7	17.20	137.6
47	50	13C2-PFDoA	615.0 > 569.7	1.17e4	1.45e4	0.605	1.0000	5.74	5.67	10.1	16.72	133.8
48	51	d3-N-MeFOSA	515.2 > 168.9	1.97e4	1.45e4	0.116	1.0000	5.84	5.84	17.0	146.9	98.0
49	52	13C2-PFTeDA	714.8 > 669.6	4.11e3	1.45e4	0.331	1.0000	6.20	6.12	3.55	10.73	85.8
50	53	d5-N-ETFOSA	531.1 > 168.9	3.03e4	1.45e4	0.171	1.0000	6.22	6.19	26.2	152.6	101.7
51	54	13C2-PFHxDA	815 > 769.7	3.60e3	1.45e4	0.577	1.0000	6.51	6.44	3.11	5.390	107.8
52	55	d7-N-MeFOSE	623.1 > 58.9	2.19e4	1.45e4	0.152	1.0000	6.31	6.27	18.9	124.6	83.1
53	56	d9-N-EtFOSE	639.2 > 58.8	2.40e4	1.45e4	0.142	1.0000	6.45	6.41	20.7	145.8	97.2
54	57	13C4-PFBA	217. > 171.8	1.58e4	1.58e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	1.82e4	1.82e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	3.83e3	3.83e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.98e4	1.98e4	1.000	1.0000	4.33	4.30	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.96e4	1.96e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.16e3	4.16e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.49e4	1.49e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.45e4	1.45e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.37e3	1.82e4	0.287	1.0000	3.10	3.09	3.00	10.47	83.8

50-150%

50-150%

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time

Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

(A) = 6:2FTS < 70%

(B) = PFDoA > 130%

CCV

AD 2/7/18

JA. 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

70-130%

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.39e4	1.44e4		1.0000	1.46	1.49	12.0	10.99	109.9
2	2	PFPeA	263.1 > 218.9	1.37e4	1.69e4		1.0000	2.42	2.42	10.1	10.42	104.2
3	3	PFBS	299.0 > 79.7	3.36e3	2.18e3		1.0000	2.69	2.70	19.3	10.20	102.0
4	4	4:2 FTS	327.2>307.2	2.72e3	2.18e3		1.0000	3.10	3.10	15.6	9.320	93.2
5	5	PFHxA	313.2 > 268.9	1.75e4	5.49e3		1.0000	3.19	3.19	15.9	10.55	105.5
6	6	PFPeS	349.1>80.1	3.48e3	2.18e3		1.0000	3.39	3.39	20.0	10.19	101.9
7	7	PFHpA	363.0 > 318.9	1.44e4	1.30e4		1.0000	3.81	3.80	13.8	11.15	111.5
8	8	L-PFHxS	398.9 > 79.6	2.22e3	1.65e3		1.0000	3.96	3.94	16.8	9.095	91.0
9	10	6:2 FTS	427.1 > 407	3.22e3	2.22e4		1.0000	4.28	4.24	1.81	6.983	69.8 (A)
10	11	L-PFOA	413 > 368.7	1.89e4	2.22e4		1.0000	4.33	4.30	10.6	11.16	111.6
11	13	PFHpS	449 > 80.0	4.10e3	4.87e3		1.0000	4.44	4.41	10.5	9.214	92.1
12	14	PFNA	463.0 > 418.8	1.53e4	1.52e4		1.0000	4.76	4.72	12.6	10.20	102.0
13	15	PFOSA	498.1 > 77.8	3.01e3	3.45e3		1.0000	4.83	4.80	10.9	10.28	102.8
14	16	L-PFOS	499 > 79.9	3.71e3	4.87e3		1.0000	4.84	4.80	9.53	8.532	85.3
15	18	PFDA	513 > 468.8	1.47e4	1.38e4		1.0000	5.14	5.08	13.3	10.76	107.6
16	19	8:2 FTS	527 > 506.9	2.95e3	2.22e4		1.0000	5.12	5.05	1.66	7.171	71.7
17	20	PFNS	549.1>80.1	2.68e3	4.87e3		1.0000	5.20	5.14	6.87	8.058	80.6
18	21	N-MeFOSAA	570.1 > 419	8.70e3	7.14e3		1.0000	5.29	5.23	15.2	11.29	112.9
19	22	N-EtFOSAA	584.2 > 419	7.35e3	8.96e3		1.0000	5.45	5.38	10.3	9.621	96.2
20	23	PFUdA	563.0 > 518.9	1.59e4	1.90e4		1.0000	5.46	5.40	10.5	10.08	100.8
21	24	PFDS	598.8 > 80	3.70e3	1.29e4		1.0000	5.51	5.44	3.58	7.653	76.5
22	25	PFDoA	612.9 > 569.0	2.07e4	1.29e4		1.0000	5.74	5.67	20.0	13.10	131.0 (B)
23	26	N-MeFOSA	512.1 > 168.9	7.26e3	2.10e4		1.0000	5.84	5.83	51.8	56.96	113.9
24	27	PFTrDA	662.9 > 618.9	2.00e4	5.28e3		1.0000	5.98	5.91	47.5	12.20	122.0
25	28	PFTeDA	712.9 > 668.8	1.10e4	5.28e3		1.0000	6.20	6.12	26.2	11.96	119.6
26	29	N-EtFOSA	526.1 > 168.9	9.96e3	3.18e4		1.0000	6.22	6.18	47.0	51.80	103.6
27	30	PFHxDA	813.1 > 768.6	5.41e3	3.49e3		1.0000	6.51	6.44	7.76	10.69	106.9
28	31	PFODA	913.1 > 868.8	7.37e3	3.49e3		1.0000	6.74	6.67	10.6	11.44	114.4
29	32	N-MeFOSE	616.1 > 58.9	9.20e3	3.20e4		1.0000	6.31	6.27	43.1	43.09	86.2
30	33	N-EtFOSE	630.1 > 58.9	1.24e4	3.11e4		1.0000	6.45	6.42	60.0	51.48	103.0
31	34	13C8PFOA	216.1 > 171.8	1.44e4	1.68e4	0.876	1.0000	1.46	1.49	10.8	12.29	98.3

50-150%

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-109.qld

Last Altered: Wednesday, February 07, 2018 09:06:34 Pacific Standard Time
Printed: Wednesday, February 07, 2018 09:07:32 Pacific Standard Time

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.69e4	2.06e4	0.868	1.0000	2.42	2.42	10.2	11.79	94.3
33	36	13C3-PFBS	302. > 98.8	2.18e3	2.06e4	0.109	1.0000	2.69	2.70	1.32	12.11	96.9
34	37	13C2-PFHxA	315 > 269.8	5.49e3	2.06e4	0.694	1.0000	3.19	3.19	3.33	4.803	96.1
35	38	13C4-PFHpA	367.2 > 321.8	1.30e4	2.06e4	0.694	1.0000	3.81	3.80	7.91	11.39	91.1
36	39	18O2-PFHxS	403.0 > 102.6	1.65e3	4.71e3	0.350	1.0000	3.96	3.94	4.39	12.54	100.3
37	40	13C2-6:2 FTS	429.1 > 408.9	4.34e3	2.03e4	0.242	1.0000	4.28	4.24	2.66	10.99	87.9
38	41	13C2-PFOA	414.9 > 369.7	2.22e4	2.03e4	1.069	1.0000	4.33	4.30	13.7	12.78	102.2
39	42	13C5-PFNA	468.2 > 422.9	1.52e4	1.57e4	0.929	1.0000	4.76	4.72	12.1	13.05	104.4
40	43	13C8-PFOSA	506.1 > 77.7	3.45e3	1.92e4	0.226	1.0000	4.83	4.79	2.24	9.931	79.4
41	44	13C8-PFOS	507.0 > 79.9	4.87e3	4.26e3	1.041	1.0000	4.84	4.80	14.3	13.71	109.7
42	45	13C2-PFDA	515.1 > 469.9	1.38e4	1.29e4	1.217	1.0000	5.14	5.08	13.4	11.00	88.0
43	46	13C2-8:2 FTS	529.1 > 508.7	2.54e3	2.06e4	0.131	1.0000	5.12	5.05	1.54	11.74	94.0
44	47	d3-N-MeFOSAA	573.3 > 419	7.14e3	1.92e4	0.432	1.0000	5.29	5.22	4.65	10.75	86.0
45	48	d5-N-EtFOSAA	589.3 > 419	8.96e3	1.92e4	0.476	1.0000	5.45	5.37	5.84	12.26	98.1
46	49	13C2-PFUdA	565 > 519.8	1.90e4	1.92e4	0.969	1.0000	5.46	5.39	12.4	12.77	102.2
47	50	13C2-PFDoA	615.0 > 569.7	1.29e4	1.92e4	0.605	1.0000	5.74	5.67	8.42	13.91	111.3
48	51	d3-N-MeFOSA	515.2 > 168.9	2.10e4	1.92e4	0.116	1.0000	5.84	5.84	13.7	118.5	79.0
49	52	13C2-PFTeDA	714.8 > 669.6	5.28e3	1.92e4	0.331	1.0000	6.20	6.12	3.44	10.38	83.1
50	53	d5-N-ETFOSA	531.1 > 168.9	3.18e4	1.92e4	0.171	1.0000	6.22	6.19	20.7	120.7	80.4
51	54	13C2-PFHxDA	815 > 769.7	3.49e3	1.92e4	0.577	1.0000	6.51	6.44	2.27	3.934	78.7
52	55	d7-N-MeFOSE	623.1 > 58.9	3.20e4	1.92e4	0.152	1.0000	6.31	6.27	20.8	137.2	91.5
53	56	d9-N-EtFOSE	639.2 > 58.8	3.11e4	1.92e4	0.142	1.0000	6.45	6.41	20.3	142.6	95.0
54	57	13C4-PFBA	217. > 171.8	1.68e4	1.68e4	1.000	1.0000	1.46	1.48	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	2.06e4	2.06e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	4.71e3	4.71e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	2.03e4	2.03e4	1.000	1.0000	4.33	4.30	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	1.57e4	1.57e4	1.000	1.0000	4.70	4.72	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.26e3	4.26e3	1.000	1.0000	4.84	4.80	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.29e4	1.29e4	1.000	1.0000	5.14	5.08	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.92e4	1.92e4	1.000	1.0000	5.46	5.39	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.60e3	2.06e4	0.287	1.0000	3.10	3.10	2.79	9.727	77.8

50-150%.

50-150%.

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Ⓐ = PFDS <70%.
Ⓑ = 13C2-PFDoA >150%.

AD 2/7/18
✓JA 02/07/2018

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_020218.mdb 06 Feb 2018 16:30:36
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_02-05-18-FULL.cdb 06 Feb 2018 09:06:52

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.34e4	1.45e4		1.0000	1.46	1.49	11.6	10.56	105.6
2	2	PFPeA	263.1 > 218.9	1.44e4	1.90e4		1.0000	2.42	2.42	9.52	9.767	97.7
3	3	PFBS	299.0 > 79.7	3.30e3	2.38e3		1.0000	2.69	2.70	17.4	9.180	91.8
4	4	4:2 FTS	327.2>307.2	2.85e3	2.38e3		1.0000	3.10	3.10	15.0	8.961	89.6
5	5	PFHxA	313.2 > 268.9	1.84e4	4.88e3		1.0000	3.19	3.19	18.8	12.46	124.6
6	6	PFPeS	349.1>80.1	3.09e3	2.38e3		1.0000	3.39	3.38	16.3	8.283	82.8
7	7	PFHpA	363.0 > 318.9	1.51e4	1.47e4		1.0000	3.81	3.79	12.8	10.33	103.3
8	8	L-PFHxS	398.9 > 79.6	2.51e3	1.42e3		1.0000	3.96	3.94	22.1	12.01	120.1
9	10	6:2 FTS	427.1 > 407	3.55e3	1.76e4		1.0000	4.28	4.24	2.52	9.760	97.6
10	11	L-PFOA	413 > 368.7	1.45e4	1.76e4		1.0000	4.33	4.29	10.3	10.80	108.0
11	13	PFHpS	449 > 80.0	4.25e3	4.71e3		1.0000	4.44	4.40	11.3	9.879	98.8
12	14	PFNA	463.0 > 418.8	1.63e4	1.68e4		1.0000	4.76	4.71	12.1	9.849	98.5
13	15	PFOSA	498.1 > 77.8	2.99e3	3.04e3		1.0000	4.83	4.79	12.3	11.55	115.5
14	16	L-PFOS	499 > 79.9	4.15e3	4.71e3		1.0000	4.84	4.79	11.0	9.846	98.5
15	18	PFDA	513 > 468.8	1.47e4	1.59e4		1.0000	5.14	5.07	11.6	9.371	93.7
16	19	8:2 FTS	527 > 506.9	3.44e3	1.76e4		1.0000	5.12	5.04	2.44	10.61	106.1
17	20	PFNS	549.1>80.1	3.58e3	4.71e3		1.0000	5.20	5.13	9.49	11.12	111.2
18	21	N-MeFOSAA	570.1 > 419	8.03e3	7.12e3		1.0000	5.29	5.22	14.1	10.45	104.5
19	22	N-EtFOSAA	584.2 > 419	6.44e3	6.39e3		1.0000	5.45	5.37	12.6	11.81	118.1
20	23	PFUdA	563.0 > 518.9	1.91e4	1.95e4		1.0000	5.46	5.38	12.3	11.84	118.4
21	24	PFDS	598.8 > 80	4.05e3	1.65e4		1.0000	5.51	5.43	3.07	6.581	65.8 Ⓐ
22	25	PFDoA	612.9 > 569.0	1.51e4	1.65e4		1.0000	5.74	5.66	11.4	7.441	74.4
23	26	N-MeFOSA	512.1 > 168.9	7.38e3	2.11e4		1.0000	5.84	5.82	52.5	57.68	115.4
24	27	PFTrDA	662.9 > 618.9	1.60e4	3.97e3		1.0000	5.98	5.89	50.3	12.95	129.5
25	28	PFTeDA	712.9 > 668.8	9.02e3	3.97e3		1.0000	6.20	6.11	28.4	13.00	130.0
26	29	N-EtFOSA	526.1 > 168.9	9.48e3	3.16e4		1.0000	6.22	6.17	45.0	49.56	99.1
27	30	PFHxDA	813.1 > 768.6	4.57e3	3.74e3		1.0000	6.51	6.43	6.11	8.360	83.6
28	31	PFODA	913.1 > 868.8	7.73e3	3.74e3		1.0000	6.74	6.66	10.3	11.16	111.6
29	32	N-MeFOSE	616.1 > 58.9	8.26e3	2.63e4		1.0000	6.31	6.26	47.1	47.05	94.1
30	33	N-EtFOSE	630.1 > 58.9	1.15e4	2.65e4		1.0000	6.45	6.42	65.1	55.87	111.7
31	34	13C3-PFBA	216.1 > 171.8	1.45e4	1.70e4	0.876	1.0000	1.46	1.49	10.6	12.15	97

70-130%.

50-150%.

Dataset: F:\Projects\PFAS.PRO\Results\180206M1\180206M1-121.qld

Last Altered: Wednesday, February 07, 2018 12:18:24 Pacific Standard Time
Printed: Wednesday, February 07, 2018 12:19:16 Pacific Standard Time

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C3-PFPeA	266. > 221.8	1.90e4	2.10e4	0.868	1.0000	2.42	2.42	11.3	13.02	104.2
33	36	13C3-PFBS	302. > 98.8	2.38e3	2.10e4	0.109	1.0000	2.69	2.70	1.42	12.98	103.9
34	37	13C2-PFHxA	315 > 269.8	4.88e3	2.10e4	0.694	1.0000	3.19	3.19	2.91	4.193	83.9
35	38	13C4-PFHpA	367.2 > 321.8	1.47e4	2.10e4	0.694	1.0000	3.81	3.79	8.79	12.65	101.2
36	39	18O2-PFHxS	403.0 > 102.6	1.42e3	4.43e3	0.350	1.0000	3.96	3.94	4.00	11.45	91.6
37	40	13C2-6:2 FTS	429.1 > 408.9	4.31e3	1.83e4	0.242	1.0000	4.28	4.24	2.95	12.15	97.2
38	41	13C2-PFOA	414.9 > 369.7	1.76e4	1.83e4	1.069	1.0000	4.33	4.29	12.0	11.25	90.0
39	42	13C5-PFNA	468.2 > 422.9	1.68e4	2.18e4	0.929	1.0000	4.76	4.71	9.61	10.34	82.7
40	43	13C8-PFOSA	506.1 > 77.7	3.04e3	1.66e4	0.226	1.0000	4.83	4.79	2.29	10.15	81.2
41	44	13C8-PFOS	507.0 > 79.9	4.71e3	4.06e3	1.041	1.0000	4.84	4.79	14.5	13.94	111.5
42	45	13C2-PFDA	515.1 > 469.9	1.59e4	1.34e4	1.217	1.0000	5.14	5.07	14.8	12.13	97.1
43	46	13C2-8:2 FTS	529.1 > 508.7	2.57e3	2.10e4	0.131	1.0000	5.12	5.04	1.53	11.66	93.3
44	47	d3-N-MeFOSAA	573.3 > 419	7.12e3	1.66e4	0.432	1.0000	5.29	5.21	5.36	12.40	99.2
45	48	d5-N-EtFOSAA	589.3 > 419	6.39e3	1.66e4	0.476	1.0000	5.45	5.36	4.81	10.11	80.9
46	49	13C2-PFUdA	565 > 519.8	1.95e4	1.66e4	0.969	1.0000	5.46	5.38	14.7	15.14	121.1
47	50	13C2-PFDoA	615.0 > 569.7	1.65e4	1.66e4	0.605	1.0000	5.74	5.66	12.4	20.52	164.1
48	51	d3-N-MeFOSA	515.2 > 168.9	2.11e4	1.66e4	0.116	1.0000	5.84	5.84	15.9	137.6	91.7
49	52	13C2-PFTeDA	714.8 > 669.6	3.97e3	1.66e4	0.331	1.0000	6.20	6.11	2.99	9.026	72.2
50	53	d5-N-ETFOSA	531.1 > 168.9	3.16e4	1.66e4	0.171	1.0000	6.22	6.18	23.8	138.8	92.6
51	54	13C2-PFHxDA	815 > 769.7	3.74e3	1.66e4	0.577	1.0000	6.51	6.43	2.82	4.885	97.7
52	55	d7-N-MeFOSE	623.1 > 58.9	2.63e4	1.66e4	0.152	1.0000	6.31	6.26	19.8	130.4	86.9
53	56	d9-N-EtFOSE	639.2 > 58.8	2.65e4	1.66e4	0.142	1.0000	6.45	6.41	20.0	140.5	93.6
54	57	13C4-PFBA	217. > 171.8	1.70e4	1.70e4	1.000	1.0000	1.46	1.49	12.5	12.50	100.0
55	58	13C5-PFHxA	318 > 272.9	2.10e4	2.10e4	1.000	1.0000	3.19	3.19	12.5	12.50	100.0
56	59	13C3-PFHxS	401.9 > 79.9	4.43e3	4.43e3	1.000	1.0000	3.96	3.94	12.5	12.50	100.0
57	60	13C8-PFOA	421.3 > 376	1.83e4	1.83e4	1.000	1.0000	4.33	4.29	12.5	12.50	100.0
58	61	13C9-PFNA	472.2 > 426.9	2.18e4	2.18e4	1.000	1.0000	4.70	4.71	12.5	12.50	100.0
59	62	13C4-PFOS	503 > 79.9	4.06e3	4.06e3	1.000	1.0000	4.84	4.79	12.5	12.50	100.0
60	63	13C6-PFDA	519.1 > 473.7	1.34e4	1.34e4	1.000	1.0000	5.14	5.07	12.5	12.50	100.0
61	64	13C7-PFUdA	570.1 > 524.8	1.66e4	1.66e4	1.000	1.0000	5.46	5.38	12.5	12.50	100.0
62	72	13C2-4:2 FTS	329.2>308.9	4.41e3	2.10e4	0.287	1.0000	3.10	3.09	2.63	9.158	73.3

50-150%.

50-150%.

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Name: 180206M1_80, Date: 07-Feb-2018, Time: 02:20:49, ID: ST180206M1-6 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-6 PFC CS3 18A3012	1.49e4	114.1	NO
2	2	13C5-PFHxA	ST180206M1-6 PFC CS3 18A3012	1.90e4	123.4	NO
3	3	13C3-PFHxS	ST180206M1-6 PFC CS3 18A3012	4.39e3	131.4	NO
4	4	13C8-PFOA	ST180206M1-6 PFC CS3 18A3012	1.59e4	117.0	NO
5	5	13C9-PFNA	ST180206M1-6 PFC CS3 18A3012	1.43e4	92.7	NO
6	6	13C4-PFOS	ST180206M1-6 PFC CS3 18A3012	4.27e3	113.7	NO
7	7	13C6-PFDA	ST180206M1-6 PFC CS3 18A3012	1.51e4	145.8	NO
8	8	13C7-PFUdA	ST180206M1-6 PFC CS3 18A3012	1.79e4	160.1	YES

Name: 180206M1_81, Date: 07-Feb-2018, Time: 02:32:19, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_82, Date: 07-Feb-2018, Time: 02:43:48, ID: B8A0167-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BS1 OPR 0.125	9.63e3	73.5	NO
2	2	13C5-PFHxA	B8A0167-BS1 OPR 0.125	1.14e4	73.8	NO
3	3	13C3-PFHxS	B8A0167-BS1 OPR 0.125	2.74e3	81.8	NO
4	4	13C8-PFOA	B8A0167-BS1 OPR 0.125	9.92e3	73.1	NO
5	5	13C9-PFNA	B8A0167-BS1 OPR 0.125	1.18e4	76.8	NO
6	6	13C4-PFOS	B8A0167-BS1 OPR 0.125	2.03e3	54.0	NO
7	7	13C6-PFDA	B8A0167-BS1 OPR 0.125	5.84e3	56.3	NO
8	8	13C7-PFUdA	B8A0167-BS1 OPR 0.125	2.01e3	18.0	YES

Name: 180206M1_83, Date: 07-Feb-2018, Time: 02:55:18, ID: B8A0167-BSD1 LCSD 0.125, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BSD1 LCSD 0.125	9.26e3	70.7	NO
2	2	13C5-PFHxA	B8A0167-BSD1 LCSD 0.125	1.14e4	74.2	NO
3	3	13C3-PFHxS	B8A0167-BSD1 LCSD 0.125	2.56e3	76.5	NO
4	4	13C8-PFOA	B8A0167-BSD1 LCSD 0.125	9.09e3	67.0	NO
5	5	13C9-PFNA	B8A0167-BSD1 LCSD 0.125	7.60e3	49.3	YES
6	6	13C4-PFOS	B8A0167-BSD1 LCSD 0.125	1.95e3	52.0	NO
7	7	13C6-PFDA	B8A0167-BSD1 LCSD 0.125	4.04e3	39.0	YES
8	8	13C7-PFUdA	B8A0167-BSD1 LCSD 0.125	2.63e3	23.5	YES

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Name: 180206M1_84, Date: 07-Feb-2018, Time: 03:06:44, ID: B8A0167-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0167-BLK1 Method Blank 0.125	9.28e3	70.9	NO
2	2	13C5-PFHxA	B8A0167-BLK1 Method Blank 0.125	1.06e4	68.6	NO
3	3	13C3-PFHxS	B8A0167-BLK1 Method Blank 0.125	2.50e3	74.8	NO
4	4	13C8-PFOA	B8A0167-BLK1 Method Blank 0.125	1.06e4	77.9	NO
5	5	13C9-PFNA	B8A0167-BLK1 Method Blank 0.125	1.03e4	66.9	NO
6	6	13C4-PFOS	B8A0167-BLK1 Method Blank 0.125	2.10e3	55.9	NO
7	7	13C6-PFDA	B8A0167-BLK1 Method Blank 0.125	7.10e3	68.4	NO
8	8	13C7-PFUdA	B8A0167-BLK1 Method Blank 0.125	4.35e3	38.9	YES

Name: 180206M1_85, Date: 07-Feb-2018, Time: 03:18:14, ID: 1800156-09 MINNE-06-SW01-011718 0.12113, Description: MINNE-06-SW01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-09 MINNE-06-SW01-011718 0...	8.97e3	68.5	NO
2	2	13C5-PFHxA	1800156-09 MINNE-06-SW01-011718 0...	1.17e4	76.0	NO
3	3	13C3-PFHxS	1800156-09 MINNE-06-SW01-011718 0...	2.97e3	88.8	NO
4	4	13C8-PFOA	1800156-09 MINNE-06-SW01-011718 0...	1.06e4	78.4	NO
5	5	13C9-PFNA	1800156-09 MINNE-06-SW01-011718 0...	1.00e4	65.0	NO
6	6	13C4-PFOS	1800156-09 MINNE-06-SW01-011718 0...	2.47e3	65.7	NO
7	7	13C6-PFDA	1800156-09 MINNE-06-SW01-011718 0...	7.78e3	75.0	NO
8	8	13C7-PFUdA	1800156-09 MINNE-06-SW01-011718 0...	9.38e3	83.8	NO

Name: 180206M1_86, Date: 07-Feb-2018, Time: 03:29:43, ID: 1800156-10 MINNE-GW-DUP02-011218 0.12287, Description: MINNE-GW-DUP02-011218

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-10 MINNE-GW-DUP02-01121...	9.13e3	69.7	NO
2	2	13C5-PFHxA	1800156-10 MINNE-GW-DUP02-01121...	1.08e4	70.1	NO
3	3	13C3-PFHxS	1800156-10 MINNE-GW-DUP02-01121...	2.40e3	71.7	NO
4	4	13C8-PFOA	1800156-10 MINNE-GW-DUP02-01121...	9.08e3	66.9	NO
5	5	13C9-PFNA	1800156-10 MINNE-GW-DUP02-01121...	8.49e3	55.1	NO
6	6	13C4-PFOS	1800156-10 MINNE-GW-DUP02-01121...	1.84e3	49.1	YES
7	7	13C6-PFDA	1800156-10 MINNE-GW-DUP02-01121...	5.83e3	56.2	NO
8	8	13C7-PFUdA	1800156-10 MINNE-GW-DUP02-01121...	2.78e3	24.8	YES

Name: 180206M1_87, Date: 07-Feb-2018, Time: 03:41:10, ID: 1800156-11 MINNE-GW-TW01A-011218 0.12321, Description: MINNE-GW-TW01A-011218

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800156-11 MINNE-GW-TW01A-01121...	9.26e3	70.7	NO
2	2	13C5-PFHxA	1800156-11 MINNE-GW-TW01A-01121...	1.14e4	73.8	NO
3	3	13C3-PFHxS	1800156-11 MINNE-GW-TW01A-01121...	2.76e3	82.5	NO
4	4	13C8-PFOA	1800156-11 MINNE-GW-TW01A-01121...	1.01e4	74.2	NO
5	5	13C9-PFNA	1800156-11 MINNE-GW-TW01A-01121...	9.21e3	59.7	NO
6	6	13C4-PFOS	1800156-11 MINNE-GW-TW01A-01121...	2.11e3	56.3	NO
7	7	13C6-PFDA	1800156-11 MINNE-GW-TW01A-01121...	6.36e3	61.4	NO
8	8	13C7-PFUdA	1800156-11 MINNE-GW-TW01A-01121...	4.52e3	40.3	YES

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Name: 180206M1_88, Date: 07-Feb-2018, Time: 03:52:37, ID: 1800159-12 MINNE-GW-TW10-011718 0.1059, Description: MINNE-GW-TW10-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800159-12 MINNE-GW-TW10-011718 ...	9.82e3	75.0	NO
2	2	13C5-PFHxA	1800159-12 MINNE-GW-TW10-011718 ...	1.18e4	76.4	NO
3	3	13C3-PFHxS	1800159-12 MINNE-GW-TW10-011718 ...	2.84e3	85.0	NO
4	4	13C8-PFOA	1800159-12 MINNE-GW-TW10-011718 ...	1.04e4	76.6	NO
5	5	13C9-PFNA	1800159-12 MINNE-GW-TW10-011718 ...	1.03e4	66.6	NO
6	6	13C4-PFOS	1800159-12 MINNE-GW-TW10-011718 ...	2.25e3	60.0	NO
7	7	13C6-PFDA	1800159-12 MINNE-GW-TW10-011718 ...	7.66e3	73.8	NO
8	8	13C7-PFUdA	1800159-12 MINNE-GW-TW10-011718 ...	9.44e3	84.3	NO

Name: 180206M1_89, Date: 07-Feb-2018, Time: 04:04:04, ID: 1800178-12 YEAGR-SW-DUP01-011718 0.12161, Description: YEAGR-SW-DUP01-011718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800178-12 YEAGR-SW-DUP01-01171...	8.45e3	64.5	NO
2	2	13C5-PFHxA	1800178-12 YEAGR-SW-DUP01-01171...	9.54e3	61.9	NO
3	3	13C3-PFHxS	1800178-12 YEAGR-SW-DUP01-01171...	2.16e3	64.6	NO
4	4	13C8-PFOA	1800178-12 YEAGR-SW-DUP01-01171...	9.47e3	69.8	NO
5	5	13C9-PFNA	1800178-12 YEAGR-SW-DUP01-01171...	7.85e3	50.9	NO
6	6	13C4-PFOS	1800178-12 YEAGR-SW-DUP01-01171...	2.06e3	55.0	NO
7	7	13C6-PFDA	1800178-12 YEAGR-SW-DUP01-01171...	5.14e3	49.6	YES
8	8	13C7-PFUdA	1800178-12 YEAGR-SW-DUP01-01171...	5.92e3	52.9	NO

Name: 180206M1_90, Date: 07-Feb-2018, Time: 04:15:30, ID: 1800179-12 YEAGR-GW-BW02-011918 0.11851, Description: YEAGR-GW-BW02-011918

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800179-12 YEAGR-GW-BW02-011918...	8.58e3	65.6	NO
2	2	13C5-PFHxA	1800179-12 YEAGR-GW-BW02-011918...	1.05e4	68.3	NO
3	3	13C3-PFHxS	1800179-12 YEAGR-GW-BW02-011918...	2.75e3	82.1	NO
4	4	13C8-PFOA	1800179-12 YEAGR-GW-BW02-011918...	8.37e3	61.7	NO
5	5	13C9-PFNA	1800179-12 YEAGR-GW-BW02-011918...	9.65e3	62.6	NO
6	6	13C4-PFOS	1800179-12 YEAGR-GW-BW02-011918...	2.50e3	66.6	NO
7	7	13C6-PFDA	1800179-12 YEAGR-GW-BW02-011918...	6.86e3	66.1	NO
8	8	13C7-PFUdA	1800179-12 YEAGR-GW-BW02-011918...	8.17e3	73.0	NO

Name: 180206M1_91, Date: 07-Feb-2018, Time: 04:26:57, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA	5.68e0	0.1	YES
8	8	13C7-PFUdA	IPA			NO

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Name: 180206M1_92, Date: 07-Feb-2018, Time: 04:38:27, ID: ST180206M1-7 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-7 PFC CS3 18A3012	1.58e4	120.4	NO
2	2	13C5-PFHxA	ST180206M1-7 PFC CS3 18A3012	1.82e4	118.1	NO
3	3	13C3-PFHxS	ST180206M1-7 PFC CS3 18A3012	3.83e3	114.6	NO
4	4	13C8-PFOA	ST180206M1-7 PFC CS3 18A3012	1.98e4	146.0	NO
5	5	13C9-PFNA	ST180206M1-7 PFC CS3 18A3012	1.96e4	127.2	NO
6	6	13C4-PFOS	ST180206M1-7 PFC CS3 18A3012	4.16e3	110.9	NO
7	7	13C6-PFDA	ST180206M1-7 PFC CS3 18A3012	1.49e4	143.4	NO
8	8	13C7-PFUdA	ST180206M1-7 PFC CS3 18A3012	1.45e4	129.2	NO

Name: 180206M1_93, Date: 07-Feb-2018, Time: 04:49:56, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_94, Date: 07-Feb-2018, Time: 05:01:25, ID: B8A0197-BS1 OPR 1, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-BS1 OPR 1	9.68e3	73.9	NO
2	2	13C5-PFHxA	B8A0197-BS1 OPR 1	1.11e4	72.2	NO
3	3	13C3-PFHxS	B8A0197-BS1 OPR 1	2.17e3	64.8	NO
4	4	13C8-PFOA	B8A0197-BS1 OPR 1	9.38e3	69.1	NO
5	5	13C9-PFNA	B8A0197-BS1 OPR 1	8.27e3	53.6	NO
6	6	13C4-PFOS	B8A0197-BS1 OPR 1	1.06e3	28.1	YES
7	7	13C6-PFDA	B8A0197-BS1 OPR 1	2.13e3	20.5	YES
8	8	13C7-PFUdA	B8A0197-BS1 OPR 1	3.91e2	3.5	YES

Name: 180206M1_95, Date: 07-Feb-2018, Time: 05:12:54, ID: B8A0197-BLK1 Method Blank 1, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-BLK1 Method Blank 1	8.82e3	67.4	NO
2	2	13C5-PFHxA	B8A0197-BLK1 Method Blank 1	1.26e4	81.7	NO
3	3	13C3-PFHxS	B8A0197-BLK1 Method Blank 1	2.51e3	74.9	NO
4	4	13C8-PFOA	B8A0197-BLK1 Method Blank 1	9.93e3	73.2	NO
5	5	13C9-PFNA	B8A0197-BLK1 Method Blank 1	1.18e4	76.4	NO
6	6	13C4-PFOS	B8A0197-BLK1 Method Blank 1	2.03e3	54.0	NO
7	7	13C6-PFDA	B8A0197-BLK1 Method Blank 1	4.41e3	42.5	YES
8	8	13C7-PFUdA	B8A0197-BLK1 Method Blank 1	2.07e3	18.5	YES

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Name: 180206M1_96, Date: 07-Feb-2018, Time: 05:24:25, ID: B8A0197-MS1 Matrix Spike 1.27, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-MS1 Matrix Spike 1.27	9.70e3	74.1	NO
2	2	13C5-PFHxA	B8A0197-MS1 Matrix Spike 1.27	1.14e4	74.0	NO
3	3	13C3-PFHxS	B8A0197-MS1 Matrix Spike 1.27	2.85e3	85.1	NO
4	4	13C8-PFOA	B8A0197-MS1 Matrix Spike 1.27	9.54e3	70.3	NO
5	5	13C9-PFNA	B8A0197-MS1 Matrix Spike 1.27	7.79e3	50.6	NO
6	6	13C4-PFOS	B8A0197-MS1 Matrix Spike 1.27	1.55e3	41.3	YES
7	7	13C6-PFDA	B8A0197-MS1 Matrix Spike 1.27	3.90e3	37.6	YES
8	8	13C7-PFUdA	B8A0197-MS1 Matrix Spike 1.27	9.62e2	8.6	YES

Name: 180206M1_97, Date: 07-Feb-2018, Time: 05:35:54, ID: B8A0197-MSD1 Matrix Spike Dup 1.21, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8A0197-MSD1 Matrix Spike Dup 1.21	9.90e3	75.6	NO
2	2	13C5-PFHxA	B8A0197-MSD1 Matrix Spike Dup 1.21	1.04e4	67.7	NO
3	3	13C3-PFHxS	B8A0197-MSD1 Matrix Spike Dup 1.21	2.72e3	81.2	NO
4	4	13C8-PFOA	B8A0197-MSD1 Matrix Spike Dup 1.21	9.79e3	72.2	NO
5	5	13C9-PFNA	B8A0197-MSD1 Matrix Spike Dup 1.21	8.45e3	54.8	NO
6	6	13C4-PFOS	B8A0197-MSD1 Matrix Spike Dup 1.21	1.81e3	48.2	YES
7	7	13C6-PFDA	B8A0197-MSD1 Matrix Spike Dup 1.21	4.22e3	40.7	YES
8	8	13C7-PFUdA	B8A0197-MSD1 Matrix Spike Dup 1.21	1.11e3	9.9	YES

Name: 180206M1_98, Date: 07-Feb-2018, Time: 05:47:24, ID: 1800140-01 FT-SS501-0001 1.23, Description: FT-SS501-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-01 FT-SS501-0001 1.23	8.99e3	68.7	NO
2	2	13C5-PFHxA	1800140-01 FT-SS501-0001 1.23	1.11e4	72.3	NO
3	3	13C3-PFHxS	1800140-01 FT-SS501-0001 1.23	2.88e3	86.2	NO
4	4	13C8-PFOA	1800140-01 FT-SS501-0001 1.23	8.39e3	61.9	NO
5	5	13C9-PFNA	1800140-01 FT-SS501-0001 1.23	8.42e3	54.6	NO
6	6	13C4-PFOS	1800140-01 FT-SS501-0001 1.23	2.26e3	60.2	NO
7	7	13C6-PFDA	1800140-01 FT-SS501-0001 1.23	5.26e3	50.7	NO
8	8	13C7-PFUdA	1800140-01 FT-SS501-0001 1.23	4.29e3	38.3	YES

Name: 180206M1_99, Date: 07-Feb-2018, Time: 05:58:52, ID: 1800140-02 FT-SS502-0001 1.17, Description: FT-SS502-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-02 FT-SS502-0001 1.17	8.45e3	64.5	NO
2	2	13C5-PFHxA	1800140-02 FT-SS502-0001 1.17	1.08e4	69.8	NO
3	3	13C3-PFHxS	1800140-02 FT-SS502-0001 1.17	2.92e3	87.2	NO
4	4	13C8-PFOA	1800140-02 FT-SS502-0001 1.17	8.86e3	65.3	NO
5	5	13C9-PFNA	1800140-02 FT-SS502-0001 1.17	1.03e4	66.9	NO
6	6	13C4-PFOS	1800140-02 FT-SS502-0001 1.17	2.37e3	63.0	NO
7	7	13C6-PFDA	1800140-02 FT-SS502-0001 1.17	5.51e3	53.1	NO
8	8	13C7-PFUdA	1800140-02 FT-SS502-0001 1.17	3.50e3	31.2	YES

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Name: 180206M1_100, Date: 07-Feb-2018, Time: 06:10:21, ID: 1800140-03 FT-SS503-0001 1.34, Description: FT-SS503-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-03 FT-SS503-0001 1.34	9.30e3	71.0	NO
2	2	13C5-PFHxA	1800140-03 FT-SS503-0001 1.34	1.20e4	78.2	NO
3	3	13C3-PFHxS	1800140-03 FT-SS503-0001 1.34	3.02e3	90.3	NO
4	4	13C8-PFOA	1800140-03 FT-SS503-0001 1.34	9.56e3	70.5	NO
5	5	13C9-PFNA	1800140-03 FT-SS503-0001 1.34	8.66e3	56.2	NO
6	6	13C4-PFOS	1800140-03 FT-SS503-0001 1.34	2.88e3	76.7	NO
7	7	13C6-PFDA	1800140-03 FT-SS503-0001 1.34	6.43e3	62.0	NO
8	8	13C7-PFUdA	1800140-03 FT-SS503-0001 1.34	6.11e3	54.5	NO

Name: 180206M1_101, Date: 07-Feb-2018, Time: 06:21:51, ID: 1800140-04 FT-SB504-2022 1.26, Description: FT-SB504-2022

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-04 FT-SB504-2022 1.26	9.00e3	68.8	NO
2	2	13C5-PFHxA	1800140-04 FT-SB504-2022 1.26	1.12e4	72.9	NO
3	3	13C3-PFHxS	1800140-04 FT-SB504-2022 1.26	2.53e3	75.7	NO
4	4	13C8-PFOA	1800140-04 FT-SB504-2022 1.26	8.39e3	61.8	NO
5	5	13C9-PFNA	1800140-04 FT-SB504-2022 1.26	9.15e3	59.3	NO
6	6	13C4-PFOS	1800140-04 FT-SB504-2022 1.26	2.28e3	60.6	NO
7	7	13C6-PFDA	1800140-04 FT-SB504-2022 1.26	7.34e3	70.7	NO
8	8	13C7-PFUdA	1800140-04 FT-SB504-2022 1.26	6.02e3	53.8	NO

Name: 180206M1_102, Date: 07-Feb-2018, Time: 06:33:20, ID: 1800140-05 FT-SB505-1618 1.21, Description: FT-SB505-1618

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-05 FT-SB505-1618 1.21	8.96e3	68.4	NO
2	2	13C5-PFHxA	1800140-05 FT-SB505-1618 1.21	1.21e4	78.3	NO
3	3	13C3-PFHxS	1800140-05 FT-SB505-1618 1.21	2.62e3	78.4	NO
4	4	13C8-PFOA	1800140-05 FT-SB505-1618 1.21	1.09e4	80.4	NO
5	5	13C9-PFNA	1800140-05 FT-SB505-1618 1.21	8.16e3	52.9	NO
6	6	13C4-PFOS	1800140-05 FT-SB505-1618 1.21	1.46e3	39.0	YES
7	7	13C6-PFDA	1800140-05 FT-SB505-1618 1.21	3.30e3	31.8	YES
8	8	13C7-PFUdA	1800140-05 FT-SB505-1618 1.21	8.96e2	8.0	YES

Name: 180206M1_103, Date: 07-Feb-2018, Time: 06:44:47, ID: 1800140-06 FT-SB506-2022 1.26, Description: FT-SB506-2022

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-06 FT-SB506-2022 1.26	9.27e3	70.8	NO
2	2	13C5-PFHxA	1800140-06 FT-SB506-2022 1.26	1.17e4	76.1	NO
3	3	13C3-PFHxS	1800140-06 FT-SB506-2022 1.26	2.68e3	80.1	NO
4	4	13C8-PFOA	1800140-06 FT-SB506-2022 1.26	1.02e4	75.6	NO
5	5	13C9-PFNA	1800140-06 FT-SB506-2022 1.26	9.13e3	59.2	NO
6	6	13C4-PFOS	1800140-06 FT-SB506-2022 1.26	1.26e3	33.5	YES
7	7	13C6-PFDA	1800140-06 FT-SB506-2022 1.26	2.63e3	25.4	YES
8	8	13C7-PFUdA	1800140-06 FT-SB506-2022 1.26	1.09e3	9.7	YES

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Name: 180206M1_104, Date: 07-Feb-2018, Time: 06:56:17, ID: 1800140-07 FT-SB507-1819 1.27, Description: FT-SB507-1819

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-07 FT-SB507-1819 1.27	8.83e3	67.4	NO
2	2	13C5-PFHxA	1800140-07 FT-SB507-1819 1.27	1.08e4	70.1	NO
3	3	13C3-PFHxS	1800140-07 FT-SB507-1819 1.27	3.04e3	90.8	NO
4	4	13C8-PFOA	1800140-07 FT-SB507-1819 1.27	8.75e3	64.5	NO
5	5	13C9-PFNA	1800140-07 FT-SB507-1819 1.27	8.84e3	57.3	NO
6	6	13C4-PFOS	1800140-07 FT-SB507-1819 1.27	1.60e3	42.5	YES
7	7	13C6-PFDA	1800140-07 FT-SB507-1819 1.27	5.09e3	49.1	YES
8	8	13C7-PFUdA	1800140-07 FT-SB507-1819 1.27	1.44e3	12.9	YES

Name: 180206M1_105, Date: 07-Feb-2018, Time: 07:07:44, ID: 1800140-08 FT-SB508-1617 1.23, Description: FT-SB508-1617

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-08 FT-SB508-1617 1.23	1.07e4	81.8	NO
2	2	13C5-PFHxA	1800140-08 FT-SB508-1617 1.23	1.28e4	83.3	NO
3	3	13C3-PFHxS	1800140-08 FT-SB508-1617 1.23	3.32e3	99.2	NO
4	4	13C8-PFOA	1800140-08 FT-SB508-1617 1.23	1.16e4	85.5	NO
5	5	13C9-PFNA	1800140-08 FT-SB508-1617 1.23	1.25e4	81.0	NO
6	6	13C4-PFOS	1800140-08 FT-SB508-1617 1.23	2.55e3	68.0	NO
7	7	13C6-PFDA	1800140-08 FT-SB508-1617 1.23	6.58e3	63.5	NO
8	8	13C7-PFUdA	1800140-08 FT-SB508-1617 1.23	3.79e3	33.9	YES

Name: 180206M1_106, Date: 07-Feb-2018, Time: 07:19:10, ID: 1800140-09 FT-SB509-1718 1.33, Description: FT-SB509-1718

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-09 FT-SB509-1718 1.33	9.52e3	72.7	NO
2	2	13C5-PFHxA	1800140-09 FT-SB509-1718 1.33	1.11e4	72.3	NO
3	3	13C3-PFHxS	1800140-09 FT-SB509-1718 1.33	2.74e3	81.9	NO
4	4	13C8-PFOA	1800140-09 FT-SB509-1718 1.33	1.09e4	80.4	NO
5	5	13C9-PFNA	1800140-09 FT-SB509-1718 1.33	7.41e3	48.1	YES
6	6	13C4-PFOS	1800140-09 FT-SB509-1718 1.33	1.12e3	29.9	YES
7	7	13C6-PFDA	1800140-09 FT-SB509-1718 1.33	3.20e3	30.9	YES
8	8	13C7-PFUdA	1800140-09 FT-SB509-1718 1.33	1.19e3	10.6	YES

Name: 180206M1_107, Date: 07-Feb-2018, Time: 07:30:38, ID: 1800140-10 FT-SB510-0910 1.16, Description: FT-SB510-0910

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-10 FT-SB510-0910 1.16	9.90e3	75.6	NO
2	2	13C5-PFHxA	1800140-10 FT-SB510-0910 1.16	1.35e4	87.6	NO
3	3	13C3-PFHxS	1800140-10 FT-SB510-0910 1.16	2.86e3	85.4	NO
4	4	13C8-PFOA	1800140-10 FT-SB510-0910 1.16	1.15e4	84.8	NO
5	5	13C9-PFNA	1800140-10 FT-SB510-0910 1.16	9.97e3	64.7	NO
6	6	13C4-PFOS	1800140-10 FT-SB510-0910 1.16	2.73e3	72.7	NO
7	7	13C6-PFDA	1800140-10 FT-SB510-0910 1.16	8.02e3	77.3	NO
8	8	13C7-PFUdA	1800140-10 FT-SB510-0910 1.16	5.36e3	47.8	YES

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Name: 180206M1_108, Date: 07-Feb-2018, Time: 07:42:05, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA	5.42e0	0.1	YES
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_109, Date: 07-Feb-2018, Time: 07:53:31, ID: ST180206M1-8 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-8 PFC CS3 18A3012	1.68e4	128.0	NO
2	2	13C5-PFHxA	ST180206M1-8 PFC CS3 18A3012	2.06e4	133.7	NO
3	3	13C3-PFHxS	ST180206M1-8 PFC CS3 18A3012	4.71e3	140.9	NO
4	4	13C8-PFOA	ST180206M1-8 PFC CS3 18A3012	2.03e4	150.0	YES
5	5	13C9-PFNA	ST180206M1-8 PFC CS3 18A3012	1.57e4	101.7	NO
6	6	13C4-PFOS	ST180206M1-8 PFC CS3 18A3012	4.26e3	113.5	NO
7	7	13C6-PFDA	ST180206M1-8 PFC CS3 18A3012	1.29e4	124.2	NO
8	8	13C7-PFUdA	ST180206M1-8 PFC CS3 18A3012	1.92e4	171.4	YES

Name: 180206M1_110, Date: 07-Feb-2018, Time: 08:04:58, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA	6.62e0	0.0	YES
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_111, Date: 07-Feb-2018, Time: 08:16:25, ID: 1800140-11 FT-SB510-1415 1.22, Description: FT-SB510-1415

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-11 FT-SB510-1415 1.22	9.24e3	70.6	NO
2	2	13C5-PFHxA	1800140-11 FT-SB510-1415 1.22	1.11e4	72.1	NO
3	3	13C3-PFHxS	1800140-11 FT-SB510-1415 1.22	2.84e3	84.8	NO
4	4	13C8-PFOA	1800140-11 FT-SB510-1415 1.22	9.05e3	66.7	NO
5	5	13C9-PFNA	1800140-11 FT-SB510-1415 1.22	8.40e3	54.5	NO
6	6	13C4-PFOS	1800140-11 FT-SB510-1415 1.22	2.39e3	63.5	NO
7	7	13C6-PFDA	1800140-11 FT-SB510-1415 1.22	5.64e3	54.4	NO
8	8	13C7-PFUdA	1800140-11 FT-SB510-1415 1.22	2.77e3	24.7	YES

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Name: 180206M1_112, Date: 07-Feb-2018, Time: 08:27:54, ID: 1800140-12 FT-SB511-1617 1.24, Description: FT-SB511-1617

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-12 FT-SB511-1617 1.24	9.11e3	69.6	NO
2	2	13C5-PFHxA	1800140-12 FT-SB511-1617 1.24	1.10e4	71.1	NO
3	3	13C3-PFHxS	1800140-12 FT-SB511-1617 1.24	2.46e3	73.4	NO
4	4	13C8-PFOA	1800140-12 FT-SB511-1617 1.24	1.00e4	73.9	NO
5	5	13C9-PFNA	1800140-12 FT-SB511-1617 1.24	1.12e4	72.9	NO
6	6	13C4-PFOS	1800140-12 FT-SB511-1617 1.24	2.47e3	65.8	NO
7	7	13C6-PFDA	1800140-12 FT-SB511-1617 1.24	7.35e3	70.9	NO
8	8	13C7-PFUdA	1800140-12 FT-SB511-1617 1.24	6.13e3	54.8	NO

Name: 180206M1_113, Date: 07-Feb-2018, Time: 08:39:24, ID: 1800140-13 FT-SS512-0001 1.2, Description: FT-SS512-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-13 FT-SS512-0001 1.2	7.76e3	59.3	NO
2	2	13C5-PFHxA	1800140-13 FT-SS512-0001 1.2	9.91e3	64.3	NO
3	3	13C3-PFHxS	1800140-13 FT-SS512-0001 1.2	2.63e3	78.5	NO
4	4	13C8-PFOA	1800140-13 FT-SS512-0001 1.2	8.25e3	60.8	NO
5	5	13C9-PFNA	1800140-13 FT-SS512-0001 1.2	6.27e3	40.7	YES
6	6	13C4-PFOS	1800140-13 FT-SS512-0001 1.2	1.84e3	49.0	YES
7	7	13C6-PFDA	1800140-13 FT-SS512-0001 1.2	2.42e3	23.4	YES
8	8	13C7-PFUdA	1800140-13 FT-SS512-0001 1.2	8.57e2	7.7	YES

Name: 180206M1_114, Date: 07-Feb-2018, Time: 08:50:54, ID: 1800140-14 FT-SB512-0708 1.22, Description: FT-SB512-0708

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-14 FT-SB512-0708 1.22	8.99e3	68.6	NO
2	2	13C5-PFHxA	1800140-14 FT-SB512-0708 1.22	9.95e3	64.6	NO
3	3	13C3-PFHxS	1800140-14 FT-SB512-0708 1.22	2.70e3	80.8	NO
4	4	13C8-PFOA	1800140-14 FT-SB512-0708 1.22	9.88e3	72.8	NO
5	5	13C9-PFNA	1800140-14 FT-SB512-0708 1.22	8.59e3	55.7	NO
6	6	13C4-PFOS	1800140-14 FT-SB512-0708 1.22	1.23e3	32.7	YES
7	7	13C6-PFDA	1800140-14 FT-SB512-0708 1.22	1.96e3	18.9	YES
8	8	13C7-PFUdA	1800140-14 FT-SB512-0708 1.22	5.63e2	5.0	YES

Name: 180206M1_115, Date: 07-Feb-2018, Time: 09:02:22, ID: 1800140-15 FT-SB512-2223 1.2, Description: FT-SB512-2223

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-15 FT-SB512-2223 1.2	8.67e3	66.2	NO
2	2	13C5-PFHxA	1800140-15 FT-SB512-2223 1.2	1.22e4	78.9	NO
3	3	13C3-PFHxS	1800140-15 FT-SB512-2223 1.2	2.65e3	79.2	NO
4	4	13C8-PFOA	1800140-15 FT-SB512-2223 1.2	9.53e3	70.3	NO
5	5	13C9-PFNA	1800140-15 FT-SB512-2223 1.2	6.73e3	43.6	YES
6	6	13C4-PFOS	1800140-15 FT-SB512-2223 1.2	1.04e3	27.6	YES
7	7	13C6-PFDA	1800140-15 FT-SB512-2223 1.2	2.23e3	21.5	YES
8	8	13C7-PFUdA	1800140-15 FT-SB512-2223 1.2	5.92e2	5.3	YES

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Name: 180206M1_116, Date: 07-Feb-2018, Time: 09:13:52, ID: 1800140-16 FT-SS513-0001 1.19, Description: FT-SS513-0001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-16 FT-SS513-0001 1.19	7.86e3	60.0	NO
2	2	13C5-PFHxA	1800140-16 FT-SS513-0001 1.19	9.42e3	61.1	NO
3	3	13C3-PFHxS	1800140-16 FT-SS513-0001 1.19	2.94e3	88.0	NO
4	4	13C8-PFOA	1800140-16 FT-SS513-0001 1.19	9.52e3	70.2	NO
5	5	13C9-PFNA	1800140-16 FT-SS513-0001 1.19	1.10e4	71.3	NO
6	6	13C4-PFOS	1800140-16 FT-SS513-0001 1.19	3.28e3	87.4	NO
7	7	13C6-PFDA	1800140-16 FT-SS513-0001 1.19	9.01e3	86.9	NO
8	8	13C7-PFUdA	1800140-16 FT-SS513-0001 1.19	1.57e4	140.6	NO

Name: 180206M1_117, Date: 07-Feb-2018, Time: 09:25:21, ID: 1800140-17 FT-SB513-1819 1.22, Description: FT-SB513-1819

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-17 FT-SB513-1819 1.22	8.88e3	67.8	NO
2	2	13C5-PFHxA	1800140-17 FT-SB513-1819 1.22	1.15e4	74.6	NO
3	3	13C3-PFHxS	1800140-17 FT-SB513-1819 1.22	2.61e3	77.9	NO
4	4	13C8-PFOA	1800140-17 FT-SB513-1819 1.22	9.90e3	73.0	NO
5	5	13C9-PFNA	1800140-17 FT-SB513-1819 1.22	5.80e3	37.6	YES
6	6	13C4-PFOS	1800140-17 FT-SB513-1819 1.22	6.79e2	18.1	YES
7	7	13C6-PFDA	1800140-17 FT-SB513-1819 1.22	2.02e3	19.5	YES
8	8	13C7-PFUdA	1800140-17 FT-SB513-1819 1.22	7.03e2	6.3	YES

Name: 180206M1_118, Date: 07-Feb-2018, Time: 09:36:51, ID: 1800140-18 FT-Dup01-20180116 1.2, Description: FT-Dup01-20180116

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-18 FT-Dup01-20180116 1.2	9.25e3	70.6	NO
2	2	13C5-PFHxA	1800140-18 FT-Dup01-20180116 1.2	1.10e4	71.6	NO
3	3	13C3-PFHxS	1800140-18 FT-Dup01-20180116 1.2	2.90e3	86.7	NO
4	4	13C8-PFOA	1800140-18 FT-Dup01-20180116 1.2	1.08e4	79.8	NO
5	5	13C9-PFNA	1800140-18 FT-Dup01-20180116 1.2	1.02e4	66.1	NO
6	6	13C4-PFOS	1800140-18 FT-Dup01-20180116 1.2	1.63e3	43.5	YES
7	7	13C6-PFDA	1800140-18 FT-Dup01-20180116 1.2	3.36e3	32.4	YES
8	8	13C7-PFUdA	1800140-18 FT-Dup01-20180116 1.2	1.42e3	12.7	YES

Name: 180206M1_119, Date: 07-Feb-2018, Time: 09:48:20, ID: 1800140-19 FT-Dup02-20180117 1.21, Description: FT-Dup02-20180117

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800140-19 FT-Dup02-20180117 1.21	1.04e4	79.2	NO
2	2	13C5-PFHxA	1800140-19 FT-Dup02-20180117 1.21	1.38e4	89.3	NO
3	3	13C3-PFHxS	1800140-19 FT-Dup02-20180117 1.21	3.09e3	92.5	NO
4	4	13C8-PFOA	1800140-19 FT-Dup02-20180117 1.21	1.17e4	86.2	NO
5	5	13C9-PFNA	1800140-19 FT-Dup02-20180117 1.21	9.21e3	59.7	NO
6	6	13C4-PFOS	1800140-19 FT-Dup02-20180117 1.21	2.27e3	60.4	NO
7	7	13C6-PFDA	1800140-19 FT-Dup02-20180117 1.21	4.65e3	44.9	YES
8	8	13C7-PFUdA	1800140-19 FT-Dup02-20180117 1.21	2.82e3	25.2	YES

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Name: 180206M1_120, Date: 07-Feb-2018, Time: 09:59:50, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA	5.41e0	0.0	YES
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180206M1_121, Date: 07-Feb-2018, Time: 10:11:19, ID: ST180206M1-9 PFC CS3 18A3012, Description: PFC CS3 18A3012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180206M1-9 PFC CS3 18A3012	1.70e4	130.0	NO
2	2	13C5-PFHxA	ST180206M1-9 PFC CS3 18A3012	2.10e4	136.1	NO
3	3	13C3-PFHxS	ST180206M1-9 PFC CS3 18A3012	4.43e3	132.4	NO
4	4	13C8-PFOA	ST180206M1-9 PFC CS3 18A3012	1.83e4	134.7	NO
5	5	13C9-PFNA	ST180206M1-9 PFC CS3 18A3012	2.18e4	141.4	NO
6	6	13C4-PFOS	ST180206M1-9 PFC CS3 18A3012	4.06e3	108.0	NO
7	7	13C6-PFDA	ST180206M1-9 PFC CS3 18A3012	1.34e4	129.6	NO
8	8	13C7-PFUdA	ST180206M1-9 PFC CS3 18A3012	1.66e4	148.2	NO

AC 2/7/2018

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB513	Borehole/Soil boring	1315792.981	272082.953	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB513-1819	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB511	Borehole/Soil boring	1315612.364	272027.902	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB511-1617	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB504	Vertical profile boring	1320839.23	269357.0425	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB504-2022	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB505	Borehole/Soil boring	1315538.733	272119.616	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB505-1618	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSS502	Ground surface	1315601.129	272140.651	N6247016D9008	WE05	TETRA TECH, INC.	FT-SS502-0001	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSS512	Ground surface	1315746.89	272161.668	N6247016D9008	WE05	TETRA TECH, INC.	FT-SS512-0001	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSS513	Ground surface	1315792.981	272082.953	N6247016D9008	WE05	TETRA TECH, INC.	FT-SS513-0001	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB504	Vertical profile boring	1320839.23	269357.0425	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB504-2022-D	Soil	Field duplicate	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB510	Borehole/Soil boring	1315652.869	272046.135	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB510-1415-D	Soil	Field duplicate	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB512	Vertical profile boring	1319722.576	268540.1545	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB512-0708	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB507	Borehole/Soil boring	1315473.619	272052.016	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB507-1819	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB509	Vertical profile boring	1319572.742	269099.4993	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB509-1718	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB510	Borehole/Soil boring	1315652.869	272046.135	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB510-0910	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSS501	Ground surface	1315525.373	272252.801	N6247016D9008	WE05	TETRA TECH, INC.	FT-SS501-0001	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB506	Borehole/Soil boring	1315395.817	272020.95	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB506-2022	Soil	Normal (Regular)	16-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB508	Borehole/Soil boring	1315608.051	272070.822	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB508-1617	Soil	Normal (Regular)	18-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB510	Borehole/Soil boring	1315652.869	272046.135	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB510-1415	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSS503	Ground surface	1315741.591	271957.724	N6247016D9008	WE05	TETRA TECH, INC.	FT-SS503-0001	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds
MID_ATLANTIC	CALVERTON_NWIRP	1800140	SITE 00002	SITE 00002	FTSB512	Vertical profile boring	1319722.576	268540.1545	N6247016D9008	WE05	TETRA TECH, INC.	FT-SB512-2223	Soil	Normal (Regular)	17-Jan-18	537	Perfluoroalkyl Compounds